



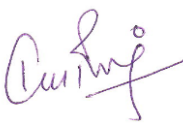
**Validation report form for post-registration changes for
CDM project activities
(Version 03.0)**

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	Cabo Leones Wind Farm UNFCCC Ref. Number: 9741
Process track	<input checked="" type="checkbox"/> Prior approval <input type="checkbox"/> Issuance <input type="checkbox"/> Renewal of crediting period
Version number of the validation report	2.0
Completion date of the validation report	17/11/2021
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 checked="" 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	14.1
Project participants	Ibereólica Cabo Leones I S.A. Aprovechamientos Energéticos S.A. ALLCOT COLOMBIA SAS
Host Party	Chile
Applied methodologies and standardized baselines	ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources – version 13.0.0
Mandatory sectoral scopes	1
Conditional sectoral scopes, if applicable	-

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).

Name and UNFCCC reference number of the DOE	Earthood Services Private Limited UNFCCC Ref. Number: E-0066
Name, position and signature of the approver of the validation report	 Dr. Kaviraj Singh Managing Director

SECTION A. Executive summary

Brief summary of the project activity

The project activity consists in the generation of renewable electric energy with wind power technology in a plant with 175.5 MW of installed capacity, located in Freirina Commune, Huasco province, in 3rd Region of Atacama in the North of Chile. The centre point of the plant is located at: -28.9300 (latitude) and -71.4432 (longitude).

Technical description of main equipment:

- 55 aerogenerators Gamesa SG 2.1-114 with rated power of 2.1 MW (each);
- 12 aerogenerators Gamesa SG 5.0-145 with rated power of 5.0 MW (each) – *to be installed and commissioned in 2021*;
- Total installed capacity: 175.5 MW;
- Plant load factor: 30.6%.

Scope of validation

ALLCOT COLOMBIA SAS has contracted ESPL to conduct the validation of the PRC of the project activity "Cabo Leones Wind Farm".

The scope of the validation is to establish that the PRCs are in accordance with PS for project activities 03.0.

Validation process

The validation process involved the following:

- contract with ALLCOT COLOMBIA SAS for the scope of validation of the PRC of the project activity;
- desk review;
- virtual audit;
- issuance of validation findings;
- reporting, calculation checks, QA/QC and resolution of findings;
- issuance of draft validation report;
- independent technical review of the project documentation;
- issuance of the final validation report;
- submission of the request for renewal, as appropriate.

Conclusion

ESPL has performed the validation of the PRCs of the CDM PA "Cabo Leones Wind Farm" (UNFCCC Ref. Number: 9741).

The validation team has confirmed that the PRC is in accordance with PS for project activities 03.0, relevant CDM rules and requirements and conditions of the applied methodology ACM0002 – version 13.0.0.

The PA is expected to generate an annual average of 276,709 tCO₂e in the first crediting period.

Therefore, the request for registration of the PRC is being submitted in accordance with the CDM procedures.

SECTION B. Validation team, technical reviewer and approver

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/docu ment	On-site inspection	Interviews	Validation findings
1.	Team Leader	OR	Cruz	Sergio	Verifit	Y	N	Y	Y

2.	Technical Expert	OR	Cruz	Sergio	Verifit	Y	N	Y	Y
3.	Methodological Expert	OR	Cruz	Sergio	Verifit	Y	N	Y	Y
4.	Local Expert	OR	Cruz	Sergio	Verifit	Y	N	Y	Y

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	Garg	Shreya	Central Office
2.	Technical Expert	IR	Garg	Shreya	Central Office
3.	Approver	IR	Singh	Kaviraj	Central Office

SECTION C. Means of validation

C.1. Desk/document review

A desk review was conducted by the validation team that included:

- a review of the data and information presented to assess its completeness;
- a review of the registered project activity, the applied methodology including applicable tool(s) and, where applicable, the applied standardized baseline;
- a review of supporting documents.

A complete list of documents/evidences reviewed is included as Appendix 3 of the Validation Report.

C.2. On-site inspection

Duration of on-site inspection: -				
No.	Activity performed on-site	Site location	Date	Team member

The physical site visit was not performed for the validation of PRCs. The alternative means has been considered in accordance with Board recommendation, due to COVID-19, which allowed a deviation from the requirements of paragraph 30 of the VVS-PA. It was not possible to forecast when the travel restrictions would be revoked by public authorities as it depended on the evolution of pandemic, especially as it involves two countries (Brazil – home country of validator – and Chile – plant location).

It is important to note that the PP has an ERPA to deliver the CERs during the 1st quarter of 2021. To perform the verification of the project activity to issue the CERs, it is necessary firstly to validate the present PRC to change the start date of the crediting period, and for this task an alternative mean for site visit was granted as a delay in those validation and, as consequence, in verification and in delivering the CERs could lead to significant financial losses to the PP.

To allow a credible and sufficient means for the present validation, the DOE used other standard auditing techniques for validation, as referred to in section 7.1.3 of the VVS-PA, as follows:

- confirmation from PP that no changes occurred in monitoring plan, measuring equipment;
- current pictures of main equipment;
- video tour using Google Earth;
- document review; and
- interview with PP's representatives (responsible for the management and monitoring of project activity).

Therefore, the PPs have provided all necessary information for a clear and precise understanding of the project activity, which has been considered sufficient by the validation team for the purpose of the present validation.

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Ramos	José Manuel	Ibèreólica	01/03/2021 02/03/2021	- Implementation - Causes for the delay	Sergio Cruz
2.	Aramburu	Asier	ALLCOT	01/03/2021	- Project monitoring - CDM aspects	Sergio Cruz

C.4. Sampling approach

Not applicable as no sampling has been used during the validation.

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	-	CAR 08	-
Changes to the start date of the crediting period	CL 01	CAR 01 CAR 02 CAR 03 CAR 04 CAR 05 CAR 07 CAR 09	-
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	CL 01	CAR 02 CAR 03 CAR 04 CAR 06 CAR 09	-
Changes specific to afforestation and reforestation project activities	-	-	-
Others (please specify)	-	-	-
Total	01	09	00

SECTION D. Validation findings**D.1. Compliance with PDD form**

Means of validation	The project participants have used the latest version of the PDD form for the revised PDD. By checking the updated PDD, the DOE can confirm that the information transferred to the later version of the form is materially the same as that in the registered PDD.
Findings	-
Conclusion	The latest version of the PDD template (CDM-PDD-FORM – version 12.0) available at the UNFCCC website has been used. It has been filled out in accordance with the instructions for filling it out.

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

Means of validation	Not applicable
Findings	-

Conclusion	Not applicable
-------------------	----------------

D.3. Corrections

Means of validation	Not applicable
Findings	CAR 08
Conclusion	Not applicable

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

Means of validation	Originally, the start date of the crediting period is 01/11/2014. The PPs are proposing to change the start date to 12/06/2018, which is the date of start of commercial operations of the project activity. Thus, more than two years.									
	The change is necessary as the implementation of the project activity could not follow the estimated implementation timeline as the negotiation of the loan agreement and the PPA of the project took much longer than expected. Without those issues, it was not possible to continue with the implementation as the financial arrangements were essential for the project activity.									
	It was revealed to the validation team that the PPs tried to have those issues solved before, but they succeeded only by May/2017, when the loan agreement was signed.									
	As per paragraph 236 of Project Standard for project activities – version 3.0, it is necessary to demonstrate that:									
	(a) the project activity remains additional: a new additionality assessment was performed with real values of the implementation of the wind farm in order to demonstrate that the project activity remains additional. The date of the revised investment decision is considered 11/08/2016 , which is the date when the contract with Gamesa (turbines supplier) was signed. The financial parameters that were changed in the new financial analysis were all available by this time.									
	Legend:									
	<div></div>	Values not changed from original investment analysis								
	<div></div>	Values changed due to change in the start of crediting period								
	<div></div>	Values changed due to change in project design								
	<div></div>	Values changed due to change in the start of crediting period and in project design								
	<table><tr><th>Financial parameter</th><th>Value</th><th>Assessment</th></tr><tr><td>Installed Capacity</td><td>175.5 MW</td><td>The value is the total installed capacity of the power plants, as evidenced by new wind study. The parameter was changed due to the change in project design. In the previous submission of PRC, the presented value was the same.</td></tr><tr><td>Total Investment</td><td>kUSD 281,723.80</td><td>Total investment cost of the plants was obtained from contracts and proposals. The plant has an investment cost around kUSD 1,605 per installed MW, which is average value when comparing to market values published in specialized publication (Renewable Power Generation Costs in 2020, from International Renewable Energy Agency – IRENA^(17/)). The parameter was changed due to the change in project design and due to the change in the start of crediting period. As the configuration of the PA was changed and as the price of equipment is highly affected by new technologies, the value of investment has decreased significantly from original validation (approximately 25%).</td></tr></table>	Financial parameter	Value	Assessment	Installed Capacity	175.5 MW	The value is the total installed capacity of the power plants, as evidenced by new wind study. The parameter was changed due to the change in project design. In the previous submission of PRC, the presented value was the same.	Total Investment	kUSD 281,723.80	Total investment cost of the plants was obtained from contracts and proposals. The plant has an investment cost around kUSD 1,605 per installed MW, which is average value when comparing to market values published in specialized publication (Renewable Power Generation Costs in 2020, from International Renewable Energy Agency – IRENA ^(17/)). The parameter was changed due to the change in project design and due to the change in the start of crediting period. As the configuration of the PA was changed and as the price of equipment is highly affected by new technologies, the value of investment has decreased significantly from original validation (approximately 25%).
Financial parameter	Value	Assessment								
Installed Capacity	175.5 MW	The value is the total installed capacity of the power plants, as evidenced by new wind study. The parameter was changed due to the change in project design. In the previous submission of PRC, the presented value was the same.								
Total Investment	kUSD 281,723.80	Total investment cost of the plants was obtained from contracts and proposals. The plant has an investment cost around kUSD 1,605 per installed MW, which is average value when comparing to market values published in specialized publication (Renewable Power Generation Costs in 2020, from International Renewable Energy Agency – IRENA ^(17/)). The parameter was changed due to the change in project design and due to the change in the start of crediting period. As the configuration of the PA was changed and as the price of equipment is highly affected by new technologies, the value of investment has decreased significantly from original validation (approximately 25%).								

			<p>In the previous submission of PRC, the presented value was kUSD 250,380.50. Although this value is more conservative for the financial assessment, evidences dated after the new investment decision were incorrectly used in the previous submission.</p> <p>The value applied is the exact amount available at the time of new investment decision.</p>
	PLF	30.6%	<p>Certified by third party wind study (Altermia Asesores study).</p> <p>The value was validated in the original validation of the PA, as the new value is from after the new investment decision.</p> <p>In the previous submission of PRC, the presented value was 27.9%. The value from Woody's study is from 27/05/2020 and it was incorrectly used in the previous submission.</p> <p>Moreover, the original value still applied is more conservative for the financial assessment.</p>
	Energy Price	85.20 USD/MWh	<p>It is the price calculated by the winning bids at the energy auction.</p> <p>As each energy block was sold by a different price, it is calculated by the total of delivered electricity by the value of each energy block, with a variable component of 10% of each year.</p> <p>The calculation is in accordance with auctions results and directives, which are public^{/16/}.</p> <p>The values were crosschecked with signed PPAs^{/16/}.</p> <p>The parameter was changed due to the change in the start of crediting period.</p> <p>The value was updated with the values of signed PPAs available at the time of new investment decision, by the winning bids at the energy auction.</p> <p>In the previous submission of PRC, the presented value was USD 70.00/MWh. The value was based on estimations of electricity management company of Chile (CDEC-SIC) dated after the new investment decision and it was incorrectly used in the previous submission.</p> <p>Moreover, the value applied now is more conservative for the financial assessment.</p>
	Generated electricity for sale	461.9 GWh/y	<p>The value is calculated using the PLF certified by third party wind study (Altermia Asesores study) and the new installed capacity.</p> <p>The parameter was changed due to the change in project design.</p> <p>In the previous submission of PRC, the presented value was 421.2 GWh/y, as it was calculated with PLF of Woody's study, which was dated after the new investment decision and it was incorrectly used in the previous submission.</p>

			Moreover, the value applied is more conservative for the financial assessment.
	Transmission losses	1.81%	<p>It is an estimation based on internal calculations.</p> <p>The parameter was not impacted by any of the changes.</p> <p>The value was validated in the original validation of the PA.</p> <p>In the previous submission of PRC, the presented value was the same.</p>
	Transmission costs	6.27 USD/MW	<p>CDEC-SIC: Based on Average 2010 Data of Paposo 220 substation.</p> <p>Although the parameter was impacted by the change in the start of crediting period, it is being kept the value that was validated in the original validation of the PA,</p> <p>In the previous submission of PRC, the presented value was 3.57 USD/MW, from CDEC-SIC calculations. This value is from 2019, after the new investment decision and incorrectly used in the previous submission.</p> <p>The value applied is the most conservative one available at the time of new investment decision, as the calculation of the average transmission costs of other plants connected to the same line is 16.387 USD/MW, as per calculation presented to the validation team.</p>
	Operation and Maintenance costs	<p>0 kUSD/MW (years 1-2)</p> <p>35 kUSD/MW (years 3-5)</p> <p>40 kUSD/MW (years 6-20)</p>	<p>The value of operation and maintenance from the O&M estimation of Gamesa.</p> <p>Although the parameter was impacted by the change in the start of crediting period, it is being kept the values that were validated in the original validation of the PA, as the new ones from the signed contract are dated after the new investment decision.</p> <p>In the previous submission of PRC, the presented value was 56 kUSD/MW (years 1-2); 39 kUSD/MW (years 2-3); 52 kUSD/MW (years 3-5); 54 kUSD/MW (years 6-11); and 60 kUSD/MW (years 11-20). The new value from Gamesa contract are from 2020 and they were incorrectly used in the previous submission.</p> <p>Moreover, the values applied are more conservative for the financial assessment.</p>
	Land lease	3.25% of the gross income/y	<p>Land lease contract (page 10)</p> <p>The parameter was not impacted by any of the changes, as the contracts were already signed and were not revised according to PP.</p> <p>The value was validated in the original validation of the PA.</p> <p>In the previous submission of PRC, the presented value was the same.</p>
	Management technical operation	980 kUSD/y	<p>The value of management technical operation from the ING. Propiedad, D.I. Obra y Gestión Técnica</p> <p>Although the parameter was impacted by the change in the start of crediting period, it is</p>

			<p>being kept the value that was validated in the original validation of the PA, as the new proposal is dated after the new investment decision.</p> <p>In the previous submission of PRC, the presented value was 1,920 kUSD/y. This new value comes from a proposal of 2020 and it was incorrectly used in the previous submission.</p> <p>Moreover, the value applied is more conservative for the financial assessment.</p>
	Income tax	17% of net income	<p>Taxes in Chile</p> <p>Although the parameter was impacted by the change in the start of crediting period, it is being used the value that was validated in the original validation of the PA (taxes applicable in Chile then).</p> <p>In the previous submission of PRC, the presented value was 19% of net income, which is the correct figure according to current legislation.</p> <p>Thus, it was applied the most conservative value for the financial assessment.</p>
	Amortization period	10 years	<p>Concept of Resolution #43 for equipment used electric generation</p> <p>The parameter was not impacted by any of the changes.</p> <p>The value was validated in the original validation of the PA.</p> <p>In the previous submission of PRC, the presented value was the same.</p>
	Depreciation	22,311 kUSD/y	<p>Calculation</p> <p>The parameter was not impacted by any of the changes.</p> <p>The value is a result of a calculation validated in the original validation of the PA. As the residual value has increased and as the absolute value has decreased, the result is more conservative</p>
	Residual value	58,613 kUSD	<p>25% of the investment in wind farm civil and electric works is considered.</p> <p>The parameter was not impacted by any of the changes.</p> <p>Nevertheless, to be more conservative, 25% of the investment in wind farm civil and electric works is now considered as residual value, which represents more than 20% of total investment.</p> <p>In the previous submission of PRC, no residual value was considered in the cash flow.</p> <p>The value applied is more conservative for the financial assessment.</p>
	Capital to be financed	70%	<p>Based on internal experience, see "Santa Maria de Nieva Termsheet"</p> <p>Although the parameter was impacted by the change in the start of crediting period, it is kept</p>

			<p>the value that was validated in the original validation of the PA,</p> <p>In the previous submission of PRC, the presented value was 80%, which comes from the loan agreement from May/2017 (after new investment decision) and it was incorrectly used in the previous submission.</p> <p>Moreover, the value applied is more conservative for the financial assessment and it is an usual percentage in the market, as per validation team's expertise</p>
	Interest rate	3.25%	<p>Bank BBVA – Madrid treasury – 24/11/2011</p> <p>Although the parameter was impacted by the change in the start of crediting period, it is being kept the value that was validated in the original validation of the PA, as the value from the report of Bank BBVA for Chile of 2nd trimester of 2016 (latest available before the new investment decision) is 3.5%, which is less conservative for the financial assessment.</p> <p>In the previous submission of PRC, the presented value was 3.27%. This value from the loan agreement from May/2017 (after new investment decision) was incorrectly used in the previous submission.</p>
	Swap	3.5%	<p>Bank BBVA period 15/06/2011 to 15/12/2011</p> <p>The parameter was impacted by the change in the start of crediting period.</p> <p>The value was updated by the report of Bank BBVA for Chile of 2nd trimester of 2016, which is more conservative.</p> <p>In the previous submission of PRC, the presented value was 0.99%. Although this value is more conservative for the financial assessment, the swap agreement was from 2020 (after the new investment decision) and it was incorrectly used in the previous submission.</p> <p>The value applied is the most conservative one available at the time of new investment decision.</p>
	Debt-Service Coverage Ratio (DSCR)	2	<p>Calculated applying payback time to Base Case – See “Santa Maria de Nieva Termsheet”</p> <p>The parameter was not impacted by any of the changes.</p> <p>The value was validated in the original validation of the PA.</p> <p>In the previous submission of PRC, the presented value was the same.</p>
	Benchmark	8.7%	<p>The value is a default value of the expected return on equity in Chile, according to the TOOL27 – version 06, for project that belongs to Group 1 – “Energy Industries” – version of TOOL27 that was valid at the time of the revised investment decision on 11/08/2016.</p>

			<p>The parameter was impacted by the change in the start of crediting period.</p> <p>The value was changed to be in accordance with the investment tool available at the time of new investment decision, i.e., TOOL27 – version 06.</p> <p>In the previous submission of PRC, the presented value was 10.3%, which was the value of the Guidelines on the Assessment of Investment Analysis – version 05, for project that belongs to Group 1 – “Energy Industries”, available at the time of original investment decision and therefore, not proper for the new investment decision.</p>
	<p>* Also refer to CAR 09.</p> <p>New sensibility analyses have been performed and the project continues being additional.</p> <p>The Investment Costs were updated with real invoices and has decreased, whereas the installed capacity and hence net electricity generation varied accordingly and hence, resulted in lower revenues.</p> <p>With those changes, the Equity IRR was decreased from 7.25% (original assessment) to 5.3% (assessment with the new configuration of installed capacity, electricity generation and actual investment), which is far below the validated benchmark of 8.7% (from the TOOL27 – version 06).</p> <p>It is important to note that even with the default benchmark from TOOL27 – version 10.0 (default benchmark: 8.58%) and the latest TOOL27 – version 11.0 (default benchmark: 9.29%), the project activity remains additional. Nevertheless, TOOL27 – version 06 was used as it was the version valid at the time of the revised investment decision on 11/08/2016.</p> <p>It is important to point out that a new wind study was performed with the final configuration of the plant, after the revised investment decision, which presented a result of 27.9% that will result in a lower generation. This study was not used for the new financial analysis and the original PLF of 30.6% was conservatively used.</p> <p>In addition, a new common practice analysis was performed in accordance with the Methodological Tool Common Practice – version 03.1. It is as follows: The geographical region that was considered for the analysis is the national (Chile) scenario, which is reasonable as the energy sector rules are the same for the whole country and projects that apply the same measure as the proposed project activity are wind farms. From all wind plants in operation in Chile, there are 0 plants with the installed capacity between 87.75 MW and 263.25 MW (+/- 50% of the installed capacity of the project activity) and in operation in Chile on 29/05/2012 (date of publication of the PDD for global stakeholder consultation), and not under CDM validation or already registered. Therefore, there were 0 plants in operation in Chile similar to the project activity. So, N_{all} and $N_{diff} = 0$. Finally, as $N_{all} - N_{diff} = 0$ (i.e., lower than 3), the proposed project activity is not a common practice within the sector in the applicable geographical area. This demonstrates that project activity is not the common or prevailing practice.</p> <p>So, it was concluded that even with this slight decrease of proposed/planned installed capacity, <u>the project remains additional</u>.</p> <p>(b) the original baseline scenario established in the registered PDD remains valid, as it is given by the applied methodology (ACM0002 – v. 13.0.0); and</p>		

	(c) substantive progress has been made by the project participants to start the project activity, as the delay has happened because of difficulties in the financial arrangements that took much longer than expected but were essential for the implementation. In fact, along with this negotiation, the PPs had already signed contracts of purchase of aerogenerators, EPC, among others, which clearly demonstrate their intention to implement the project activity.
Findings	CL 01; CAR 01; CAR 02; CAR 03; CAR 04; CAR 05; CAR 07; CAR 09
Conclusion	<p>The new crediting period is from 12/06/2018 to 11/06/2025.</p> <p>The requested change is in accordance with paragraph 236 of Project Standard for project activities – version 3.0, as there were no changes that occurred to the project activity that would result in a less conservative baseline and that were substantive progress made by the project participants to start the project activity.</p> <p>In addition, the requested change is in accordance with Section 8.3.2 of VVS for project activities – version 3.0:</p> <ul style="list-style-type: none"> - the changes above reflect the actual information observed during the virtual site visit and are considered in compliance with CDM PS for PA; - the changes above are considered accurate by the validation team; - the change to the start date of the crediting period is more than two years. The project activity continues additional, the original baseline scenario established in the registered PDD remains valid; and it was demonstrated that substantive progress has been made by the project participants to start the project activity. <p>The ER estimates were also updated taking into account the new configuration of the plant.</p>

D.5. Inclusion of a monitoring plan

Means of validation	Not applicable
Findings	-
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	-
Conclusion	Not applicable

D.7. Changes to the project design

Means of validation	<p>The change to the project design is an increase in the capacity specified in the registered PDD – at the registered PDD, the capacity is 170 MW and the change increases the capacity to 175.5 MW.</p> <p>The change is due to the change in the configuration of the wind plant and difference in the installed capacity of the aerogenerators. The difference is as follows:</p> <table border="1"> <thead> <tr> <th>Registered PDD</th><th>Revised PDD / Actual scenario</th></tr> </thead> <tbody> <tr> <td>85 aerogenerators of 2.0 MW of installed capacity (each)</td><td>55 aerogenerators of 2.1 MW of installed capacity (each)</td></tr> <tr> <td></td><td>12 aerogenerators of 5.0 MW of installed capacity (each)</td></tr> <tr> <td>Total installed capacity: 170.0 MW</td><td>Total installed capacity: 175.5 MW</td></tr> </tbody> </table> <p>It is worth mentioning that although there was an increase in the installed capacity, the the real capacity of the plant is limited to 170 MW since this is the maximum capacity of the transformer. So, the project activity energy injection is limited to this value.</p> <p>It is confirmed that the amount of CERs estimated due to the increase of capacity are smaller than 20%, which complies with requirements of PS para 241(a) (i) a. In fact, after the full implementation of the PA, the increase of estimated CERs will be close to 3.4%.</p> <p>In addition, it could be confirmed by the interviews that the actual configuration was divided in two phases:</p>	Registered PDD	Revised PDD / Actual scenario	85 aerogenerators of 2.0 MW of installed capacity (each)	55 aerogenerators of 2.1 MW of installed capacity (each)		12 aerogenerators of 5.0 MW of installed capacity (each)	Total installed capacity: 170.0 MW	Total installed capacity: 175.5 MW
Registered PDD	Revised PDD / Actual scenario								
85 aerogenerators of 2.0 MW of installed capacity (each)	55 aerogenerators of 2.1 MW of installed capacity (each)								
	12 aerogenerators of 5.0 MW of installed capacity (each)								
Total installed capacity: 170.0 MW	Total installed capacity: 175.5 MW								

	<ul style="list-style-type: none"> • 1st phase: 55 aerogenerators of 2.1 MW of installed capacity; and • 2nd phase: 12 aerogenerators of 5.0 MW of installed capacity. <p>The 2nd phase occurred as a commercial opportunity and it is being implemented in 2021 and it is planned to be commissioned on the 2nd semester of this year. Therefore, it can be confirmed that it is a large scale project activity.</p> <p>The decision for this change occurred after the investment decision and validation of the project activity. It was taken due to a commercial decision.</p> <p>This change to project design was detected by the validation team during the virtual audit and interviews with PPs' representatives.</p> <p>The change has no negative impact to:</p> <ul style="list-style-type: none"> - the registered monitoring plan, as the monitoring of those aerogenerators is the same as predicted in the registered PDD; - the level of accuracy of the monitoring activity is the same set at the registered PDD. Thus, the monitoring necessary for parameters used in the calculations had not suffer any changes. So, the level of accuracy of the monitoring activity continues the same as before; - the applied methodology and other methodological regulatory documents, as all requirements of ACM0002 and related tools continue being applied to the project activity. <p>In addition, the change does not adversely impact:</p> <ul style="list-style-type: none"> - the additionality of the registered CDM project activity: a new financial analysis (refer to Section D.4 above) has been performed (only key parameters have been modified in the original spreadsheet affected by the actual changes of the PA). New sensibility and common practice analyses have been performed and the project continues being additional. <p>So, it was concluded that even with this slight increase of proposed/planned installed capacity, <u>the project remains additional</u>.</p> <ul style="list-style-type: none"> - the scale of the registered CDM project activity, as it is already a large-scale project activity; - the applicability and application of the applied methodologies and other methodological regulatory documents, as project continues to follow all requirements of ACM0002 and related tools; - the compliance of the monitoring plan with the applied methodologies and other methodological regulatory documents. as project continues to follow all requirements of ACM0002 and related tools. <p>Moreover, the revised PDD also complies with all requirements of the applied methodologies and other methodological regulatory documents.</p> <p>Just to note, in consequence of the new configuration the geographic coordinates of each aerogenerator was changed, although the main geographic coordinates (measurements tower – Torre Norte have remained the same i.e., -71.4458 (longitude) and -28.9019 (latitude)).</p>
Findings	CL 01; CAR 02; CAR 03; CAR 04; CAR 06; CAR 09
Conclusion	<p>The proposed change to the project design is in accordance with paragraph 241 (a) of PS for project activities – version 3.0, as it represents an increase in the capacity specified in the registered PDD.</p> <p>As the second phase is not yet implemented, nor commissioned, the increase in the capacity is in accordance with paragraph 132 of Project Cycle Procedure for project activities – version 3.0.</p> <p>In addition, the change is in accordance with paragraph 242 of PS, as:</p> <ul style="list-style-type: none"> - it has no impact to the applicability and application of the applied methodology, as it continues to follow all requirements of ACM0002 and related tools; - it has no impact to the project boundary and any implications on the inclusion or exclusion of emissions sources and leakage emissions; - the monitoring plan continues to follow all the requirements of the applied version of the methodology and tools; - it has no impact to the level of accuracy and completeness in the monitoring of the project activity, which remains as accurate and complete as before;

	<ul style="list-style-type: none"> - the increase in the installed capacity does not adversely affect the additionality of the project as demonstrated by the new financial analysis. Therefore, no adverse impact in the additionality is expected due to this proposed design change. The new financial analysis was done in accordance with paragraph 243 (a) of PS; - the change has no impact to the scale of the project activity, as it continues to be a large-scale project activity. <p>In addition, the requested change is in accordance with Section 8.3.5 of VVS for project activities – version 3.0, as:</p> <ul style="list-style-type: none"> - it complies with CDM PS; - it reflects the real implementation and proposed design of the project activity; - it has no negative impact to the registered monitoring plan; - the project continues to be additional (new additionality assessment was performed), large scale, no negative impact to application of methodology and tools and complies with the monitoring plan. <p>The description now reflects the implementation of the project activity and they were not known at the original validation of the project activity.</p>
--	---

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

Means of validation	Not applicable
Findings	-
Conclusion	Not applicable

SECTION E. Internal quality control

The draft validation report that is prepared by validation team is reviewed by an independent technical review team (one or more members) to confirm if the internal procedures established and implemented by ESPL were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable CDM rules/requirements.

The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope to which the project activity is related. All members of technical review team are independent of the validation team.

During the technical review process, additional findings may be identified or the closed-out findings may be opened, which needs to be satisfactorily resolved before the request for the renewal of the crediting period is submitted to UNFCCC. The independent technical reviewer may either approve the report as such or reject/return the same, in such case, providing the comments/findings/issues that needs to be resolved by the validation team. The decision taken by the technical reviewer is final and is authorized on behalf of ESPL.

SECTION F. Validation opinion

The following changes are being requested under the prior approval track.

The validation team concludes the following:

- the proposed Change to the start date of the crediting period is in accordance with paragraph 236 of Project Standard and Section 8.3.2 of the VVS, as there were no changes that occurred to the project activity that would result in a less conservative baseline and that were substantive progress made by the project participants to start the project activity;
- the proposed Change to the project design is in accordance with paragraph 241 (a) of PS, as it represents an increase in the capacity specified in the registered PDD. In addition, the change is in accordance with paragraph 242 of PS and Section 8.3.5 of the VVS.

Moreover, the revised PDD complies with all requirements of applied methodologies and all information was duly transferred from original PDD to the revised version.

The validation team's opinion is that the proposed changes comply with relevant requirements of CDM PS for PA.

It is important to note that the PP took the chance to also update the list of project participants of the project activity to be in line with changes already approved by UNFCCC and already published at the page of the project activity (i.e., <https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1379824163.75/view>).

The new version of PDD accurately and clearly reflects the proposed changes.

Appendix 1. Abbreviations

Abbreviations	Full texts
ACM	Approved Consolidated Methodology
BE	Baseline Emissions
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEN	National Coordinator of the Electric Sector
CH ₄	Methane
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CP	Crediting Period
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact Assessment
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Green House Gas
GSC/GSP	Global Stakeholder Consultation Process
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
LFG	Landfill gas
KP	Kyoto Protocol
LoA	Letter of Approval/Authorization
MP	Monitoring Plan
OM	Operating Margin
PA	Project Activity
PCP	Project Cycle Procedure
PDD	Project Design Document
PE	Project Emissions
PP	Project Participant
PS	Project Standard
tCO ₂ e	Tonnes of Carbon di oxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VT	Verification Team
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

Competence Statement	
Name	Sergio Bonanno Cruz
Country	Brazil
Education	Post Graduate Diploma in Environment
Experience	25 Years
Field	Environmental Law, CDM, Energy, Climate Change

Approved Roles			
Team Leader	Yes		
Validator	Yes		
Verifier	Yes		
Methodology Expert	ACM0001, ACM0002, AM0026, ACM0006, AMS-I.D		
Local expert	Brazil, Chile		
Financial Expert	Yes		
Technical Reviewer	No		
TA Expert	1.2, 13.1		
Reviewed by	Shreya Garg	Date	04/06/2019
Approved by	Anshika Gupta	Date	04/06/2019

Competence Statement			
Name	Shreya Garg		
Country	India		
Education	M.Sc. (Climate Science & Policy), TERI University		
Experience	6 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	Yes		
Validator	Yes		
Verifier	Yes		
Methodology Expert	AMS.I.A., AMS.I.C., AMS.I.D., AMS.I.F., AMS.II.D., AMS.II.G., AMS.II.J., AMS.III.AV., ACM0002, ACM0012		
Local expert	India		
Financial Expert	No		
Technical Reviewer	Yes		
TA Expert	1.2, 3.1		
Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Ashok Gautam	Date	01/03/2018

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	UNFCCC	Standard: CDM PS for PA	version 03.0	Other
2.	UNFCCC	Standard: CDM PCP for PA	version 03.0	Other
3.	UNFCCC	Standard: CDM VVS for PA	version 03.0	Other
4.	UNFCCC	Form: CDM-PDD-FORM	version 12.0	Other
5.	UNFCCC	Project design document (registered)	version 8 – 25/08/2013	PP
6.	PP	Revised Project design document (draft)	version 9 – 21/10/2020	PP
7.	PP	Revised Project design document (revised)	version 10 – 24/03/2021 version 11 – 14/04/2021 version 12 – 18/05/2021 version 13 – 21/07/2021 version 14 – 21/08/2021	PP
8.	PP	Revised Project design document (final)	version 14.1 – 14/09/2021	PP

9.	PP	ER Spreadsheet (draft)	version 1	PP
10.	PP	ER Spreadsheet (final)	version 2	PP
11.	UNFCCC	<u>Methodology</u> ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources	version 13.0.0	Other
12.	UNFCCC	<u>Methodological tools</u> - TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality	version 07.0.0	Other
		- TOOL07: Tool to calculate the emission factor for an electricity system	version 03.0.0	
		- Guidelines on Common Practice	version 02.0	
13.	PP	<u>New Financial Analysis</u> - 200924 IRR Cabo Leones - 210324 IRR Cabo Leones - 210812 IRR Cabo Leones - 211112 IRR Cabo Leones	- - - -	PP
14.	Official Diary PP BBVA Chile Government PP	<u>Financial documents</u> - Resolution #43 – set the lifetime of equipment - Turbine Supply, Installation and Guarantee Agreement – Parque Eólico Cabo Leones X Gamesa Latam S.L. U and Gamesa Chile SpA - <u>Bank BBVA Report –</u> https://www.bbvaresearch.com/wp-content/uploads/2016/05/Situacion_Chile_2T16.pdf - <u>Taxes in Chile –</u> http://www.sii.cl/aprenda_sobre_impuestos/impuestos/imp_directos.htm#o2p1 <u>Cross check</u> - Addendum to Contract – Parque Eólico Cabo Leones X SIEMSA Chile SpA - Letter Agreement of Swap transaction – Parque Eólico Cabo Leones X Caixabank S.A. - Contract BOP Installations – Parque Eólico Cabo Leones X Gestión y Servicios Cabo Leones S.p.A - Contract BOP Installations – Parque Eólico Cabo Leones X Ferrovial Servicios Salud S.L. - Contract of Engineering and Management – Parque Eólico Cabo Leones X Ibereolica Renovables S.L. and EDF en Chile SpA - Amended and Restated Credit Agreement – Parque Eólico	26/12/2002 11/08/2016 2 nd Trimester/2016 - 15/03/2017 26/06/2020 08/04/2020 23/09/2016 - 25/06/2020	PP

		<p>Cabo Leones X DNB Bank ASA</p> <ul style="list-style-type: none"> - Contract of Technical Management – Parque Eólico Cabo Leones X Ibereolica Renovables S.L. and EDF en Chile SpA - Addendum of Contract of Engineering of Property – Parque Eólico Cabo Leones X Gestión y Servicios Cabo Leones S.p.A - Contract for supply, transportation, assembling and start of operations of turbines – Gestión y Servicios Cabo Leones S.p.A X Siemens Gamesa Renewable Energy S.A and Siemens Gamesa Renewable Energy Chile SpA - Loan Agreement - <u>Average cost of plants connected to same line – Anexo 3</u> 	<p>-</p> <p>01/10/2016</p> <p>24/04/2020</p> <p>May/2017</p> <p>-</p>	
15.	Wood	<p><u>Technical documents</u></p> <ul style="list-style-type: none"> - Wind Study – 6.19.N40009.CHL.R.001 	27/05/2020	PP
16.	<p>PP</p> <p>PP / Chilectra</p> <p>PP / Chilectra</p> <p>PP / EEIquique</p> <p>PP / EEIquique</p>	<p><u>Electricity price</u></p> <ul style="list-style-type: none"> - Spreadsheet with historical data to calculate the average price (precios historicos PECLI (1)) - Minute of adjudication of the Tender of supply of power and electric energy 2015/02 – dated 26/10/2015 - Minute of adjudication of the Tender of supply of power and electric energy 2015/01 – dated 17/08/2016 - Resolution # 459 – refer to the variable component of 10% of each year to compose the basis <p><u>Cross check</u></p> <ul style="list-style-type: none"> - PPA – Parque Eólico Cabo Leones X Chilectra S.A. – Bloque 4A - PPA – Parque Eólico Cabo Leones X Chilectra S.A. – Bloque 4C - <u>PPA</u> – Parque Eólico Cabo Leones X Empresa Eléctrica de Iquique S.A. – Bloque 2A - <u>PPA</u> – Parque Eólico Cabo Leones X Empresa Eléctrica de Iquique S.A. – Bloque 2C 	<p>-</p> <p>14/10/2015</p> <p>27/07/2016</p> <p>01/03/2016</p> <p>01/03/2016</p> <p>18/11/2016</p> <p>18/11/2016</p>	PP
17.	IRENA	Renewable Power Generation Costs in 2020, from International Renewable Energy Agency – page 57	https://www.irena.org/publications/2021/Jun/Renewable-Power-Costs-in-2020	Other

18.	-	DNA of Chile	https://mma.gob.cl/	Other
19.	-	CEN – National Coordinator of the Electric Sector (former CDEC-SIC)	https://sic.coordinador.cl/informes-y-documentos/fichas/operacion-real/	Other
20.	-	IPCC publications	www.ipcc-nggip.iges.or.jp	Other
21.	-	UNFCCC	cdm.unfccc.int	Other

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

Table 1. CLs from this validation

CL ID	01	Section no.	D.4; D.7	Date: 01/03/2021	
Description of CL					
The following evidences were not presented to the validation team:					
a. evidence of the start of operations (12/06/2018);					
b. feasibility and wind studies;					
c. list of milestones of activities from the expected start date of the crediting period (01/11/2014)to the proposed start date of the crediting period (12/06/2018);					
d. commissioning and/or authorizations for operation at full capacity of the plant;					
e. the entire contracts of purchase of aerogenerators (phase 1 and 2) and addendums;					
f. the entire contracts of O&M of the aerogenerators (phase 1 and 2) and addendums;					
g. the entire contract of EPC, BOP, etc. and addendums;					
h. loan agreement and addendums;					
i. PPA;					
j. all supporting documents related to the financial assessment.					
Project participant response				Date: 24/03/2021	
a) "7. COD EO DE02540-18" 3. O&M Documentation\1. Regulations\1. Legal Permits\1. Operational licenses					
"3. Informe de Capacidad Tecnica - Maitencillo Cabo Leones C1" (3. O&M Documentation\1. Regulations\1. Legal Permits), page 6:					
Tabla 2. Características de las centrales en la zona de estudio.					
Central	Propietario	Subestación	Entrada en Operación	Tipo de Central	Potencia máxima bruta [MW]
Parque Eólico Cabo Leones	Parque Eólico Cabo Leones I S.A	S/E Central Parque Leones I	12-06-2018	Eólica	119,4
b) "CHL.N00021 Cabo Leones I Energy Yield Assessment Report_B4_Factor de Planta" (3. O&M Documentation\Financial analysis).					
c) A new paragraph stating some dates was included in Section A.1. In addition, the following evidences are uploaded to the Drive "Acta de Aceptación de Adjudicación", "141224 Cabo Leones I Proposal SI" 3. O&M Documentation\Evidences					
d) "7. COD EO DE02540-18" 3. O&M Documentation\1. Regulations\1. Legal Permits\1. Operational licenses					
e) Contracts can be found in 3. O&M Documentation\Financial analysis folder. In addition, in the financial analysis (200924 IRR_Cabo Leones_), a new sheet was created ("Investment").					
f) Contracts can be found in 3. O&M Documentation\Financial analysis folder. In addition, in the financial analysis (200924 IRR_Cabo Leones_), a new sheet was created ("Investment").					
g) Contracts can be found in 3. O&M Documentation\Financial analysis folder. In addition, in the financial analysis (200924 IRR_Cabo Leones_), a new sheet was created ("Investment").					
h) Loan agreement can be found in 3. O&M Documentation\Financial analysis folder					
i) The PPA is available in in 3. O&M Documentation\Financial analysis folder.					
j) all supporting documents related to the financial assessment are in in 3. O&M Documentation\Financial analysis folder.					
Documentation provided by project participant					

PDD – v. 10; 200924 IRR Cabo Leones; 7 Acta de Aceptación de Adjudicación; 141224 Cabo Leones I Proposal SI; CHL.N00021 Cabo Leones I Energy Yield Assessment Report_B4_Factor de Planta	
DOE assessment	Date: 09/04/2021
The evidences were presented that made possible the validation of the input data used at the financial analysis. CL is closed	

Table 2. CARs from this validation

CAR ID	01	Section no.	D.4	Date: 01/03/2021
Description of CAR				
<i>At Appendix 7 of the PDD, the classification of the PRC to change of EF_{grid,CM} is not correct.</i>				
Project participant response				Date: 24/03/2021
The classification of the PRC to change of EF _{grid,CM} was updated.				
Documentation provided by project participant				
PDD – v. 10				
DOE assessment				Date: 09/04/2021
The requested change is in accordance with paragraph 232 of Project Standard for project activities – version 2.0, as the PP are updating the EF calculations and took the chance to correct the method of OM calculation as the low-cost/must-run resources constitute less than 50% of total grid generation in Chile. Thus, the requested PRC is correctly classified as a Correction. The full assessment of the PRC was carried out in the specific section of in this report. CAR is closed				

CAR ID	02	Section no.	D.4; D.7	Date: 01/03/2021
Description of CAR				
<i>The presented installed capacity of the wind farm and its configuration is not in accordance with the information revealed during the interview with PPs' representative that the configuration of the wind farm is 55 aerogenerators of 2.1 MW of installed capacity (each) and 12 aerogenerators of 5.0 MW of installed capacity (each), which results in 175.5 MW of installed capacity. Therefore, all information and calculations related to the installed capacity, electricity generation and additionality assessment are not in accordance with the actual scenario.</i>				
Project participant response				Date: 24/03/2021
All information and calculations related to the installed capacity, electricity generation and additionality assessment were updated to include the actual scenario.				
Documentation provided by project participant				
PDD – v. 10; 200924 IRR Cabo Leones; ER Calculation Spreadsheet				
DOE assessment				Date: 09/04/2021
The information about the installed capacity of the project activity was revised and the new configuration with 175.5 MW of installed capacity was included in the PDD. As a consequence, the additionality analysis and ex-ante ER calculation were updated with this new capacity. CAR is closed				

CAR ID	03	Section no.	D.4; D.7	Date: 01/03/2021
Description of CAR				
<i>At Section B.5, it is missing a list of milestones of the project activity. In addition, the Common Practice analysis was not reassessed as part of the additionality reassessment.</i>				
Project participant response				Date: 24/03/2021
The Table 10. Milestones of Cabo Leones Wind Farm was updated. The Common practice analysis was reassessed.				
Documentation provided by project participant				
PDD – v. 10				
DOE assessment				Date: 09/04/2021
The list of milestones of the project activity was updated with events that occurred until the start of operations of the project activity on 12/06/2018. The Common practice analysis was reassessed with new configuration of the project activity. Nevertheless, conditions (b) and (f) are not in accordance with the Guidelines on Common Practice – v. 02.0. CAR remains open				
Project participant response #2				Date: 14/04/2021
The Common practice analysis was updated. The project activity remains additional.				
Documentation provided by project participant				
PDD – v. 11				

DOE assessment #2	Date: 05/05/2021
The Common practice analysis was correctly revised in accordance with applicable tool. CAR is closed	

CAR ID	04	Section no.	D.4; D.7	Date: 01/03/2021
---------------	----	--------------------	----------	-------------------------

Description of CAR

At the financial analysis:

- the installed capacity of the project activity is not in accordance with new configuration of the project (55 turbines of 2.1 MW + 12 turbines of 5 MW);*
- the lifetime of equipment of 25 years is not in accordance with the lifetime described at the PDD;*
- the emissions reductions are not in accordance with the value calculated at the ER calculations spreadsheet;*
- the sources of data are not precise.*

Project participant response	Date: 24/03/2021
-------------------------------------	-------------------------

The financial analysis was updated the installed capacity of the project activity is now in accordance with new configuration of the project (55 turbines of 2.1 MW + 12 turbines of 5 MW).
The sources of data were also updated and the emissions reductions value was removed since it is not used in the analysis.

Documentation provided by project participant
--

PDD – v. 10; 200924 IRR Cabo Leones

DOE assessment	Date: 09/04/2021
-----------------------	-------------------------

- the installed capacity of the project activity is in accordance with new configuration of the project (55 turbines of 2.1 MW + 12 turbines of 5 MW);
- the lifetime of equipment of 25 years is still not in accordance with the lifetime described at the PDD;
- the emissions reductions are correctly calculated and in accordance with ex-ante ER calculations spreadsheet;
- the sources of data are precise and enable the validation of data.

Nevertheless, the value of electricity price is not in accordance with PPA presented to the validation team. In addition, the wind study presented to the validation team does not provide the information of total installed capacity of the complex.

Moreover, it is not clear why the change in the configuration of the project activity, with increase of installed capacity resulted in a lower plant load factor and lower expected total generation.

CAR remains open

Project participant response #2	Date: 14/04/2021
--	-------------------------

The lifetime of equipment in the IRR calculation was updated to 20 and now is in accordance with the lifetime described at the PD.

The value of electricity price is in accordance with the estimation of the PP based on the PPA presented to the validation team. To estimate the price of US \$ 70, the following calculation was done: the average of the average monthly injection spot price (in the Maitencillo bar) from January 2018 to August 2020 at a ratio of 1/3 and the average injection price of their PPAs from January 2018 to August 2020 in a ratio of 2/3. The signed PPA are indexed. That is why this approach is necessary.

In addition, the wind study presented to the validation team provides the information of total installed capacity of the complex.

Finally, in the same document (CHL.N00021 Cabo Leones I Energy Yield Assessment Report_B4_FP_intro) it is stated that even if the change in the configuration of the project activity led to an increase of installed capacity, a lower plant load factor is identified. The main reason for this decrease is due to the fact that the Operational data was updated to use real data from Phase 1 of the Project for the revision of the report to provide a more accurate central estimate (P50) and lower level of uncertainty (PXX/P50) compared to the previous assessment which used onsite wind data in isolation. Operational data provides a more accurate estimate of the energy production for Phase 1 as it inherently includes the pattern of production for the windfarm as well as a number of losses that are otherwise calculated, modelled or assumed in the pre-construction energy yield assessment. As production data for Phase 1 are representative of the proposed WTG positions for Phase 2, the wind flow and wake model performance was calibrated through comparison of the existing wind farm production. The calibration process allowed for a more robust energy yield assessment for Phase 2 to be undertaken and thus a more representative central estimate and lower level of uncertainty was derived for Phase 2.

Wood conducted the energy yield assessment for Phase 1 of the Project using 18 months of operational data, acquired between July 2018 and December 2019. Information on operational performance was available in monthly report format. A detailed review of wind farm historical operational performance was conducted, and the key operational parameters reviewed, including an appraisal of wind farm production, availability, and electrical transmission efficiency. This review included an assessment of the Project's future availability and other technical losses applicable to the energy yield assessment. The long term estimation

of Phase 1's energy yield was based on a correlation procedure between monthly wind farm gross production (normalised to 100% availability and with curtailments removed) and long term reference wind speed data.

Documentation provided by project participant

Documents with energy price

DOE assessment #2

Date: 05/05/2021

It was explained that the price was calculated based on the spot price set at the PPA.
In addition, the wind study was performed with a much more precise data and accurate estimations.
CAR is closed

CAR ID	05	Section no.	D.4	Date: 01/03/2021
---------------	----	--------------------	-----	-------------------------

Description of CAR

At Appendix 7 of the PDD, it is missing the demonstration required by paragraph 236 of the Project Standard for project activities – version 02.0, in case the change of the start date of the crediting period of a registered CDM project activity is over two years, where the project participants shall:

- (a) demonstrate that the project activity remains additional;*
- (b) demonstrate that the original baseline scenario established in the registered PDD remains valid, or update the baseline scenario using the latest data, as appropriate;*
- (c) demonstrate that substantive progress has been made by the project participants to start the project activity.*

Project participant response

Date: 24/03/2021

The demonstration required by paragraph 236 of the Project Standard for project activities – version 02.0 was included.

Documentation provided by project participant

PDD – v. 10

DOE assessment

Date: 09/04/2021

At Appendix 7, the demonstration regarding the change of the start date of the crediting period of a registered CDM project activity is over two years was done in accordance with Project Standard.
The full assessment of the PRC was carried out in the specific section of in this report.
CAR is closed

CAR ID	06	Section no.	D.7	Date: 01/03/2021
---------------	----	--------------------	-----	-------------------------

Description of CAR

*It was verified that the configuration of the wind farm was changed and as a result a slight increase in the installed capacity has been observed.
Nevertheless, none of these changes was reported as a PRC in the revised PDD.*

Project participant response

Date: 24/03/2021

The PDD was updated to include slight increase in the nominal capacity regarding the aerogenerator capacity.

Documentation provided by project participant

PDD – v. 10; ER Calculation Spreadsheet

DOE assessment

Date: 09/04/2021

It is reported at the PDD the change to the project design, as there is an increase in the capacity specified in the registered PDD – at the registered PDD, the capacity is 170 MW and the change increases the capacity to 175.5 MW.

The change is due to the change in the configuration of the wind plant and difference in the installed capacity of the aerogenerators.

At Appendix 7, the demonstration regarding the change to the project design was done in accordance with Project Standard.

The full assessment of the PRC was carried out in the specific section of in this report.

CAR is closed

CAR ID	07	Section no.	D.4	Date: 14/05/2021
---------------	----	--------------------	-----	-------------------------

Description of CAR

At EF calculations:

- a. Tab LCMR: the percentage of LCMR calculated for 2015, 2016 and 2017 are considering electricity generated with fuel oil. It is being required to explain why fuel oil is being considered as LCMR. Moreover, for these 3 years, wind energy is not being considered.*
- b. Tab OMY (for all years):*

<ul style="list-style-type: none"> the diesel consumption is given in column F in two different units: ton and M³. Nevertheless, these differences are not being considered when determining the calculations in column L (GHG emission factor per plant) Column L: in the formula, when fuel is in MMBTU, the amount of fuel is not being multiplied by the fuel emission factor. 	
Project participant response	Date: 18/05/2021
The EF calculations were revised.	
Documentation provided by project participant	
EF calculations – v. 2	
DOE assessment	Date: 19/05/2021
The EF calculations were properly revised and values and formulas are not correct.	
CAR is closed	

CAR ID	08	Section no.	D.3	Date: 05/08/2021
Description of CAR				
As per TOOL07, "For grid power plants, use a 3-year generation-weighted average, based on the most recent data available <u>at the time of submission of the CDM-PDD to the DOE for validation</u> ". Thus, it is not clear what is the reason for the change of the calculation of EF_{CM} , as the original calculation complies with the requirements.				
Project participant response				Date: 25/08/2021
The EFCM was updated to the original value.				
Documentation provided by project participant				
PDD – v. 14				
DOE assessment				Date: 02/09/2021
The proposed Correction was excluded and the original EF_{CM} continues being used.				
CAR is closed				

CAR ID	09	Section no.	D.4; D.7	Date: 05/08/2021
Description of CAR				
For the new investment assessment				
<ul style="list-style-type: none"> a. for the PRC Change of the start date of the crediting period, as per paragraph 236 (a) of the Project Standard, it was not demonstrated that the project remains additional due to its delayed implementation. Nevertheless, for PRC Change to the project design, as per paragraph 243 of the Project Standard, the reassessment of the additionality in case of investment analysis, shall only modified key parameters affected by the change and that are valid at the time of the revised investment decision. Thus, the new financial analysis does not clear differentiate what are the changes due to one or the other requested PRC, which does not enable a correct understanding of the calculations; b. it is not clear which date is considered as the revised investment decision of the project activity; c. at spreadsheet IRR calculations – Tab "Assumptions and Results": <ul style="list-style-type: none"> i. it is not clear why data that is not impacted by the PRCs have been changed; ii. it is not clear why evidences from after the revised investment decision were used in the calculations; d. at spreadsheet IRR calculations – Tab "CF(base case)": <ul style="list-style-type: none"> i. it is not clear why 100% of total investment was included as disbursed in 2016 and 2017, if the second phase of the plant was only implemented in 2021; ii. it is not clear why the 1.8% of civil works management was included as CAPEX, if the value of tab "Investment" already considers the entire investment value, included civil works management. 				
Project participant response				Date: 14/09/2021
<ul style="list-style-type: none"> a. An updated financial analysis is sent to clearly differentiate what are the changes due to one or the other requested PRC and to enable a correct understanding of the calculations. b. An evidenced date is clearly indicated in the PDD and in the Financial Analysis to determine the date that is considered as the revised investment decision of the project activity. c. The input data was updated in order to make it clearer regarding the investment decision date and the reason for the data that needs to be changed since they have been impacted by the PRCs. Thus, in the financial analysis the changes are signaled by colours and an additional column showing the justification has been added. d. The financial analysis was updated in order to reflect in a better way the date that disbursements were made by the PP. The civil works were also updated in order to make it clearer. 				
Documentation provided by project participant				
PDD – v. 14.1; Financial analysis				

DOE assessment		Date: 116/11/2021
<p>The financial analysis has been totally revised and the revised investment decision is clear. All evidences are from before the decision and proper for the assessment. The new investment decision is 11/08/2016, which is the date of the Turbine Supply, Installation and Guarantee Agreement with Gamesa. In addition, the investment of first and second phases are accounted separately and civil works management are disregarded from the assessment.</p>		
The new assessment was presented as follows:		
Parameter	Value	Assessment
Installed capacity	175.5 MW	The parameter was changed due to the change in project design. In the previous submission of PRC, the presented value was the same.
Investment	kUSD 281,723.80	The parameter was changed due to the change in project design and due to the change in the start of crediting period. As the configuration of the PA was changed and as the price of equipment is highly affected by new technologies, the value of investment has decreased significantly from original validation (approximately 25%). In the previous submission of PRC, the presented value was kUSD 250,380.50. Although this value is more conservative for the financial assessment, evidences dated after the new investment decision were incorrectly used in the previous submission. The value applied is the exact amount available at the time of new investment decision.
PLF	30.6%	The value was validated in the original validation of the PA (Artemia Asesores' study), as the new value is from after the new investment decision. In the previous submission of PRC, the presented value was 27.9%. The value from Woody's study is from 27/05/2020 and it was incorrectly used in the previous submission. Moreover, the original value still applied is more conservative for the financial assessment.
Energy price	85.20 USD/MWh	The parameter was changed due to the change in the start of crediting period. The value was updated with the values of signed PPAs available at the time of new investment decision, by the winning bids at the energy auction. In the previous submission of PRC, the presented value was USD 70.00/MWh. The value was based on estimations of electricity management company of Chile (CDEC-SIC) dated after the new investment decision and it was incorrectly used in the previous submission. Moreover, the value applied now is more conservative for the financial assessment.
Generated electricity for sale	461.9 GWh/y	The parameter was changed due to the change in project design.

		<p>In the previous submission of PRC, the presented value was 421.2 GWh/y, as it was calculated with PLF of Woody's study, which was dated after the new investment decision and it was incorrectly used in the previous submission.</p> <p>Moreover, the value applied is more conservative for the financial assessment.</p>
Transmission losses	1.81%	<p>The parameter was not impacted by any of the changes.</p> <p>The value was validated in the original validation of the PA.</p> <p>In the previous submission of PRC, the presented value was the same.</p>
Transmission costs	6.27 USD/MW	<p>Although the parameter was impacted by the change in the start of crediting period, it is being kept the value that was validated in the original validation of the PA (official calculation of CDEC-SIC from 2010), In the previous submission of PRC, the presented value was 3.57 USD/MW, from CDEC-SIC calculations. This value is from 2019, after the new investment decision and incorrectly used in the previous submission.</p> <p>The value applied is the most conservative one available at the time of new investment decision, as the calculation of the average transmission costs of other plants connected to the same line is 16.387 USD/MW, as per calculation presented to the validation team.</p>
Operation and Maintenance costs	<p>0 kUSD/MW (years 1-2)</p> <p>35 kUSD/MW (years 3-5)</p> <p>40 kUSD/MW (years 6-20)</p>	<p>Although the parameter was impacted by the change in the start of crediting period, it is being kept the values that were validated in the original validation of the PA (estimation from Gamesa), as the new ones from the signed contract are dated after the new investment decision.</p> <p>In the previous submission of PRC, the presented value was 56 kUSD/MW (years 1-2); 39 kUSD/MW (years 2-3); 52 kUSD/MW (years 3-5); 54 kUSD/MW (years 6-11); and 60 kUSD/MW (years 11-20). The new value from Gamesa contract are from 2020 and they were incorrectly used in the previous submission.</p> <p>Moreover, the values applied are more conservative for the financial assessment.</p>
Land lease	3.25% of the gross income/y	<p>The parameter was not impacted by any of the changes, as the contracts were already signed and were not revised according to PP.</p> <p>The value was validated in the original validation of the PA.</p> <p>In the previous submission of PRC, the presented value was the same.</p>
Management technical operation	980 kUSD/y	<p>Although the parameter was impacted by the change in the start of crediting period, it is being kept the value that was validated in the original validation of the PA (Ingeniería y Propiedad proposal), as the new proposal is dated after the new investment decision.</p> <p>In the previous submission of PRC, the presented value was 1,920 kUSD/y. This new value comes from a proposal of 2020 and it was incorrectly used in the previous submission.</p>

		Moreover, the value applied is more conservative for the financial assessment.
Income tax	17% of net income	<p>Although the parameter was impacted by the change in the start of crediting period, it is being used the value that was validated in the original validation of the PA (taxes applicable in Chile then).</p> <p>In the previous submission of PRC, the presented value was 19% of net income, which is the correct figure according to current legislation.</p> <p>Thus, it was applied the most conservative value for the financial assessment.</p>
Amortization period	10 years	<p>The parameter was not impacted by any of the changes.</p> <p>The value was validated in the original validation of the PA.</p> <p>In the previous submission of PRC, the presented value was the same.</p>
Depreciation	22,311 kUSD/y	<p>The parameter was not impacted by any of the changes.</p> <p>The value is a result of a calculation validated in the original validation of the PA. As the residual value has increased and as the absolute value has decreased, the result is more conservative</p>
Residual value	58,613 kUSD	<p>The parameter was not impacted by any of the changes.</p> <p>Nevertheless, to be more conservative, 25% of the investment in wind farm civil and electric works is now considered as residual value, which represents more than 20% of total investment.</p> <p>In the previous submission of PRC, no residual value was considered in the cash flow.</p> <p>The value applied is more conservative for the financial assessment.</p>
Capital to be financed	70%	<p>Although the parameter was impacted by the change in the start of crediting period, it is kept the value that was validated in the original validation of the PA,</p> <p>In the previous submission of PRC, the presented value was 80%, which comes from the loan agreement from May/2017 (after new investment decision) and it was incorrectly used in the previous submission.</p> <p>Moreover, the value applied is more conservative for the financial assessment.</p>
Interest rate	3.25%	<p>Although the parameter was impacted by the change in the start of crediting period, it is being kept the value that was validated in the original validation of the PA (report of Bank BBVA 2011), as the value from the report of Bank BBVA for Chile of 2nd trimester of 2016 (latest available before the new investment decision) is 3.5%, which is less conservative for the financial assessment.</p> <p>In the previous submission of PRC, the presented value was 3.27%. This value from the loan agreement from May/2017 (after new investment decision) was incorrectly used in the previous submission.</p> <p>Moreover, the value applied is more conservative for the financial assessment.</p>

Swap	3.5%	<p>The parameter was impacted by the change in the start of crediting period.</p> <p>The value was updated by the report of Bank BBVA for Chile of 2nd trimester of 2016, which is more conservative.</p> <p>In the previous submission of PRC, the presented value was 0.99%. Although this value is more conservative for the financial assessment, the swap agreement was from 2020 (after the new investment decision) and it was incorrectly used in the previous submission.</p> <p>The value applied is the most conservative one available at the time of new investment decision.</p>	
Debt-Service Coverage Ratio (DSCR)	2	<p>The parameter was not impacted by any of the changes.</p> <p>The value was validated in the original validation of the PA.</p> <p>In the previous submission of PRC, the presented value was the same.</p>	
Benchmark	8.7%	<p>The parameter was impacted by the change in the start of crediting period.</p> <p>The value was changed to be in accordance with the investment tool available at the time of new investment decision, i.e., TOOL27 – version 06.</p> <p>In the previous submission of PRC, the presented value was 10.3%, which was the value of the Guidelines on the Assessment of Investment Analysis – version 05, for project that belongs to Group 1 – “Energy Industries”, available at the time of original investment decision and therefore, not proper for the new investment decision.</p>	
CAR is closed			

Table 3. FARs from this validation

Not applicable

- - - - -

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		