




**Validation report form for renewal of crediting period 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	Coega IDZ Windfarm UNFCCC ref. no: 8954
Number and duration of the next crediting period	2 nd crediting period: 7 years (01/08/2020 to 31/07/2027)
Version number of the validation report	02
Completion date of the validation report	27/07/2021
Version number of PDD to which this report applies	18
Project participants	Electrawinds Africa and Indian Ocean Islands (Pty) Ltd CO2logic Electrawinds NV
Host Party	South Africa
Applied methodologies and standardized baselines	ACM0002: "Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources", Version 20.0 ASB0040-2018 Standardized baseline: Grid emission factor for Southern African Power Pool, version 1.
Mandatory sectoral scopes	1: Energy industries (renewable/ non-renewable sources)
Conditional sectoral scopes, if applicable	Not applicable
Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next crediting period	5,429 tCO ₂ e
Name and UNFCCC reference number of the DOE	AENOR INTERNACIONAL S.A.U UNFCCC ref. no: E-0021
Name, position and signature of the approver of the validation report	 José Luis Fuentes Climate Change Manager

SECTION A. Executive summary

AENOR has been contracted by Electrawinds Africa and Indian Ocean Islands (Pty) Ltd (hereinafter project participants), to undertake the validation for the renewal of the crediting period for the CDM project activity "Coega IDZ Windfarm" (hereinafter "the project"). The validation has been performed through a process of document review based on the updated PDD, initially submitted for validation and the subsequent revisions /2/9/, follow-up email and other communications with the stakeholders, resolution of outstanding issues and issuance of the validation report for RCP.

The project is a wind power plant with a total installed capacity of 1.8 MW, consisting of one wind turbine. The purpose of the project is to use the winds kinetic energy to generate an estimated net average of 5,500 MWh/yr electrical power and supplied to the national grid of South Africa to be sold to third parties by PowerX.

The project is located in the Coega Industrial Development Zone near Port Elizabeth in South Africa. The Coega Industrial Development Zone is 1km north of Joost Park and approximately 3km to the east of Motherwell. The geographic coordinates of the project activity are: -33.75399; 25.80985.

The full project construction stretches over several months, with a first turbine of 1.8 MW erected, tested and commissioned on 1st October 2010 /16/.

This project is considered a Type I small-scale project. The project displaces electricity generated by fossil fuel-fired power plants, avoiding GHG emissions estimated in 5,429 tCO₂e per year and 38,003 tCO₂e in the second crediting period.

According to paragraph 278 of the PCP, notification of renewal intention from project participants is no longer required, as long as the DOE submit a renewal request to the secretariat no earlier than 270 days prior to, but no later than one year after, the expiry of the first crediting period (31/07/2020), the project is valid for renewal and no penalty of "unclaimable period" would be required. Therefore, the project is eligible for renewal of crediting period.

The project activity was registered with reference number 8954 on 24/12/2012 as a CDM project with a renewable 7 years crediting period. Then, the first crediting period was from 01/08/2013 to 31/07/2020. Therefore; the second crediting period will be from 01/08/2020 to 31/07/2027.

During a verification process of the first crediting period, covering the period of 01/08/2013 to 29/02/2020, carried out by other DOE, a revised PDD version 16 has been submitted for approval join to the request for issuance of the verification on 02/07/2021.

Scope of the Validation

The scope of the validation is to assess all aspects described in the PS related to the purpose of renewal of the crediting period project relating to the baseline, estimated emissions reductions and the monitoring plan using an approved baseline and monitoring methodology.

The objective of the validation process is to have an independent, third party assessment of the proposed project activity against the applicable CDM requirements. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country issues and criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria.

All documents reviewed as part of the scope of the activity is detailed in the appendix 3. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. AENOR, based on the Specific Instruction for the Validation, Verification and Certification of CDM project activities (IE-DTC-039) /8/, has used a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The validation is not meant to provide any consultancy services to the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the PDD.

Validation Process

The project validation assessment for renewal of crediting period aims to be a risk-based approach and is based on the methodology developed in the CDM Validation and Verification Standard, an initiative of Designated and Applicant Entities, which aims to harmonise the approach and quality of all such assessments.

The validation for the renewal of the crediting period began in 17/05/2021 when the PP provided the initial version of the updated PDD /2/, and was concluded in July 2021, with the submission of the final validation report for RCP. The validation was performed in the manner of an audit, where, a desk review of the updated PDD and supporting documentation were undertaken against the latest version of the approved methodology and CDM and other relevant criteria applying to the project.

As a final step of the validation, the validation report for RCP and the protocol have to undergo internal quality control by means of a technical review following the procedures of AENOR. The technical reviewer is a competent person from AENOR, independent of the team that carried out the validation of the project activity.

The initial version of the updated PDD submitted by the PP was reviewed against the approved methodology and against CDM and other relevant criteria. Additional background documents related to the project design, rules and regulations issued by the government and baseline were also validated.

The project participant was requested to address all validation findings and finally provided the validation team with sufficient evidence to determine that the applicable CDM requirements have been met. The project participant modified the initial version of the updated PDD to resolve the validation team concerns and resubmitted a final version of the updated PDD /9/. AENOR has prepared this report based on the final version of the updated PDD /9/.

All findings (Corrective Action Requests (CAR) and/or Clarification Actions (CL)) have been checked by the validation team and have been adequately resolved.

All the validation findings are summarized in section C.5 below and detailed in Appendix 4.

The ex-ante emission factor of the national grid of South Africa used to estimate the emissions reductions is consistent with the emission factor provided by the ASB0040-2018 Standardized baseline /7/ and the ex-ante estimates of emissions reductions have been calculated correctly on the basis of the approved methodology ACM0002 /3/.

In AENOR's opinion, the GHG emissions reductions of the annual average over the crediting period and the total emissions reductions for the crediting period from 01/08/2020 to 31/07/2027, were calculated correctly and amount 38,003 tCO₂e.

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/document review	On-site inspection	Interview(s)	Validation findings
1.	Team Leader	IR	Arribas Alonso	Luis Javier	AENOR	Yes	No	Yes	Yes
2.	Team leader under supervision	IR	Arroyo Bovea	Marina	AENOR	Yes	No	Yes	Yes

B.2. Technical reviewer and approver of the validation report for RCP

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	Llorente Perez	Elena	AENOR
2.	Approver	IR	Fuentes Perez	Jose Luis	AENOR

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

The following documents were reviewed as part of the scope of the activity:

- The initial version of the updated PDD /2/, including baseline study and Monitoring Plan.
- Approved Methodology: ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources - Version 20.0 /3/
- Decision 3/CMP.1 and relevant decisions and guidelines from the EB
- CDM Validation and Verification Standard for project activities, version 02.0 /4/
- CDM project cycle procedure for project activities version 02.0 /5/
- CDM project standard for project activities version 02.0 /1/
- Tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” version 03.0.1 /6/.
- ASB0040-2018 Standardized baseline: Grid emission factor for Southern African Power Pool, version 1 /7/
- Revised PDD version 16 /11/
- Coega Wind RCP ex-ante ERs v1.xlsx
- Associated documentation (EF calculation, ER calculation, etc.)

A complete list of all documents reviewed is attached in appendix 3 of this report

The Project Design Document submitted by the PP was reviewed against the approved methodology and against CDM and other relevant criteria. Additional background documents related to the project design, rules and regulations issued by the government and baseline were also validated.

To address the findings (corrective actions and/or clarification requests) that arose from the desk review, the consultants revised the initial project design document submitted and developed the final version of the updated PDD.

C.2. On-site inspection

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

According to the paragraph 30 of the VVS, the on site visit was not made because it was not mandatory if the estimated annual average of greenhouse gas (GHG) emission reductions of the project activity is not more than 100,000 t CO₂ eq, and the emissions reductions of the PA estimated are 5,429 tCO₂e per year.

Moreover, due to COVID-19 pandemic and as per the three months allowance granted (from 23 March to 23 June 2020), extended period of 24 June to 31 December 2020 initially, and at 110th EB meeting, the EB agreed to further extend the period in which DOEs may apply alternative

measures of validation/verification to mandatory on-site inspections until 31 December 2021 /19/ to deviate from the requirements in paragraph 30 of the VVS version 2.0, no on-site inspection was conducted as part of this validation assessment.

In order to verify information and compliance with applicable requirements and to ensure the completeness and credibility of the audit, this rely on remote interviews with project participants, persons responsible for data collection, photographic evidence, etc.

Duration of on-site inspection: DD/MM/YYYY to DD/MM/YYYY				
No.	Activity performed on-site	Site location	Date	Team member
1.	N/A	N/A	N/A	N/A

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Tuchten	Olivia	Consultant	Different dates in June and July	<ul style="list-style-type: none"> - Basic information, technology of the project, etc.; - Monitor Data: meter readings, control and maintenance, QA&QC systems - Status of the project activity and any modifications with respect to the revised PDD. - Applicability to the latest methodology. - National and local policies and changes - Baseline of the project and its updates - The lifetime of the project activity - Emission Factors and their updates - Monitoring plan 	Luis Javier Arribas Alonso Marina Arroyo Bovea

C.4. Sampling approach

Not applicable.

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

Area of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form	---	---	---
Application and selection of methodologies and standardized baselines	---	---	---
Validity of original baseline or its update	---	---	---
Estimated emission reductions or net anthropogenic removals	---	---	---
Validity of monitoring plan	CL 1 CL 2	---	---
Crediting period	---	---	---
Project participants	---	---	---
Post-registration changes	---	---	---
Others (please specify)	---	---	---
Total	2	---	---

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

Means of validation	<p>The assessment team has checked all sections of the updated PDD and confirms that the valid version of the applicable PDD form listed in UNFCCC website have been applied.</p> <p>The assessment team also checked the information transferred to the final version of the updated PDD against the revised PDD, submitted for approval join to the request for issuance of the verification covering the period of 01/08/2013 to 29/02/2020 /11/, to confirm that the information transferred is materially the same.</p>
Findings	No finding was raised regarding this issue.
Conclusion	<p>According to paragraph 412 of VVS for project activities version 02.0, AENOR validation team confirms that:</p> <ul style="list-style-type: none"> The final version of the updated PDD complies with the applicable PDD form with version 11.0 and instructions therein for filling out the PDD /10/. Information transferred to the final version of the updated PDD form is materially the same as that in the revised PDD, submitted for approval join to the request for issuance of the verification covering the period of 01/08/2013 to 29/02/2020, except for the relevant sections of the PDD updated in accordance with the relevant requirements in the PS (sections of the PDD of the project activity relating to the baseline, estimated GHG emission reductions or net anthropogenic GHG removals, the monitoring plan and the crediting period using a baseline and monitoring methodology). The methodology and the standardized baseline and the other methodological regulatory documents have been applied in accordance with the applicable requirements 279 y 281(a)(ii) in the “CDM project standard for project activities”;

	<ul style="list-style-type: none"> The baseline, the estimated GHG emission reductions and the monitoring plan in the final version of the updated PDD comply with the applicable requirements in the “CDM project standard for project activities”, and the valid version of the methodology and the standardized baseline and the other methodological regulatory documents that are applied in the updated PDD; The crediting period of the project activity commences on 01/08/2020, the day immediately after the expiration of the current crediting period on 31/07/2020; The names of the project participants in the final version of the updated PDD are consistent with the names of the project participants in the latest version of the MoC statement
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D.2. Application and selection of methodologies and standardized baselines

Means of validation	<p>The assessment team has checked whether the selected baseline and monitoring methodology applied is applicable to the project activity. This assessment was based on a review of the updated PDD for the 2nd crediting period, associated documentation, previous validation and remote interviews.</p> <p>At the time of registration, the PP used the approved consolidated baseline and monitoring methodology ACM0002 version 12.3.0 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”.</p> <p>The final version of the updated PDD for the 2nd crediting period applies a valid version of the same methodology, that is ACM0002 version 20.0 “Large-scale Consolidated Methodology Grid-connected electricity generation from renewable sources”. The main changes for the updated version include expanding the applicability of the methodology, more definitions, clarifications, references, etc.</p> <p>The assessment of the relevant information contained in the final version of the updated PDD against each applicability condition is described below:</p>	
	Applicability conditions ACM0002 version 20.0 Project case	DOE Assessment
	<p>1. This methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <p>(a) Install a Greenfield power plant;</p> <p>(b) Involve a capacity addition to (an) existing plant(s);</p> <p>(c) Involve a retrofit of (an) existing operating plants/units;</p> <p>(d) Involve a rehabilitation of (an) existing plant(s)/unit(s);</p> <p>(e) Involve a replacement of (an) existing plant(s)/unit(s).</p>	<p>According to the revised PDD, the proposed project activity involves the installation of a Greenfield grid-connected renewable power generation project: wind power plant.</p> <p>Hence, project complies with this condition and methodology is applicable.</p>
	<p>2. The methodology is applicable under the following conditions:</p> <p>(a) The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power</p>	<p>(a) According to the revised PDD, the project activity includes a wind power plant/unit. Hence, project complies with this condition and methodology is applicable.</p> <p>(b) Not applicable. According to the revised PDD, the proposed project</p>

	<p>plant/unit or tidal power plant/unit;</p> <p>(b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity</p>	<p>activity involves the installation of a Greenfield grid-connected renewable power generation project: wind power plant. Therefore, It is not a capacity addition, retrofit or replacement of an existing power plant.</p> <p>Hence, project complies with this condition and methodology is applicable.</p>
	<p>In case of hydro power plants, one of the following conditions shall apply:</p> <p>(a) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or</p> <p>(b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using equation (7), is greater than 4 W/m²; or</p> <p>(c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (7), is greater than 4 W/m²; or</p> <p>(d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (7), is lower than or equal to 4 W/m², all of the following conditions shall apply:</p> <p>(i) The power density calculated using the total installed capacity of the integrated project, as per equation (8), is greater than 4 W/m²;</p> <p>(ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity;</p> <p>(iii) Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be:</p> <p>a. Lower than or equal to 15 MW;</p>	<p>No applicable. The project activity is not a hydro power plant, it is a wind power plant.</p> <p>Hence, project complies with this condition and methodology is applicable.</p>

	and	
	b. Less than 10 per cent of the total installed capacity of integrated hydro power project.	
	<p>4. In the case of integrated hydro power projects, project proponent shall:</p> <p>(a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or</p> <p>(b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum of five years prior to the implementation of the CDM project activity.</p>	<p>Not applicable.</p> <p>This project doesn't integrate different hydro power project.</p> <p>Hence, project complies with this condition and methodology is applicable.</p>
	<p>5. The methodology is not applicable to:</p> <p>(a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site;</p> <p>(b) Biomass fired power plants/units.</p>	<p>Not Applicable.</p> <p>The project activity doesn't involve the use of fossil fuels or Biomass fired.</p>
	In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	Not Applicable. the project is a new Greenfield renewable plant
	In addition, the applicability	The project activity meets the

	conditions included in the tools referred in the methodology.	applicability conditions included in the tools referred in the methodology. Hence, project complies with this condition and methodology is applicable.
	Applicability conditions ASB0040-2018 Project case	DOE Assessment
	As per paragraph 3 of ASB0040-2018: Clean development mechanism (CDM) project activities and programmes of activities (hereinafter referred as project activities) can apply this standardized baseline under the following conditions: (a) The project activity is implemented in any one of following countries, which are the SAPP member countries, and is connected to the SAPP; (i) Republic of Botswana; (ii) Democratic Republic of Congo; (iii) Kingdom of Lesotho; (iv) Republic of Mozambique; (v) Republic of Namibia; (vi) Republic of South Africa; (vii) Kingdom of Swaziland; (viii) Republic of Zambia, and (ix) Republic of Zimbabwe. (b) The CDM approved methodology that is applied to the project activity requires the determination of CO2 emission factor(s) through the application of the grid tool; (c) The project activity uses the ex-ante options for both the operating margin and build margin grid emissions factors, as described in the grid tool, and therefore no monitoring or recalculation of the emission factor during the crediting period is required.	The project complies with these criteria: (a) The project activity is located in South Africa. (b) The project activity requires the determination of CO2 emission factor(s) through the application of the grid tool. (c) The project activity uses the ex-ante options for both the operating margin and build margin grid emissions factors, as described in the grid tool, and therefore no monitoring or recalculation of the emission factor during the crediting period is required.
	As per paragraph 4 of ASB0040-2018: The latest approved and valid values of this standardized baseline are the only values of the CO2 emission factor(s) that shall be applied for the project electricity system in the SAPP member countries listed under sub-para 3(a) above.	The project complies with this criterion. The valid values of ASB0040 are the only values of the CO2 emission factor that are applied for the project electricity system in the listed SAPP member countries.
Findings	No findings raised in this section.	
Conclusion	In accordance to paragraphs 404 (b) of VVS, the validation team has confirmed, after performing the desk review, that the baseline and monitoring methodology and the approved standardized baseline have been applied correctly as well as its	

	associated tools and guidelines. In particular the validation team has reviewed the final version of the updated PDD and associated documents (calculation spreadsheets and evidence provided by the PP), and previous PDD and previous validation report /12/ and information received in the different communications to assess the relevant information contained in the final version of the updated PDD for each applicability condition listed in the selected methodology.
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D.3. Validity of original baseline or its update

Means of validation	<p>According to the paragraph 282 of the PS, AENOR checked the updated PDD to assess the validity of the original/current baseline for the proposed CDM project activity against the applicable requirements of methodological tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" version 03.0.1.</p> <p>Step 1.-Assess the validity of the current baseline for the next crediting period</p> <p>The validity of the baseline has been assessed as per the sub-steps 1.1 – 1.4 of the methodological tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" version 3.0.1 /6/. The assessment was performed as follows:</p> <p>Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies</p> <p>The project activity uses the mandatory standardized baseline: ASB0040-2018 version 1. Therefore, according to the paragraph 285 of the PS, an assessment as per paragraph 284 of the PS, is not required, and the project participants do not need to assess and incorporate the impact of national and/or sectoral policies and circumstances, existing at the time of requesting renewal of crediting period, on the current baseline GHG emissions.</p> <p>Step 1.2: Assess the impact of circumstances</p> <p>The audit team could assess that for the renewal of the crediting period, the standardized baseline ASB0040-2018 version 1, whose selection is mandatory, is applicable to the project activity and to the methodology applied in accordance with paragraph 279 of the PS, although it was not applied in the revised PDD because it entered into force on 07/10/2018, after register of the PA.</p> <p>This change supposes that the conditions used to determine the baseline emissions in the previous crediting period are not longer valid.</p> <p>Step 1.3: Assess whether the continuation of the use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.</p> <p>The most likely scenario is the continuation of the current practice. In the absence of the project, the baseline scenario would be that the electricity would have been supplied by the grid, and it will not request an investment by the project proponent or third party. So, this step is not applicable.</p> <p>Step 1.4: Assessment of the validity of the data and parameters</p> <p>The emission factor have been updated by the project participants for the second crediting period of the project activity applying the mandatory grid emission factor of 0.9871 tCO₂/MWh prescribed by ASB0040-2018, version 1.</p> <p>Step 2.-Update the current baseline and the data and parameters</p> <p>Step 2.1: Update the current baseline</p> <p>As per the requirement of the sub-step, the current baseline emissions for the second crediting period have been updated applying the mandatory grid emission factor of 0.9871 tCO₂/MWh prescribed by ASB0040-2018, version 1.</p> <p>Step 2.2: Update the data and parameters</p> <p>The emission factor have been updated by the project participants for the second</p>
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	crediting period of the project activity applying the mandatory grid emission factor of 0.9871 tCO ₂ /MWh prescribed by ASB0040-2018, version 1. Validity of original baseline and its update was therefore confirmed
Findings	No findings raised in this section.
Conclusion	According to paragraph 404 and 405 of the VVS for project activities version 02.0, AENOR validation team confirms that the baseline has been updated and the GHG emission reductions estimated correctly in accordance with the approved methodology and the approved standardized baseline ASB0040-2018 version 1 and other methodological regulatory documents.

D.4. Estimated emission reductions or net anthropogenic removals

Means of validation	<p>AENOR checked the estimated GHG emission reductions in the updated PDD and ER calculation spreadsheet /13/ against the applicable requirements in the Project Standard, methodology ACM0002, standardized baseline and applicable methodological tools.</p> <p>The validation team of AENOR checked that the estimated GHG emission reductions in the final version of the updated PDD and ER calculation spreadsheet comply with the applicable requirements in the Project standard, and the valid version of the methodology, standardized baseline and tools that are applicable to the CDM project activity as follows:</p> <p><u>Determination of the baseline emissions (BE_y)</u></p> <p>The baseline emissions are calculated as follows:</p> $BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ <p>Where:</p> <p>BE_y = Baseline emissions in year y (tCO₂/yr);</p> <p>$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr);</p> <p>$EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using ASB0040:2018, version 01.0 (tCO₂/MWh).</p> $BE_y = 5,500 \times 0.9871$ <p>$BE_y = 5,429 \text{ tCO}_2/\text{year}$</p> <p><u>Calculation of EG_{PJ,y}</u></p> <p>The project activity is the installation of a Greenfield renewable power plant, then:</p> $EG_{PJ,y} = EG_{facility,y}$ <p>Where:</p> <p>$EG_{PJ,y}$ = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr);</p> <p>$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr).</p> <p><u>Determine the emission factor for the grid</u></p> <p>This project applies the latest version of the mandatory Standardized Baseline (ASB0040-2018 version 01.0). The Standardized Baseline is applied in accordance with paragraph 50 of the PS and paragraph 4 of ASB0040-2018.</p> <p>As per the Standardized Baseline, the combined margin CO₂ emission factor (EF_{grid,CM,y}) for interconnected electricity system of the Southern African Power</p>
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	<p>Pool is used. The applicable value applied is 0.9871 tCO₂/MWh which is the value that may be applied in the second crediting period of this project, and applies to all wind and solar power generation project activities.</p> <p>The baseline emission factor EF shall be fixed for the crediting period</p> <p>EF_{CM} = 0.9871 tCO_{2e}/MWh</p> <p><u>Determination of the project activity emissions (PE_y)</u></p> <p>According to the methodology, for wind power plant, there are no project emissions according to the methodology.</p> <p>PE_y = 0</p> <p><u>Leakage</u></p> <p>According to ACM0002 version 20.0, no leakage needs to be considered for the proposed project.</p> <p><u>Emission Reduction (ER_y)</u></p> <p>The emission reduction (ER_y) of the project activity are calculated as the difference between the baseline emissions (BE_y), project emissions (PE_y) and emissions due to leakage (LE_y).</p> <p>ER_y = BE_y - PE_y - LE_y</p> <p>ER_y = 5,429 tCO_{2e}/year</p>
Findings	No finding was raised regarding this issue.
Conclusion	<p>In accordance with paragraph 113 of the VVS for project activities version 02.0, , AENOR validation team confirms that:</p> <ul style="list-style-type: none"> • All assumptions and data used by the project participants are listed in the final version of the updated PDD and/or supporting documents, including their references and sources; • All documentation used by the project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the final version of the updated PDD; • All values used in the final version of the updated PDD are considered reasonable in the context of the proposed CDM project activity; • The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, and leakage emissions; • All estimates of the baseline, project and leakage emissions can be replicated using the data and parameter values provided in the final version of the updated PDD. <p>IN AENOR's opinion, the PP has documented in the final version of the updated PDD and the spreadsheets, the calculation, data, formulae and information of the estimated GHG emission reductions in accordance with the requirements of the latest approved version of the methodology, standardized baseline and tools applied to the determination of the emission reductions.</p> <p>Furthermore, AENOR has reproduced the calculation in a clear and transparent manner to obtain the same results, which confirms that the baseline methodology has been correctly applied.</p>

D.5. Validity of monitoring plan

Means of validation	<p>The audit team checked that the monitoring plan in the updated PDD complies with the applicable requirements in the Project standard, and the valid version of the methodology ACM0002, standardized baseline ASB0040-2018 and tools that are applicable to the registered CDM project activity.</p> <p>Based on the document review and follow-up actions, the validation team confirms</p>
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	that the parameter required to be monitored for the project will be:	
	Data/Parameter	EG _{facility,y}
	Data unit	MWh/year
	Description	Quantity of electricity generated and supplied by the project power plant to the grid in year y
	Value applied	5,500
	Measurement methods and procedures	<p>Electricity will be measured continuously by the installed electricity metering system and monthly aggregated /17/18/. This data will be archived electronically as per internal procedures, for 2 years after the end of the last crediting period.</p> <p>The primary electricity meter measures incoming and outgoing electricity. This primary meter is owned by the Nelson Mandela Bay Municipality and recorded on the Municipality's SILK system which is used for billing purposes across the metro.</p> <p>The calibration frequency is as per the manufacturer specifications. In the event that there are no manufacturer specifications, the calibration frequency stipulated in the national standard, SANS 474 /15/ is applied.</p> <p>The accuracy of the electricity meters must be aligned with the national standard, SANS 474, for example, Class B</p>
	Monitoring frequency	Continuous measurements and aggregated on a monthly basis.
	QA/QC procedures	Cross check measurement results with records for sold electricity to ensure consistency.
	Purpose of data	Calculation of baseline emissions
Additional comment	N/A	
Findings	<p>The clarifications CL 1 and CL 2 were raised and closed. It was raised to request evidences of different requirements of the project.</p> <p>For details refer to the respective tables in Appendix 4, which summarizes the findings found during the validation process and how they were closed.</p>	
Conclusion	<p>In AENOR's opinion, PPs have documented, in the monitoring plan of the final version of the updated PDD, all requirements established by the latest approved version of the methodology, standardized baseline and tools applied to determine the emissions reductions of the project activity.</p> <p>All parameters to be monitored applicable to the proposed project activity, required by the applicable methodology, standardized baseline and associated tools have been quoted in the final version of the updated PDD. In addition, the quality control and quality assurance to apply for monitoring activities, including the metering equipment, calibration requirements have also been detailed.</p> <p>Authority and responsibilities are well defined, and Quality Assurance and Quality Control procedures are managed in order to reduce the uncertainties of the emissions reduction monitored.</p> <p>Provisions of calibration frequencies of all the equipment involved in the monitoring are included in the final version of the updated PDD and are deemed as</p>	

	<p>appropriate by the DOE team because they are defined according to CDM rules, manufacturer specifications /17/ or the national standard.</p> <p>All necessary changes have been appropriately reflected in the final version of the updated PDD, the monitoring plan in the final version of the updated PDD is in compliance with the applied monitoring methodology, and the monitoring arrangements described in the final version of the updated PDD can be implemented and are feasible within the project design</p>
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D.6. Crediting period

Means of validation	<p>The assessment team checked whether the starting date and length of the 2nd crediting period, as stated in the final version of the updated PDD meets all applicable requirements for renewal of crediting period.</p> <p>The crediting period for this project activity is 21 years renewable every 7 years.</p> <p>The 1st crediting period of the project activity was from 01/08/2013 to 31/07/2020, whereas the start date of the second crediting period commenced the day immediately after the expiration of the 1st crediting period, on 01/08/2020 to 31/07/2027.</p>
Findings	No CARs/CLs/FARs raised in this section.
Conclusion	According to paragraph 412 of VVS for project activities version 02.0, AENOR validation team confirms that the correct crediting period has been applied in the final version of the updated PDD.

D.7. Project participants

Means of validation	AENOR checked the names of the project participants included in the final version of the updated PDD against the names included in the latest version of the completed Modalities of Communication (MoC) form for the project activity as available in the UNFCCC website.
Findings	No CARs/CLs/FARs raised in this section.
Conclusion	According to paragraph 412 of VVS for project activities version 02.0, AENOR validation team confirms that the information of the PPs has been correctly indicated in the final version of the updated PDD.

D.8. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents ¹	N	N/A	N/A
Corrections	N	N/A	N/A
Change to the start date of the crediting period	N	N/A	N/A
Inclusion of a monitoring plan	N	N/A	N/A
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other	N	N/A	N/A

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).

methodological regulatory documents			
Changes to the project design	N	N/A	N/A
Changes specific to afforestation and reforestation project activities	N	N/A	N/A

SECTION E. Internal quality control

Following the completion of the assessment process by the validation team, all documentation undergoes an internal quality control through a technical review before submission to the CDM-EB. The Technical reviewer is a qualified member of AENOR, independent from the team that carried out the validation of the project activity. The technical reviewer or the team appointed for the technical review are qualified in the technical area(s) and sectoral scope(s) of the project activity.

SECTION F. Validation opinion

AENOR has performed the validation of the renewal of the crediting period of the project “Coega IDZ Windfarm”. The validation was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following phases: i) a desk review of the updated PDD, spreadsheets and complementary information; ii) the resolution of outstanding issues and the issuance of the final validation report and opinion. In the course of the validation process 2 clarification were raised, all have been successfully closed.

The review of the project design documentation has provided to AENOR enough evidence to determine the validity of the original baseline scenario and the update of the baseline. The project correctly applies the baseline and monitoring methodology ACM0002: Large-scale Consolidated Methodology Grid-connected electricity generation from renewable sources” version 20.0 and ASB0040-2018 Standardized baseline: “Grid emission factor for Southern African Power Pool” version 1.

The calculation of the project emission reductions is carried out in a transparent and conservative manner, so the project activity is likely to achieve the average estimated amount of emission reductions of 5,429 tCO_{2e} per year over the 2nd renewable crediting period.

The conclusions can be summarised in detail as follows:

- The final version of the updated PDD has been completed using the valid version of the applicable PDD form, following the instructions therein. Also, the information transferred to the later version of the updated PDD is materially the same as the revised PDD (submitted for approval join to the request for issuance of the verification covering the period of 01/08/2013 to 29/02/2020).
- The emission reduction has been carried out in a transparent and conservative manner, following the approved methodology ACM0002: “Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources”, Version 20.0, and ASB0040-2018 Standardized baseline: “Grid emission factor for Southern African Power Pool”, version 1.
- The final version of the updated PDD is in line with all relevant host country criteria and with all relevant UNFCCC requirements for CDM.
- The names of the project participants in the final version of the updated PDD are consistent with the names of the project participants in the latest version of the MoC statement;
- The monitoring plan is transparent and adequate.

In AENOR’s opinion, the project meets all relevant UNFCCC requirements and the relevant host country criteria for the renewal of the crediting period. Hence, AENOR requests the renewal of the crediting period of the project.

The validation has been performed using a risk based approach, as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle.

Hence, AENOR cannot be held liable by any party for decisions made or not made based on the validation opinion, which goes beyond the purpose.

Madrid, 27/07/2021



Luis Javier Arribas Alonso
Team leader



José Luis Fuentes
Authorized person

Appendix 1. Abbreviations

Abbreviations	Full texts
ACM0002	Large-scale Consolidated Methodology: Grid-connected electricity generation from renewable sources - Version 20.0
AENOR	AENOR International S.A.U.
ASB0040-2018	Standardized baseline: Grid emission factor for Southern African Power Pool, version 1
BM	Build margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM-EB	CDM Executive Board
CER	Certified Emission Reductions
CM	Combined margin
CL	Clarification Action
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DOE	Designated operational entity
DR	Desk review
EF	Emission factor
ER	Emission reduction
FAR	Forward action request
GHG	Greenhouse Gasses
GSC	Global stakeholder consultation
GWh	Electrical Giga Watt hour
IPPC	Intergovernmental Panel on Climate Change
IR	Internal review
kW	Kilowatt
MP	Monitoring plan
MW	Megawatt

Abbreviations	Full texts
NA	Not applicable
OM	Operating margin
PCP	CDM project cycle procedure for project activities version 02.0
PDD	Project Design Document
PP	Project participant
PRC	Post registration changes
PS	CDM project standard for project activities version 02.0
RCP	Renewal of crediting period
tCO _{2e}	Carbon dioxide equivalent tonnes
UNFCCC	United Nations Framework Convention on Climate Change
VVS	CDM validation and verification standard for project activities version 02.0

Appendix 2. Competence of team members and technical reviewers

CERTIFICATE OF QUALIFICATION

Subject: Validation and technical review team for “Coega IDZ Windfarm”

Madrid, 27/07/2021

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and with regard to the validation process of the above mentioned project activity:

Name: Luis Javier Arribas Alonso

CDM team leader: YES

CDM Tehnical reviewer: N.A.

CDM validator: N.A.

CDM verifier: N.A.

External technical expert: N.A.

Technical areas related with the project activity: 1.2. Renewables

A handwritten signature in blue ink, consisting of a stylized 'J' and 'F' intertwined.

Jose Luis Fuentes
Climate Change Manager

CERTIFICATE OF QUALIFICATION

Subject: Validation and technical review team for “Coega IDZ Windfarm”

Madrid, 27/07/2021

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and with regard to the validation process of the above mentioned project activity:

Name: Marina Arroyo Bovea

CDM team leader: NO

CDM Tehnical reviewer: N.A.

CDM validator: YES

CDM verifier: N.A.

External technical expert: N.A.

Technical areas related with the project activity: 1.2. Renewables



José Luis Fuentes
Climate Change Manager

CERTIFICATE OF QUALIFICATION

Subject: Validation and technical review team for “Coega IDZ Windfarm”

Madrid, 27/07/2021

Hereby I confirm the following records of qualification, according with AENOR internal instruction “Validation, Verification and Certification of Clean Development Mechanism (CDM) project activities” IE-DTC-039, and with regard to the validation process of the above mentioned project activity:

Name: Elena Llorente Pérez

CDM team leader: N.A.

CDM Tehnical reviewer: YES

CDM validator: N.A.

CDM verifier: N.A.

External technical expert: N.A.

Technical areas related with the project activity: 1.2. Renewables



José Luis Fuentes
Climate Change Manager

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	UNFCCC	CDM project standard for project activities version 2.0	https://cdm.unfccc.int/Reference/Standards/index.html	UNFCCC
2	PPs	Initial version of the updated PDD	Version 17	PPs
3	UNFCCC	ACM0002: Large-scale Consolidated Methodology "Grid-connected electricity generation from renewable source" version 20.0	https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG	UNFCCC
4	UNFCCC	CDM Validation and Verification Standard for project activities version 2.0	https://cdm.unfccc.int/Reference/Standards/index.html	UNFCCC
5	UNFCCC	CDM Project Cycle Procedure for project activities version 2.0	https://cdm.unfccc.int/Reference/Procedures/index.html	UNFCCC
6	UNFCCC	Methodological Tool: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period version 03.0.1	https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-11-v3.0.1.pdf	UNFCCC
7	UNFCCC	ASB0040-2018 Standardized baseline: Grid emission factor for Southern African Power Pool, version 1	https://cdm.unfccc.int/methodologies/standard_base/2015/sb131.html	UNFCCC
8	AENOR	Specific Instruction for the Validation, verification and certification of clean development mechanism (CDM) project activities(IE/DTC/0039)		AENOR
9	PPs	Final version of the updated PDD	version 18	PPs
10	UNFCCC	CDM-PDD form version 11.0	https://cdm.unfccc.int/Reference/PDDs_Forms/index.html	UNFCCC
11	PPs	Revised PDD	version 16 (25/06/2021)	UNFCCC
12	PP	Validation Report for PRC	version 2 (29/06/2021)	UNFCCC
13	PPs	Spreadsheet "2021-06-03 Coega Wind RCP ex-ante ERs"	Version 1	PPs
14	PPs	Verification report	Version 3	PPs
15	PPs	National standard, SANS 474:2009	Edition 1.1	PPs
16	PPs	Vestas taking over certificate	01/10/2010	PPs
17	ITRON	Itron ACE6000 meter tech specs_main meter		PPs
18	ITRON	Itron meter (Meter no. 63054975)_factory calibration_2013-09-11.pdf	11/09/2013	PPs

No.	Author	Title	References to the document	Provider
19	UNFCCC	Allowance for relax mandatory site visits by DOEs until 31 December 2021 due to COVID-19 pandemic		UNFCCC
20	AENOR and PP	Validation contract		AENOR
21	VESTAS	General Specification V90–1.8/2.0 MW 50 Hz VCS	19/11/2010	PPs

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

Table 1. CL from this validation

CL ID	01	Section no.	D.5	Date:	07/07/2021
Description of CL					
The project proponent shall provide the audit team the following evidence:					
<ul style="list-style-type: none"> • Pictures and videos of the wind farm, including the main equipment involved in the generation of electrical energy, showing their nameplates, serial number and other technical data. • Primary and secondary electricity meter and controllers. 					
Project participant response					Date: 08/07/2021
The pictures and photos have been provided as requested					
Documentation provided by project participant					
See files in sub-folder titled 'Photos and videos'					
DOE assessment					Date: 12/07/2021
Evidence has been provided and deemed correct. Therefore CL 1 is closed.					

CL ID	02	Section no.	D.5	Date:	07/07/2021
Description of CL					
According to the updated PDD, calibration of the meter will be performed every 10 years in accordance with the SANS 147 standard.					
However, according to the registered PDD, calibration will be performed according to manufacturer's specifications.					
Clarify the change of the requirements and provide the SANS 147 standard.					
Project participant response					Date: 08/07/2021
The updated PDD has been revised so that is aligned with the registered PDD.					
Documentation provided by project participant					
Coega Wind Farm RCP PDD v18					
DOE assessment					Date: 12/07/2021
Clarification has been provided and deemed correct. Therefore CL 2 is closed.					

Table 2. CAR from this validation

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

Table 3. FAR from this validation

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

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) and version 02.0 of the “CDM project cycle procedure for project activities” (CDM-EB93-A06-PROC); Make editorial improvements.
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Renewal of crediting period Keywords: crediting period, project activities, validation report		