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	Wind Energy Project in Saundatti, Karnataka UNFCCC ref.No- 6794
Number and duration of the next crediting period	02 24/09/2019 to 23/09/2026
Version number of the validation report	02
Completion date of the validation report	12/08/2020
Version number of PDD to which this report applies	06
Project participants	CLP Wind Farms (India) Private Limited
Host Party	India
Applied methodologies and standardized baselines	ACM0002 Version 20.0 "Grid-connected electricity generation from renewable sources" Selected standardized baseline: N/A
Mandatory sectoral scopes	Sectoral scope : 1- Energy industries (renewable - / non-renewable sources
Conditional sectoral scopes, if applicable	NA
Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next crediting period	146,536 tCO2e per annum
Name and UNFCCC reference number of the DOE	LGAI Technological Center, S.A. (Applus+ Certification) UNFCCC Ref. No.: E-0032
Name, position and signature of the approver of the validation report	Mr. Juan Sendín Caballero *Applus+ Certification Business Unit Managing Director* Signature: 

SECTION A. Executive summary

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LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by M/s CLP Wind Farms (India) Private Limited to perform a validation of renewal of crediting period of the "Wind Energy Project in Saundatti, Karnataka" (UNFCCC Ref. No. 6794), hereafter referred to as "the project activity").

The assessment was performed in accordance with the CDM VVS for PAs version 02.0 and the CDM PS for PAs version 02.0 including an assessment of:

- An impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant guidance from the Board with regard to renewal of the crediting period at the time of requesting renewal of crediting period;
- The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.

The main objective of validation of renewal of crediting period as provides an independent third party assessment of validity of the updated sections of the PDD of project that has opted for a renewal of the crediting period. The validation assessment of the baseline of project activity, estimated GHG emission reductions or net anthropogenic GHG removals, the monitoring plan and the crediting period using the valid version of the approved baseline and monitoring methodology. The assessment team has, based on the instructions in the VVS for PAs version 02.0 /2.1/ employed a risk-based and step-wise approach when conducting 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 consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design. The validation has been performed the identification whether the PP has updated sections of the PDD relating to the baseline, estimated GHG emission reductions or net anthropogenic GHG removals, the monitoring plan and the crediting period using the valid version(s) of the approved baseline and monitoring methodology.

Therefore, the validation report is based on the assessment of the project design document undertaken through project stakeholder consultations, application of standard auditing techniques. The validation process consisted of the following three phases:

1. Desk review of the project design and baseline and monitoring plan;
2. Follow-up interview with project stakeholders;
3. Resolution of outstanding issues and the issuance of the final validation report and opinion.

In the course of the validation, 02 Corrective Action Request (CAR) and 1 Clarification Request (CL) and No Forward Action Request (FAR), was raised in relation to all relevant CDM requirements. Until issuance of this version of validation report, the raised CAR and CL were successfully closed.

Based on the review of the revised PDD and additional background documents, the subsequent follow up interviews, together with the review of comments by Parties and Stakeholders, have provided, Applus+ Certification with sufficient evidence to confirm that the project has satisfied the stated criteria.

The validation covered all project components and issues that need to be validated for the renewal of crediting period as a CDM project. Applus+ Certification hereby confirms that the project correctly applied the

baseline and monitoring methodology ACM0002 (Version 20.0) /2.4/ and meets the relevant UNFCCC requirements for the renewal of the crediting period.

Applus+ Certification hereby requests the renewal of crediting period of the project. Provided that the project is implemented and maintained as designed, the project is expected to achieve annual average emission reduction of 146,536 tCO_2e within the 2nd crediting period (7years, 24/09/2019 - 23/09/2026).

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.	Lead Auditor/ Technical Expert	OR	Ahirwar	Vivek Kumar	GCEES	Y	NA	Y	Y

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	Shen	Simon	Applus+ Certification
2.	Approver	IR	Sendín	Juan	Applus+ Certification

SECTION C. Means of validation

C.1. Desk/document review

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The Project Design Document submitted by the Project Participant was reviewed against the approved methodology and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of documents reviewed or referenced is available in Appendix 3 of this report.

C.2. On-site inspection

Due to the current situation with the global COVID-19 pandemic scenario and inter-state travel restrictions in India, an on-site inspection has not been performed by the assessment team. As per the communication received from CDM Executive Board on regarding the relaxation for mandatory site visits by DOEs for a period of three months (23/03/2020 to 23/06/2020) and further communication received on 24/06/2020 to extend the relaxation till 31/12/2020, due to COVID-19 pandemic, it is recommended that site visit should be postpone as a result of the COVID-19 pandemic.

The DoE has determined that the physical site visit neither be postpone nor conducted in the current circumstances due to COVID-19 pandemic. As recommended by CDM EB/2.8/ via emails dated 20/03/2020 and 24/06/2020, justification for the approach being followed by the DoE is provided below:

1. The deadline for completion of validation of renewal of crediting period for the project activity is 23/09/2020, hence it is likely to breach the timeline site visit postponed for indefinite period and the crediting may not be renewed (ref: paragraph 278 PCP for PAs v 02.0).

2. The project activity is located in Karnataka state in India and at least 3 days stay would be required to complete the site visit . The state government has issued directives to the business passengers arriving from the other states, as per Govt. guidelines if business passengers plan to stay in Karnataka for 2-7 days, COVID-19 testing must be conducted. A swab will be drawn on arrival and the person must stay in institutional quarantine till the results are received. They may proceed with their business only if the test has a negative result.
   (Ref: https://www.karnataka.com/govt/traveling-to-karnataka-from-other-states/)

Considering health and safety a top priority, it is justified to not conduct the physical site visit for RCP validation audit. Since the site visit cannot be postponed but is not conducted due to the COVID-19 pandemic, hence the DOE has used standard auditing techniques for validation as referred to in sections 7.1.3 and 9.1.3 of the VVS for PAs version 02.0.

The source documents/alternative means of validation referred by the assessment team to validate the particular aspect of RCP validation are as follows.

1. The project activity is registered under CDM and already undergone verification for for the first (24/09/2012 to 31/12/2012) and second monitoring period (01/01/2013 to 01/10/2016). As per the records available at project UNFCCC web page, CERs for both the monitoring period are successfully issued.

2. The assessment team has verified the issuance records/1.6/ and confirmed that the verifying DoE (ESPL) had conducted site visit for the verification of both the monitoring periods. The verification reports confirms that the site visit activities included a physical inspection of the project implementation and actual operations and a review of the monitoring system, data recording and archiving, QA/QC activities, and meter calibration frequency/responsibility. The ESPL verification team in section E.3 of the verification reports/1.6/, confirmed that the implementation and actual operation of project activity was in compliance with the registered PDD. Therefore, it was considered that project implementation would have not changed materially, since then.

3. In order to confirm the project implementation, the assessment team has verified the, latest JMRs/3.3/, commissioning certificates/3.1/ and power purchase agreement/3.2/ signed by the project proponent with state utility for the project activity and concluded that the capacity of project (including capacity of individual WTGs),lifetime, location, monitoring system, data recording and calibration responsibility is consistent with the same mentioned in the revised PDD/1.3/.

4. Telephonic interview of project participant representative is done and latest photographs/videos of project site is cheked by the assesmsnet team.

Duration of on-site inspection: NA				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	Not applicable	-	-	-
…	-	-	-	-

C.3. Interviews

The site visit for the project location is not conducted by the assessment team, however telephonic interview was conducted and the following stakeholders were interviewed.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Saha	Sandip	Depity Manager (CLP Wind Farms (India) Private Limited)	03/08/2020	Eligibility of project for RCP validation, Ownership of project activity Project implementation, applicability of methodology, calculation of EF, Monitoring and calibration procedure	Vivek Kumar Ahirwar

C.4. Sampling approach

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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	-	CAR #1	-
Estimated emission reductions or net anthropogenic removals		CAR #2	-
Validity of monitoring plan	-	-	-
Crediting period		CAR #2	-
Project participants	-	-	-
Post-registration changes	-	-	-
Others (please specify)	CL #1 (Missing documents)	-	-
Total	01	02	-

SECTION D. Validation findings

D.1. Compliance with PDD form

Means of validation	The project participants used a later version of the PDD form/2.5/ for the revised PDD than the version of the PDD form of the registered PDD. By means of checking updated PDD with the latest applicable and available PDD template form, version 11.0, the DOE can confirm that the information transferred to the later version of the PDD form is materially the same as that in the registered PDD besides those changes highlighted and assessed under this report.

Findings	No non-conformity was observed in this regard. Therefore, no finding was raised.
Conclusion	The updated PDD is in line with the latest applicable PDD from.

D.2. Application and selection of methodologies and standardized baselines

Means of validation	Through document review and telephonic interview, the assessment team reassessed the applicability of baseline, monitoring methodology and standardized baseline in the methodology based on the knowledge of the project from the initial validation, subsequent verifications and the confirmation from the PP. The project was originally registered based on methodology ACM0002. version 12.3.0. The updated PDD applies methodology ACM0002 version 20.0. This is appropriate because the methodology ACM0002 version 20.0 is of its latest approved version of methodology applied in the original PDD and is valid at the time of submission of the revised PDD for the renewal of the crediting period; hence the guidance provided under paragraph 279(a) of the PS for PAs is followed. Following tools referred to by the methodology are also applied: • Tool to calculate the emission factor for an electricity system – Version 07.0.0, EB100 annex 4/2.7/ • 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, EB 66 annex 47 /2.6/ The methodology and the applied tools are valid as of the finalization of the validation report. The title, reference as well as version number is correctly provided in revised PDD/1.3/ for the renewal of the crediting period. The applicability of the baseline and monitoring methodology is justified in the revised PDD for the renewal of the crediting period. All applicability conditions are completely and correctly included in the revised PDD and the same are demonstrated below : **Criteria-1.** This methodology is applicable to grid-connected renewable energy power generation project activities that: (a) Install a Greenfield power plant; (b) Involve a capacity addition to (an) existing plant(s); (c) Involve a retrofit of (an) existing operating plants/units; (d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) Involve a replacement of (an) existing plant(s)/unit(s). Validation assessment: - Project activity is Greenfield wind power project, supplying electricity to national grid. This is verified thorough the Power Purchase Agreement /3.2/ and commissioning certificate/3.1/. Thus the criterion (a) is fulfilled by the proposed project activity. **Criteria-2:** The methodology is applicable under the following conditions: (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 plant/unit or tidal power plant/unit; (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.

Validation assessment:

Project activity is generation of electricity through wind energy which is renewable energy power plant. Hence the project activity satisfies the criterion (a).

Criteria-3 and Criteria-4: (Paragraph 5 and 6 of ACM0002 V 20.0)

Both the criteria are relevant to hydro power projects. Since the proposed project activity is wind power plant, hence not applicable.

Criteria-5:

The methodology is not applicable to:

(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;

(b) Biomass fired power plants/units.

Validation assessment:

The project activity involves generation of electricity using wind energy. Thus the criterion is not applicable for the proposed project activity.

Criteria-6:

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."

Validation assessment:

The project activity does not involve any capacity additions, retrofits or replacements of an existing facility because it is a Greenfield wind power generation project activity; same has been confirmed from the commissioning certificates/3.1/ , CDM validation report and PPA /3.2/.

Thus the criterion is not applicable for the proposed project activity.

Thus, it can be concluded that the applied methodology ACM0002, version 20.0 is applicable to the project activity.

Tool to calculate the emission factor for an electricity system:
The revised PDD refers and correctly applies the latest version of tool to calculate the emission factor for an electricity system, version 07.0/2.7/.Also the PP has referred the CEA Baseline CO2 Emission Database version 15 dated December 2019 /3.5/ which was the latest available database at the time of PDD submission for RCP validation of the project activity. However the grid emission factor for second crediting period is calculated referring the CEA Baseline CO_2 Emission Database version 14 dated December 2018 /3.5/ (aviaable at the time siging the contract with DoE for RCP validation) because it results conservative estimation of baseline emissions.

The locations of windmills are in the state of Karnataka, in India. As per CEA

	Baseline CO2 Emission Database/3.5/, the state of Karnataka comes under the Indian regional electricity grid in India, the geographic and system boundaries of which are clearly identified; information on the characteristics of the grid is available. Thus, the tool is applicable for the project activity. **Tool for the demonstration and assessment of additionality** This tool is not required to be applied during validation of renewal crediting period. The assessment team has validated the documentation referred to in the PDD and verified the documentation content for verifying the justification of the applicability of the methodology and confirmed that the documentation referred to in the PDD is correctly quoted and interpreted. The assessment team has also crosschecked the information provided in the PDD with the documentation other than from the PDD based on the local and sectoral knowledge of the assessment team. Thus all the applicability conditions of the applied methodology are confirmed in line with paragraphs 68 of VVS for PAs version 02.0. Based on the above discussion, the validation team confirms that the proposed project activity meets all the applicability conditions and all other stipulations of the selected methodology ACM0002 Version 20.0.
Findings	No non-conformability was observed during assessment for validation of crediting period. Therefore, no finding was raised.
Conclusion	Applus+ Certification confirms that the project meets each of the applicability conditions of the methodology; it also meets all the other stipulations and limitations mentioned in the other sections of the applied methodology; the continued validity of the baseline is assessed and the emissions which would be resulted from the baseline scenario are updated at the start of the 2nd crediting period, as per the requirements of ACM0002, version 20.0. Therefore, CDM requirements stipulated under VVS for PAs Version 02.0 §§404(b) is satisfied completely.

D.3. Validity of original baseline or its update

Means of validation	In according to VVS for PAs version02.0§§404, The assessment team reviewed the updated PDD/1.3/, and evaluated whether project participants assess and incorporate the impact of national and/or sectoral policies and circumstances existing at the time of requesting renewal of the crediting period on the current baseline GHG emissions, without reassessing the baseline scenario. Since the data and parameters used for determining the original baseline that was determined ex ante (and not monitored during the crediting period) are no longer valid, hence the assessment team has verified, whether the PP updated such data and parameters in accordance with the step 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". Applus+ Certification confirms that there have been no changes in the relevant national and/or sectoral regulations on implementation of projects to generated electricity from wind energy and sell to southern grid(which is now a part of Integrated Indian grid) since the previous crediting period. On the other hand, the baseline scenario for installation of wind projects to generated electricity and sell to state/national grid is still valid according to methodology ACM0002, version 20.0 As demonstrated in the registered PDD, the baseline scenario for the Project is continuous operation of the existing power plants to meet electricity demand. As per ACM0002, version 20.0 §§ 22, "If the project activity is the installation of a

Greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in "TOOL07: Tool to calculate the emission factor for an electricity system".

The baseline for the project activity will remain the same as desecribed in the registered PDD.

In the absence of project activity, the same amount of electricity would otherwise have been generated by the operation of some grid connected fossil fuel based power plants or newly added generation sources into southern grid (Now part of Indian grid).

A verifiable description of the baseline scenario has been included in the final revised PDD.

The information presented in the PDD has been validated by an initial document review of all data. Further confirmation has been made based on the telephonic interviews and a review of information from similar projects and/or technologies. The sources referenced in the PDD have been quoted correctly. The information was verified against credible sources, such as the following:

- Commissioning Certificates /3.1/
- Power Purchase Agreement with state electricity board /3.2/
- CEA guidelines (CO2 Baseline Database for the Indian Power Sector, Version 14 and 15 /3.5/

The steps from the Methodological Tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period "as per CDM VVS for PAs version 02.0 were applied to assess the validity of the current baseline and/or to update the baseline at the renewal of a crediting period:

Step 1: Assess the validity of the current baseline for the next crediting Period

In accordance with the guidance provided under paragraph 284 of CDM PS for PAs version 02.0, "*The project participants shall 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, without reassessing the baseline scenario*".

The validity of the current baseline is assessed using the following Sub-steps:
Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies
Following relevant mandatory national & sectoral policies in Karnataka state are prevailing:

- The Electricity Act, 2003 /5.2/
- National Electricity Policy,2005 /5.3/
- Tariff Policy, 2006 /5.4/
- Karnataka Renewable Energy Policy 2016-2022 /5.5/

Applus+ Certification has confirmed that the current baseline as described in the registered PDD is in compliance with the relevant mandatory national & sectoral

policies as listed above , there are no national or local laws or regulations that entail the installation of wind power project in Karnataka.

Based on the experience, there are no relevant mandatory national and/or sectoral polices forbidding equivalent electricity generated by the project activity is supplied to the Indian grid which is current baseline of the project activity. Therefore, baseline scenario remains unchanged and is in compliance with all the relevant mandatory national and/or sectoral policies.

Step 1.2: Assess the impact of circumstances

The assessment team has confirmed that the baseline scenario as identified at the time of validation of the project activity was the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources into the grid.

Thus, assessment team has confirmed that the project activity was a voluntary investment which intends to replace equivalent amount of electricity at grid from renewable source. The investment does not lead to any continued baseline practice for the PP within their scope whereas the continued operation of the project activity would continue to replace equivalent amount of electricity at grid.
Therefore, the same baseline as identified in the previous crediting period is still valid for the project.

Furthermore, the assessment of the changes in market characteristics is not required for the renewal of the project's crediting period under CDM. The assessment team has verified that the CO_2 Baseline Database version 14 published by CEA was available at the time of contractual agreement with DoE for validation of renewal of crediting period, however at the time of first submission of PDD , latest version 15 of CEA baseline databse was available.

Action/Event	Date	Latest version of CEA CO_2 baseline databse available	Value of EF (tCO_2/MWh)
Contract with DOE for RCP validation	August 2019	Version 14	0.9368
First submission of PDD for RCP	29/06/2020	Version 15	0.9419

The PP has considered the data available through both the sources(CEA database, version 14 and version 15)/3.5/ for establishing the baseline grid emission factor and conservative emission factor is considered to calculate the baseline emission.This approach is found to be appropriate and conservative, hence accepted.

Since the CO_2 baseline databse published by Central Elecrcity Authority (CEA) considers all the new circumstances. Hence, the new circumstances do not have an impact on the baseline emission.
As per the requirement of the sub-step, it has been assessed that there were no impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline scenario.

Step 1.3: Assess whether the continuation of use of current baseline

equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested

The lifetime of WTGs installed for the project activity is 20 years /3.2/; hence baseline equipment's(WTGs) continuously used for electricity generation during next crediting period without any investment. The assessment team able to conclude that an investment is not the most likely scenario for the renewal crediting period under consideration.

Step 1.4: Assessment of the validity of the data and parameters

The grid emission factor calculated ex-ante for the 1st crediting period needs to be updated, as per the valid and latest version of "Tool to calculate the emission factor for an electricity system" /2.7/, the most recent information available should be used to update the emission factor for the 2nd crediting period. Hence, the emission factor is updated accordingly and appropriately described in the following section D.4 of this report.

Conclusion on step 1:
Applus+Certification confirm that the current baseline is still valid as per methodology ACM0002., version 20.0. However the grid emission factor needs to be updated for the subsequent crediting period.

Step 2: Update the current baseline and the data and parameters

Step 2.1: Update the current baseline
As discussed above the baseline scenario of the project activity is still sustained in the second crediting period, hence reassessment of baseline scenario is not required. The baseline emission factor is calcualted as per the latest version of CEA CO_2 baseline database version 15 available at the time of PDD submission for renewal and version 14 available at the time of contractual agreement with DoE. Since the emission factor determined referring CEA CO_2 baseline database version 14 was conservative, hence used in estimation of basleine emissions for the next credting period.

The approved baseline methodology has been correctly applied to identify a complete list of realistic and credible baseline scenarios, and the identified baseline scenario most reasonably represents that would occur in the absence of the proposed CDM project activity. Applus+ Certification considers the baseline scenario is realistic and credible.

In regard to requirement of VVS for PAs version 02.0.§§83, Applus+Certification is able to confirm the following statements:

a) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence, and can be deemed reasonable;
d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;
e) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario, and the identified baseline scenario

	reasonably represents what would occur in the absence of the proposed CDM project activity. **Step 2.2: Update the data and parameters** The baseline emission factor will be updated ex-ante, as described in section D.4 of this report. The parameters described under step 1.4 were appropriately updated considering the latest version of methodology ACM0002., version 20.0.
Findings	CAR #1 nad CAR #2 was raised and resolved.
Conclusion	Applus+Certificaiton confirms that there have been no changes in the relevant national and/or sectoral regulations on installation of wind power project for exporting electricity to power grid since the previous crediting period. On the other hand, the baseline scenario for the project remains the same as that in the registered PDD as "Electricity delivered to state grid by the Project that would otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid". The assessment of continued validity of the current baseline scenario and update of the baseline emissions are complied with 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" as per VVS for PAs version 02.0. In line with PS version 09.0§§283, the demonstration of the validity of the original baseline or its update does not require a reassessment of the baseline scenario, but rather an assessment of the GHG emission reductions that would have resulted from that scenario.

D.4. Estimated emission reductions or net anthropogenic removals

Means of validation	The calculation of the emissions reductions exactly follow the procedures described in the methodology ACM0002, version 20.0 and relevant tool, e.g. the "Tool to calculate the emission factor for an electricity system". Applus+Certification have assessed the calculation of project emissions, baseline emissions, leakage emissions and emission reductions. Corresponding calculations have been carried out based on calculation spreadsheet. The consistency of the parameters and equations presented in revised PDD, as well as calculation spreadsheet etc., has been compared with the information and requirements presented in the methodology and respective tools. The assumptions and data used to determine the emission reductions are listed in the revised PDD and all the sources have been checked. Based on the information reviewed it is confirmed that the sources used are correctly quoted and interpreted in the PDD. The values presented in the PDD are considered reasonably based on the documentation and references reviewed and the results of the interviews. The estimation of the emission reductions are considered correct as the calculations have been reproduced by the assessment team with the attainment of the same results. The algorithms for the determination of the baseline, project, and leakage are discussed in the following sections. The GHG emission reductions are calculated applying the updated version of

methodology ACM0002 version 20.0

Baseline Emissions:

As per the paragraph 22 of the methodology ACM0002 V 20.0:

"If the project activity is the installation of a Greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been

generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in "TOOL07: Tool to calculate the emission factor for an electricity system". The baseline emissions are to be calculated as follows:

$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$

Where:

BE_y = Baseline emissions in year y (t CO_2)

$EF_{grid,CM,y}$ = Combined margin CO_2 emission factor for grid connected power generation in year *y* calculated using the latest version of "TOOL07: Tool to calculate the emission factor for an electricity system" (t CO_2/MWh)

$EG_{PJ,y} = EG_{facility,y}$ (for Greenfield projects paragraph 41 ACM0002 v 20.0)

Where,

$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)

The baseline emissions equivalent to tCO_2 due to the project have been calculated as the product of the net electricity supplied to the grid and the grid emission factor as per the combined margin approach described in the 'Tool to calculate the emission factor for an electricity system' version 07.0. The power produced will be exported to the Indian grid. Hence, the grid emission factor and the corresponding baseline emissions have been calculated for the Indian grid.

The emission factor has been calculated as per Methodological Tool 07: Tool to calculate the emission factor for an electricity system" v 07.0 as recommended by the applied methodology ACM0002 v 20.0.

"A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the 'Tool to calculate the emission factor for an electricity system'."

It is verified that the latest available version for "Tool to calculate the emission factor for an electricity system" is version 07.0 /2.7/ and the PP has correctly referred to the same in the section B.6.1 of the final revised PDD /1.2/ to determine the baseline grid emission factor.

The PP has considered Option (a) of Para 17 to calculate the grid emission factor as per the Methodological Tool 07 "Tool to calculate the emission factor for an electricity system" version 07.0 since data is available from an official source.

In accordance with step 1 of Tool; the project participant has identified the electricity system is based on the option 1 (under the para 17 of the tool) which is unified Indian Grid system. Therefore, the Indian grid has been correctly identified

for the calculation of electricity emission factor, as the project displaces electrical energy from Indian grid, as per the CEA database version 14/3.1/.

It is to be noted that CEA database version 15 was published in December 2019 and it was the most recent information available version at the time of first submission of the PDD to DoE, however the CEA database version 14 published in December 2018 was the latest version available at the time of signing the contract with DoE for validation of renewal of the crediting period.
Hence the PP has calculated the emission factor referring both the version of CEA CO_2 baseline databse, since the value of emission factor calculated using CEA CO_2 baseline databse version 14 was found to be conservative, hence used in the estimation of baseline emissions for the second credting period.

It can be confirmed that the determination of grid emission factor in compliance with the "Tool to calculate the emission factor for an electricity system" (version 07.0.0), which states that "If the DNA of the host country has published a delineation of the project electricity system and connected electricity systems, these delineations should be used". Thus, the Project Participant has considered the national grid that is delineated by the Central Electricity Authority of India which was found to be correct and acceptable.

The values of OM and BM have been determined ex-ante as per the CEA CO_2 baseline database version 14 published on December 2018, which is published by the Ministry of Power, Government of India/3.1/. In step 2 of the Tool, the PP has considered option I "Only grid power plants are included in the calculation."

Further under step 3, the PP has used the simple operating margin calculation method to determine the operating margin (OM). Validation Team has verified from the CEA CO_2 baseline database that the percentage of total grid generation by low-cost/ must-run plants (on the basis of average of five most recent years) for the Indian grid is less than 50% of the total generation. Therefore, it is satisfied the condition stipulated under Para 40 (a) of Methodological Tool 07, Version 07, hence the simple OM method (Option a in paragraph 38) has been used as low cost/must run resources constitute less than 50% of total grid generation.

As per Tool para 40 -42; The PP has chosen ex-ante option (option a of Para 42 of Methodological Tool 07 version 07) for calculation of Simple OM emission factor using a 3-year generation-weighted average, based on the most recent data available at the time of submission of the PDD.

In step 4, the PP has calculated the simple operating margin as per Option B as stipulated under Para 47 (b) of Methodological Tool 07, version 07. The PP has considered an average of the latest available three years i.e. 2016-17, 2017-18 and 2018-19 for calculation of simple OM emission factor. The value for weighted average operating margin has been validated and used as 0.9610 tCO2/MWh.

In step 5; the Build margin for the Indian grid is considered as 0.8644 tCO2/MWh as per "Tool to calculate the emission factor for an electricity system" (Version 07.0, EB 100, Annex 4) para 72 (i.e. as per the provision of the section 6.5 of the tool) where the Option 1 is chosen by PP to calculate the build margin emission factor for the project activity. BM is calculated ex-ante based on the most recent information/data from CEA CO_2 Baseline Database version 14, dated December 2018 and is fixed for the entire crediting period.

In step 6, the combined margin (CM) emission factor is calculated based on option

(a) i.e., weighted average CM as accordance to Tool. The weighted average combined margin has been calculated by the PP, considering the 75% weighted for operating margin and 25% for build margin; this is in accordance with the tool which states that for "*Wind and solar power generation project activities: W_{OM} = 0.75 and W_{BM} = 0.25 (owing to their intermittent and non-dispatchable nature) for the first creditingperiod and for subsequent crediting periods*".

The combined margin emission factor for the project activity arrives as 0.9368 tCO_2/MWh. The PP has provided the detailed calculation for the same in the ER calculation sheet. The baseline emission factor for the electricity system has been calculated on ex-ante basis and will remain fixed for the entire second crediting period.

In accordance with the Methodological tool 07: Tool to calculate the emission factor for an electricity system Version 07.0.0 /2.7/, "*Regional or national average default values* can be used for calculation of CO_2 Emission Factor *if values are reliable and documented in regional or national energy statistics / energy balances".*

The Central Electrcity Authority of India (CEA) is a statutory organisation and the sole authority for publication of such data in India and hence, accepted. The assessment team verified that the parameters are determined ex-ante:

Parameter	Value	Source	Means of Validation
$EF_{OM,y}$ Operating Margin CO_2 emission factor in year y	0.9610 tCO_2/MWh	Baseline Carbon Dioxide Emission Database Version 14 from the Central Electricity Authority (CEA), Ministry of Power, Government of India /3.5/	Verified value against default value listed in CEA database version 14 dated December 2018 /3.5/.
$EF_{BM,y}$ Build Margin CO2 emission factor in year y	0.8644 tCO_2/MWh	Baseline Carbon Dioxide Emission Database Version 14 from the Central Electricity Authority (CEA), Ministry of Power, Government of India /3.5/.	Verified value against default value listed in CEA database version 14 dated December 2018 /3.5/.
EF_y Combined margin CO_2 emission factor for the project electricity system.	0.9368 tCO_2/MWh	Baseline Carbon Dioxide Emission Database Version 14 from the Central Electricity Authority (CEA), Ministry of Power, Government of India /3.5/.	Verified value against default value listed in CEA database version 14 dated December 2018 /3.5/.

The OM has been determined as the average of the previous 3 years values (2016-17, 2017-18 and 2018-19) mentioned in the CEA database. The value of BM (for

year 2018-19) has been sourced directly from the CEA database/3.1/. The combined margin emission factor has been arrived at by applying weights of 75% for OM and 25% from BM, as specified in the methdological tool 07, version 07.0.0, §§ 86 (b) for second crediting period for wind project.

The baseline emissions for the project activity have been calculated as per ACM0002 Version 20.0 §§39. The baseline emissions for the project activity have been calculated to be 146,536 tCO_2 per year.

Validation team confirms that all data sources and assumptions are appropriate and calculations are correct, applicable to the CDM project activity and will result in a conservative estimate of the emission reductions.

Calculation of project emissions:
As per the applied methodology, for most renewable power generation project activities, PEy = 0. However, some project activities may involve project emissions that can be significant. These emissions shall be accounted for, by using the following equation:

$PE_y = PE_{EF,y} + PE_{GP,y} + PE_{HP,y}$

Where,
PE_y = Project emissions in year *y* (tCO2e)

$PE_{FF,y}$ = Project emissions from fossil fuel consumption in year *y* (tCO2)

$PE_{GP,y}$ = Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year *y* (tCO2e)

$PE_{HP,y}$ = Project emissions from reservoirs of hydro power plants in year *y* (tCO2e)

Since the project activity is a wind energy based power generation, the project emissions are not applicable to the project activity. Hence, $PE_y = 0$

Calculation of leakage emissions:
As per the applied methodology, no leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, and transport). These emissions sources are neglected. Therefore, $LE_y = 0$.

Emission reductions:
Emission reductions are calculated as follows:
$ER_y = BE_y - PE_y$,
where
ER_y = Emission reductions in year y (tCO_2e)
BE_y = Baseline Emissions in year y (tCO_2 e)
PE_y = Leakage emissions in year y (tCO_2 e)

As discussed above $PE_y=0$ and $LE_y=0$, hence
$ER_y = BE_y - 0 - 0$
$ER_y = BE_y$
$ER_y = EG_{facility,y} \times EF_{grid, CM,y}$

	Value of $EG_{facility,y}$ is estimated to be 156,416 MWh per year ,which is same as in the updated PDD. Hence baseline emission reductions as follows: BE_y= 156,416 MWh *0.9368 tCO_2e/MWh = 146,536 tCO_2e $ER_y = BE_y$ = 146,536 tCO_2e per year for the selected 7 years crediting period. Total emission reductions during the second crediting period are estimated to be 1,025,752 tCO_2.
Findings	CAR #2 was raised and resolved.
Conclusion	Applus+Certification have assessed the calculations of project emissions, baseline emissions, leakage emissions and emission reductions. Corresponding calculations have been carried out based on calculation spreadsheets. The parameters and equations presented in the PDD, as well as other applicable documents, have been compared with the information and requirements presented in the methodology and respective tools. The assessment team has compared all the formulae to ensure consistency between those presented in the calculation files and in the PDD, methodology, and tools. This is found to be correct. In general, Applus+Certification is able to confirm the following: ➢ All assumptions and data used by the project participants are listed in the 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 PDD; ➢ All values used in the 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 PDD. Applus+Certification confirms that the baseline, the estimated GHG emission reductions in the final updated PDD comply with the applicable requirements in the section 7.5.5 PS for PAs version 02.0, and the valid version of the methodology applicable to the registered CDM project activity.

D.5. Validity of monitoring plan

Means of validation	The assessment team reviewed the updated PDD, checked whether the PDD update the monitoring plan section in accordance with all relevant applicable requirements in the CDM PS for PAs. Also verified whether the PDD list all data and parameters to be monitored, as required by the applied methodology and whether the monitoring plan explained the operational and management structure, responsibilities and institutional arrangement for data collection/archiving, QA/QC procedures. The project applies the approved consolidated monitoring methodology ACM0002 version 20.0 - “Grid-connected electricity generation from renewable sources”. The monitoring parameter relevant to this project activity described in the applied methodology is: $EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)

The following parameters are included in the monitoring plan of updated PDD:

1. $EG_{PJ,y}$ = Net Electricity supplied to the Distribution Licensee
2. $EG_{PJ,y,T1}$ = Net Electricity supplied to the Distribution Licensee at Transformer 1
3. $EG_{PJ,y,T2}$ = Net Electricity supplied to the Distribution Licensee at Transformer 2
4. $EG_{PJ,y,T1,export}$ = Electricity exported to the Distribution Licensee at Transformer 1
5. $EG_{PJ,y,T2,export}$ = Electricity exported to the Distribution Licensee at Transformer 2
6. $EG_{PJ,y,T1,import}$ = Electricity imported from the Distribution Licensee at Transformer 1
7. $EG_{PJ,y,T2,import}$ = Electricity imported from the Distribution Licensee at Transformer 2

During the telephonic converstion with PPs representative and through actual photographs of project site, it is verified that, the WTGs belongs to the project activity are connected to many VCBs (Vacuum Circuit Breakers) through step-up transformers (400V to 33KV), these transformers are consecutively connected to six feeders and that ultimately lead to two-step up transformers (33KV to 110 KV) via Line 1 and Line 2 at WWIL pooling substation/1.6/.

The representatives of ESCOM (State utility) and the PP jointly take the Joint meter reading at WWIL pooling substation (110 kV) in the form of JMRs. Based on the data recorded in the JMRs, net Electricity supplied to the Distribution Licensee (**$EG_{PJ,y}$**) is calculated by state utility, using the following formula:

$$\mathbf{EG_{PJ,y} = EG_{PJ,y,T1} + EG_{PJ,y,T2}}$$

Where,
$EG_{PJ,y,T1}$ = Net Electricity supplied to the Distribution Licensee at Transformer 1

$EG_{PJ,y,T2}$= Net Electricity supplied to the Distribution Licensee at Transformer 2

The assessment team has checked the sample JMR/Invoice/3.3 & 3.4) and issuance records/1.6/ and confirmed that all the monitoring parameters (1 to 7) will be sourced from through the JMRs issued by the state utility and monthly values of $EG_{PJ,y}$ will be cross checked with the invoices raised to the state utility.

Net Electricity supplied to the Distribution Licensee at Transformer 1 (**$EG_{PJ,y,T1}$**) and at Transformer 2 (**$EG_{PJ,y,T2}$**) is calculated by state utility, using the following formula:

$$\mathbf{EG_{PJ,y,T1} = EG_{PJ,y,T1,export} - EG_{PJ,y,T1,import}}$$

Where,
$EG_{PJ,y,T1,export}$ =Electricity exported to the Distribution Licensee at Transformer 1

$EG_{PJ,y,T1,import}$=Electricity imported from the Distribution Licensee at Transformer 1

Similarly,
$$\mathbf{EG_{PJ,y,T2} = EG_{PJ,y,T2,export} - EG_{PJ,y,T2,import}}$$

Where,
$EG_{PJ,y,T2,export}$ =Electricity exported to the Distribution Licensee at Transformer 2

	$EG_{PJ,y,T2,import}$=Electricity imported from the Distribution Licensee at Transformer 2 Electricity exported and imported to/from the distribution lincensee at transformer 1 and 2 is monitored through the main and check meter of 0.2% accuracy class. Calibration frequency of the meters is once in a year. The registered monitoring plan as described in the revised PDD was implemented and followed during previous crediting period/1.6/. This was checked from the verification records available on the UNFCCC webpage of this project/1.5/. Hence, it can be assured that the monitoring plan of the registered project is in accordance with the applied methodology. All the relevant data records will be kept by the Project owner during the crediting period and electronically archived for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later. Data management and quality control measures have been confirmed through desk review of the project documents/1.3/ and interview with the PPs representative. Assessment team confirmed that project is not involve any sampling plan in monitoring of project activity parameters hence section B.7.2 in the revised PDD is not applicable for this project activity. **Implementation of the monitoring plan:** An organizational structure is provided in section B.7.3 of the revised PDD. The functions such as data collection, aggregation, verification, calculation, archiving, as well as the maintenance of equipment's etc. have been defined. Quality assurance and quality control procedures for recording, maintaining and data archiving etc. will be ensured according to CDM EB rules. The calibration of the meter will be implemented as per national standard. An emergency treatment process has been defined in PDD when the meter is in malfunction. Data management and quality control system are quoted in PDD. The monitoring staffs will be trained based on the training program described in the revised PDD. The procedures described in the revised PDD have been recognized by the assessment team through document review and interviews with the relevant personnel. It is confirmed that remaining aspects of monitoring plan like monitoring procedure, metering system, calibration procedure, data recording, monitoring role and responsibility and QA/QC procedure as mentioned in the registered PDD, will remain same during the 2nd crediting period. The assessment team is able to confirm that the proposed monitoring plan is feasible within the project design.
Findings	No non-conformability was observed during assessment for validation of crediting period. Therefore, no finding was raised.
Conclusion	Applus+ Certification confirms that the monitoring plan contains all necessary parameters which have been clearly described in revised PDD /1.3/ and that the means of monitoring described in the plan complies with the requirements of the methodology. In conclusion, based on document review and stakeholder interview, together based on local and sectoral expertise, the assessment team confirms that: ➢ The monitoring plan of the revised PDD is in compliance with the requirements of the methodology ACM0002 version 20.0.

	➢ Monitoring arrangements described in the monitoring plan of the revised PDD are feasible within the project design. ➢ The PP's ability to implement the monitoring plan can be guaranteed. The monitoring plan of the revised PDD is complied with the registered PDD. Applus+Certification are of the opinion that the project participants are able to implement the monitoring plan and the emission reductions achieved can be reported ex-post for verification.

D.6. Crediting period

Means of validation	The assessment team checked whether the updated PDD indicated that the next crediting period commences on the day immediately after the expiration of the current crediting period by means of a document review, use of official sources and interviews with relevant personnel during site visit. The first 7 years renewable crediting period was from 24/09/2012 to 23/09/2019; the Project Participant is applying for a 2nd renewable crediting period, which is 7 years (24/09/2019 – 23/09/2026).
Findings	No non-conformability was observed during assessment for validation of crediting period. Therefore, no finding was raised.
Conclusion	Applus+Cerification confirmed that the notification regarding to the request for renewal of Crediting period of the project meets the requirements of paragraph 274 CDM PCP for PAs version 02.0 and the next crediting period of the registered CDM project activity commences on the day immediately after the expiration of the current crediting period. Therefore, CDM requirements stipulated under VVS for PAs Version 02.0 §§412() is satisfied completely.

D.7. Project participants

Means of validation	The assessment team checked whether the names of the project participant included in the updated PDD are consistent with the names of the project participants in the registered PDD by means of desk review and interviews of PPs representative . The project participant in registered PDD is M/s. CLP Wind Farms (India) Private Limited (project owner). The project participant in updated PDD is same as in the registered PDD and indicated in latest version of the MoC statement, dated 23/10/2019.
Findings	No non-conformability was observed during assessment of details of Project Participant. Therefore, no finding was raised.
Conclusion	Applus+ Certification confirmed that the project participants in the updated PDD are consistent with the actual situation. Therefore, CDM requirements stipulated under VVS for PAs Version 02.0 §§412 a (vi) is satisfied completely.

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	-	-
Corrections	N	-	-
Change to the start date of the crediting period	N	-	-
Inclusion of a monitoring plan	N	-	-
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	N	-	-
Changes to the project design	N	-	-
Changes specific to afforestation and reforestation project activities	N	-	-

SECTION E. Internal quality control

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As final step of a validation of the final documentation including the validation opinion and the checklist have to undergo an internal quality control by the technical review committee, i.e. each report has to be finally approved either by the head of the technical review committee or the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one. After confirmation of the PP the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.

SECTION F. Validation opinion

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Applus+Certification has performed a validation of renewal of crediting period of the "Wind Energy Project in Saundatti, Karnataka" (Ref. No. 6794). The validation was performed on the basis of the updated sections of the PDD relating to the baseline, estimated emission reductions and the monitoring plan using the most recent version of baseline and monitoring methodology applicable for the project activity.

The final validation opinion was finalized in accordance with the CDM VVS for PAs version 02.0 and the CDM PS for PAs version 02.0 including the assessment of:

a) An impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant guidance from the Board with regard to renewal of the crediting period at the time of requesting renewal of crediting period;

b) The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.

The review of the project design documentation and the subsequent follow-up interviews have provided Applus+Certification with sufficient evidence to determine the validity of the original baseline and/or its update through an assessment. The project correctly applies the latest baseline and monitoring methodology ACM0002 "Grid-connected electricity generation from renewable sources" ,version 20.0.

[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).

Given that the project is implemented as designed and the underlying assumptions do not change, the project is likely to achieve the estimated amount of annual emission reductions of 146,536 tCO2e and a total estimated emission reductions of 1,025,752 tCO2e over the 2nd renewable crediting period as specified within the final revised PDD.

The monitoring plan provides for the monitoring of the project's emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design. It's Applus+Certification opinion that the project participants are able to implement the monitoring plan and the emission reductions achieved can be reported ex-post for verification.

In summary, it is Applus+Certification opinion that the project activity "Wind Energy Project in Saundatti, Karnataka" (Ref. No. 6794) in India, as described in the PDD, version 06 dated 03/08/2020 , meets all relevant UNFCCC requirements for the renewal of the crediting period. Hence Applus+Certification submitted the request for renewal of the crediting period of the project activity.

Appendix 1. Abbreviations

Abbreviations	Full texts
BESCOM	Bangalore Electricity Supply Company
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
EB	Executive Board
EF	Emission Factor
EPC	Engineering ,Procurement and Construction
ER	Emission Reductions
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CL	Clarification Request
DOE	Designated Operational Entity
DNA	Designated National Authority
EIL	Enercon(India) Limited
ESCOM	Electricity Supply Company
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GOI	Government of India
HESCOM	Hubli Electricity Supply Company
IPCC	Intergovernmental Panel on Climate Change
JMR	Joint Meter Reading
KPTCL	Karnataka Power Transport Company Limited
MP	Monitoring Plan
MR	Monitoring Report
MWh	Megawatt hour
PDD	Project Design Document
PPA	Power Purchase Agreement
PP	Project Participant
PRC	Post Registration Changes
PS	Project Standard
RMP	Revised Monitoring Plan
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
UID	Unique Identification number
UNFCCC	United Nations Framework Convention on Climate Change
WTG	Wind Turbine Generator
WEC	Wind Energy Convertor
WWIL	Wind World India Limited

Appendix 2. Competence of team members and technical reviewers

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of Applus+ Certification.

The composition of audit team shall be approved by the Applus+ Certification ensuring that the required skills are covered by the team. The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Qualification	Coverage of scope	Coverage of technical Area	Financial aspect	Host country Experience	Attendance to the On-Site Assessment
Vivek Kumar Ahirwar	Lead Auditor (LA)	Yes (1)	Yes (1.2)	N/A	Yes	NA
Vivek Kumar Ahirwar	Technical Expert (TE)	Yes (1)	Yes (1.2)	N/A	Yes	NA
Simon Shen	Technical Reviewer (TR)	Yes (1)	Yes (1.2)	N/A	N/A	N/A

Vivek Kumar Ahirwar is a BEE-Certified Energy Auditor by Govt of India with over eight years of relevant experience in energy efficiency, energy audit, thermal and electrical energy generation technology from renewable source and energy conservation in energy intensive industries, designated consumers and commercial buildings, implementation of energy conservation building codes, research, process and green building projects. He is a certified lead auditor for ISO 14001 EMS and 14064. He has experience under various categories of projects stating from renewable to waste to supercritical projects and WCD. He has successfully audited more than 100 GHG (CDM/VCS/GS) projects in different states across the India. He has done Mater in Technology (Energy Management) from a premier institute, School of Energy & Environmental Studies, DAVV, Indore (M.P.), India and Bachelor of Engineering (Mechanical Engineering) from Govt. Engineering college, Rewa, RGPV, India.

Simon Shen (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ Certification for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ Certification, he had been worked for TÜV SÜD as a GHG Validator/Verifier and ISO 9001/14001 Lead Auditor for 5.5 years.

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
	Basic Documents (Monitoring Report, Project Design Documents, Previous Verification Reports)			
1.0	PP	Registered PDD Version 3.3	Dated 02/07/2012	PP
1.2	PP	Revised PDD, version 04	Dated 20/06/2020	PP
		Revised PDD, version 05	Dated 24/07/2020	
1.3	PP	Revised PDD, version 06 (final)	Dated 03/08/2020	PP
1.4	Bureau Veritas Certification	Validation report Rev.1	Dated 17/07/2012	Other: UNFCCC
1.5	UNFCCC	CDM Project activity view page "Wind Energy Project in Saundatti, Karnataka" http://cdm.unfccc.int/Projects/DB/BVQI1343049611.03/view	-	Other: UNFCCC
1.6	ESPL	Verification report for first monitoring period (24/09/2012 to 31/12/2012),Version 03	Dated 05/05/2017	Other: UNFCCC
		Verification report for second monitoring period (01/01/2013 to 01/10/2016),Version 02	Dated 02/01/2017	
2.	**References and requirements at UNFCCC/IPCC/etc.**			
2.1	UNFCCC website	Clean Development Mechanism Validation and Verification Standard for Project Activity (CDM-VVS for PA), version 02.0 as per EB 101, Annex 2	Dated 29/11/2018	Other: UNFCCC
2.2	UNFCCC website	CDM Project Standard for Project Activity (CDM-PS for PA), version 02.0 as per EB 101, Annex 1	Dated 29/11/2018	Other: UNFCCC
2.3	UNFCCC website	CDM Project Cycle Procedure for Project Activity (CDM-PCP for PA), version 02.0 as per EB 101, Annex 16	Dated 29/11/2018	Other: UNFCCC
2.4	UNFCCC website	Applied Methodology, ACM0002, Version 20.0 "Grid-connected electricity generation from renewable sources"	Dated 28/11/2019	Other: UNFCCC
2.5	CDM EB	PDD template form	Version 11.0	Other: UNFCCC
2.6	CDM EB	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, EB 66, Annex 47	02/02/2012	Other: UNFCCC
2.7	CDM EB	Tool to calculate the emission factor for an electricity system	Version 7.0	Other: UNFCCC
2.8	CDM EB	Email received from CDM Executive Board regarding the relaxation for mandatory site visits by DOEs for a period of three months (23 March to 23 June 2020) due to COVID-19 pandemic	Dated 20/03/2020	Other: UNFCCC
		Second email received from CDM Executive Board regarding the relaxation for mandatory site visits by DOEs till 31/12/2020	Dated 24/06/2020	
3.	**Project implementation information**			
3.1	State utility	Commissioning certificate for 23 nos of 800 kW each WEG's (18.4 MW) on 04/03/2010 vide letter no. EEEE/TL&SS/BGM/5372-82	Dated 05/03/2010	PP

		Commissioning certificate for 03 nos of 800 kW each WEG's (2.4 MW) on 31/03/2010 vide letter no. EEEE/TL&SS/BGM/28-39	Dated 01/04/2010	
		Commissioning certificate for 09 nos of 800 kW each WEG's (7.2 MW) on 17/05/2010 vide letter no. EEEE/TL&SS/BGM/788-99	Dated 18/05/2010	
		Commissioning certificate for 20 nos of 800 kW each WEG's (16.0 MW) on 23/06/2010 vide letter no. EEEE/TL&SS/BGM/1374-85	Dated 24/06/2010	
		Commissioning certificate for 20 nos of 800 kW each WEG's (16.0 MW) on 03/08/2010 vide letter no. EEEE/TL&SS/BGM/2122-34	Dated 04/08/2010	
		Commissioning certificate for 06 nos of 800 kW each WEG's (4.8 MW) on 15/09/2010 vide letter no. EEEE/TL&SS/BGM/3016-28	Dated 16/09/2010	
		Commissioning certificate for 09 nos of 800 kW each WEG's (7.2 MW) on 03/12/2010 vide letter no. EEEE/TL&SS/BGM/4412-23	Dated 04/12/2010	
3.2	BESCOM	Power Purchase Agreement between BESCOM and CLP Wind Farms (India) Private Limited	Dated 13/08/2008	PP
3.3	BESCOM	Latest Monthly JMRs	-	PP
3.4	PP	Latest Monthly electricity sales invoices towards the grid authority	-	PP
3.5	CEA	CEA CO_2 Baseline Database for the Indian Power Sector Version 14	December 2018	Other
		CEA CO2 Baseline Database for the Indian Power Sector Version 15	December 2019	
4.	**ER calculation and cross checking issue**			
4.1	PP	Emission reduction calculation sheet , Version 01	Dated 20/06/2020	PP
4.2	PP	Emission reduction calculation sheet, Version 02	Dated 24/07/2020	PP
		Emission reduction calculation sheet, Version 02	Dated 03/08/2020	
5.	**Others**			
5.1	CEA	Central Electricity Authority (Installation and Operation of Meters) Regulations - Notified on 17/03/2006 No.502/70/CEA/DP&D - AmendmentsNotifiedon26/06/2010No.502/6/2009/ DP&D/D-I (http://www.cea.nic.in/reports/regulation/meter_reg.pdf)	17/03/2006	Other: CEA
5.2	Ministry of Power, GOI	The Electricity Act, 2003 (http://www.cercind.gov.in/Act-with-amendment.pdf)	Dated 26/05/2003	Other
5.3	Ministry of Power, GOI	National Electricity Policy,2005 (https://powermin.nic.in/en/content/national-electricity-policy)	Dated 12/02/2005	Other
5.4	Ministry of Power, GOI	Tariff Policy, 2006 http://www.orierc.org/documents/National%20Electricity%20Tariff%20Policy.pdf	January 2006	Other
5.5	KERC	Karnataka Renewable Energy Policy 2016-2022 (http://www.cbip.org/Policies2019/PD_07_Dec_2018_Policies/Karnataka/2-RE%20Draft/1%20Summary%20Draft%20Karnataka%20Renewable%20Energy%20Policy%202016-22.pdf)	-	Others

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

Table 1. CL from this validation

CL ID	01	**Section no.**	C	**Date :** 09/07/2020
Description of CL				
• Please submit the power purchase agreement signed with state utility and latest JMR & invoice issued for the project activity. • Please clarify why the revised PDD is not submitted in track change mode.				
Project participant response				**Date :** 20/07/2020
• Power Purchase Agreement signed with state utility, JMR & invoice for the month of Jun-20 are enclosed with this submission for assessment • Revised PDD has now been enclosed with this submission showing all changes from registered PDD				
Documentation provided by project participant				
• *Power Purchase Agreement* • *Joint Meter Reading for the month of June-20* • *Invoice for the month of June-20*				
DOE assessment				**Date:** 31/07/2020
The PP has submitted the requested documents and revised PDD in track change mode, found satisfactory, hence accepted. CL #1 is closed.				

Table 2. CAR from this validation

CAR ID	01	**Section no.**	D.3	**Date :** 09/07/2020
Description of CAR				
Please clarify why the information's regarding 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 are not provided in section B.4 of the PDD. The PP is requested to clarify how it has assessed that national and/or sectoral policies and circumstances existing at the time of renewal of the crediting period did does not affect the original baseline.				
Project participant response				**Date :** 20/07/2020
Impact of national and/or sectoral policies and circumstances on this project at the time of renewal crediting period of the project has now incorporated in the B.4 of revised PDD and it is found that same are not effecting the project baseline.				
Documentation provided by project participant				
Revised PDD version 05, dated 20/07/2020				
DOE assessment				**Date:** 31/07/2020
The PP has described 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 in section B.4 of the PDD. It is confirmed that there are no changes identified with reference to the national and/or sectoral policies, regulations and circumstances that may impact implementation of wind projects in Karnataka CAR #1 is closed.				

CAR ID	02	**Section no.**	D.4	**Date :** 09/07/2020
Description of CAR				

Please clarify why the emission factor is not calculated using the CEA baseline database available at the time of signing the contract for validation of RCP with DoE. Please clarify why all the data sourced from CEA database, used in calculation of emission factor is not presented in the ER calculation sheet.
Project participant response **Date :** 20/07/2020
• *Post signing of agreement with DoE, CEA database has been revised twice. Thus, combined emission factor has been calculated for both the versions and conservative emission factor has been considered for renewal of PDD.* • *All data used in calculation of emission factor are sourced from CEA database. Same have now been presented in the ER calculation sheet*
Documentation provided by project participant
Revised Emission Reduction sheet
DOE assessment **Date:** 31/07/2020
• In the revised PDD, only CEA database version 15 is referred. Conservativeness of the emission factor is not demonstrated in the revised PDD. • The complete data sourced from CEA database is not reported in the ER calculation sheet. Please clarify. • Title of the applied methodology ACM0002 V 20.0 as mentioned in the revised PDD is not consistent with the meth document. • Please clarify how the start date of second crediting period is appropriate as it overlapping with the end date of previous monitoring period. CAR #2 is open
Project participant response **Date :** 03/08/2020
• Conservativeness of the CO2 database of version 14 has been justified now in section 6.1 of the revised PDD ver 06 • The complete data sourced from CEA database (for ver 14 and ver 15) is now reported in the ER calculation sheet • Title of the applied methodology ACM0002 V 20.0 has been revised consistently in the revised PDD now • Start date of second crediting period is now revised appropriately and same would be started from 24/09/2020.
Documentation provided by project participant
Revised PDD V 06 *Revised ER sheet*
DOE assessment **Date:** 08/08/2020
• The PP has provided calculation of emission factor using both the version 14 & 15 of CEA baseline database and the EF resulting conservative estimation of emission reductions is chosen for next crediting period. This approach is found to be satisfactory, hence accepted. • The PP has reported the complete data sourced from CEA database in the revised ER calculation sheet, found to be appropriate, hence accepted. • Title of the applied methodology ACM0002 V 20.0 is updated in the revised PDD and fount consistent with the meth document. • Start date of the second crediting period is updated appropriately in the revised PDD, found to be satisfactory. CAR #2 is closed.

Table 3. FAR from this validation

FAR ID	xx	**Section no.**		**Date:** DD/MM/YYYY
Description of FAR				
NA				
Project participant response				**Date:** DD/MM/YYYY

Documentation provided by project participant	
DOE assessment	**Date:** DD/MM/YYYY

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Document information

Version	*Date*	*Description*
03.0	31 May 2019	Revision to: • 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.

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