




**Validation report form for renewal of crediting period for  
CDM project activities  
(Version 03.0)**

**BASIC INFORMATION**

<b>Title and UNFCCC reference number of the project activity</b>	150 MW grid connected Wind Power based Electricity generation project in Gujarat, India UNFCCC Reference No.: 2347
<b>Number and duration of the next crediting period</b>	02 18/06/2016 to 17/06/2023
<b>Version number of the validation report</b>	1.1
<b>Completion date of the validation report</b>	13/01/2020
<b>Version number of PDD to which this report applies</b>	05
<b>Project participants</b>	1. BLP Vayu (Project 1) Private Limited 2. Sweden: Asian Development Bank, as Trustee of the Future Carbon Fund; 3. Sweden: Swedish Energy Agency
<b>Host Party</b>	India
<b>Applied methodologies and standardized baselines</b>	ACM0002 Version 20: Grid-connected electricity generation from renewable sources
<b>Mandatory sectoral scopes</b>	Sectoral Scope 01 - Energy industries (renewable/ non-renewable sources)
<b>Conditional sectoral scopes, if applicable</b>	NA
<b>Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next crediting period</b>	326,203 tCO <sub>2e</sub>
<b>Name and UNFCCC reference number of the DOE</b>	Earthood Services Pvt. Ltd. (ESPL) UNFCCC ref. No of the DOE - E-0066
<b>Name, position and signature of the approver of the validation report</b>	 Dr. Kaviraj Singh Managing Director

**SECTION A. Executive summary**

&gt;&gt;

Earthood Services Private Limited (ESPL) has been contracted by BLP Vayu (Project 1) Private Limited to conduct the validation for renewal of crediting period of the project **“150 MW grid connected Wind Power based Electricity generation project in Gujarat, India”**, UNFCCC Reference No. 2347, against CDM Project Standard for project activities Version 2/2.2/.

The validation for renewal of crediting period includes confirming the project's design description, project's baseline, monitoring plan and the project's compliance with relevant CDM and host party criteria and implementation of the monitoring plan of the PD for renewal of crediting period and the application of the monitoring methodology as per ACM0002 version 20: “Grid-connected electricity generation from renewable sources”/2.4/.

The purpose of this project activity is to generate clean form of electricity through renewable wind energy source for sale of electricity to the grid. The project activity consists of 100 WTGs (1.5 MW capacity each), making the total installed capacity to be 150 MW at the Kutch region of Gujarat India. The project will replace anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 326,203 tCO<sub>2e</sub> per year, thereon displacing 348,210 MWh/year amount of electricity from the generation-mix of power plants connected to the Indian electricity grid, which is mainly dominated by thermal/fossil fuel-based power plant. Total estimated GHG emission reductions for the chosen 7 year renewable crediting period will be 2,283,421 tCO<sub>2e</sub>.

The review of the project design documentation for renewal of crediting period and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and stakeholders have provided ESPL with sufficient evidence to validate the fulfillment of the stated criteria.

The assessment team is able to conclude that:

- i. A reasonable level of assurance has been applied.
- ii. All data and information used for ex-ante calculation of emission reductions is correctly applied.
- iii. The project is in line with all relevant host country legislation.
- iv. The project additionality is not required to be reassessed, however it is sufficiently justified in the PDD.
- v. The monitoring plan is in accordance with the approved methodology, transparent and adequate.
- vi. Project deviations have sufficiently been addressed and justified.
- vii. The calculation of the baseline emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 2,283,421 tCO<sub>2e</sub> are most likely to be achieved within the 7 year renewable crediting period.

The conclusions of this validation report show, that the project, as it was described in the updated project documentation, is in line with all criteria applicable for the validation against the CDM Project standard for project activities Version 2/2.2/ standard without any qualifications or limitations.

A risk based approach has been followed to perform this verification. In the course of validation, 02 Corrective Action request (CARs) and 01 Clarification request (CLs) were raised and successfully closed. There is no FAR raised.

ESPL confirms that that the project is meeting the criteria specified by PDD template version 11/2.5/, CDM Project standard for project activities Version 2/2.2/ and applied methodology ACM0002 (version 20)/2.4/, and hence be successfully validated, verified and further certified for emission reductions under CDM. Further confirms a combined positive validation for RCP opinion confirming the project complies with the applicable CDM requirements, thus recommending the project for registration.

**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/ Technical Expert/Local expert/ Methodological expert	O R	Ahirwar	Vivek Kumar	Climensys	Y	Y	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	Gautam	Ashok	Central Office
2.	Expert to TR	IR	Gautam	Ashok	Central Office
3.	Approver	IR	Singh	Kaviraj	Central Office

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

&gt;&gt;

The validation team has conducted the validation using the CDM Project Standard for Project Activity and the ACM0002 version 20/2.4/ methodology as the reference criteria.

The validation team had done the completeness check of updated PDD submitted by the PP as per the CDM Project Standard for Project Activities version 2/2.2/ requirements was reviewed. Furthermore a desk review was also carried out to assess the following:

- i. Information of project details in compliance with CDM PDD template
- ii. Appropriateness of methodology ACM0002 version 20 applied to the project activity
- iii. Compliance with relevant laws and regulations
- iv. Correctness of application of baseline and monitoring methodology
- v. Monitoring plan described in the updated CDM PDD
- vi. Proof of listing of project ownership
- vii. Calculation of grid emission factor, etc. where applicable.

The validation is performed primarily as a document review of the registered CDM PDD, updated CDM PDD for RCP/1.2/, CDM validation report and previous verification report. The assessment team also reviewed the documents related to project design like commissioning certificates, and PPA.

The assessment is performed by a validation team using a protocol. The cross checks between information provided in the updated CDM PDD and information from sources other than those used, if available, the team's sectoral or local expertise and, if necessary, independent background

investigations. The details of the documentation reviewed during the validation are provided under Appendix 2 of this report.

## C.2. On-site inspection

Duration of on-site inspection: 15/11/2019				
No.	Activity performed on-site	Site location	Date	Team member
1.	Physical inspection of the project activity: Site visit and interview of monitoring personnel, Project Activity (Technology, Location and Implementation)	Project site at Kutch region of Gujarat India	15/11/2019	Vivek Kumar Ahirwar
2.	Choice and applicability of baseline methodology(ies) updated Project boundary and emission sources included in the project boundary.	Project site at Kutch region of Gujarat India	15/11/2019	Vivek Kumar Ahirwar
3.	Review of ER calculations in accordance with applied methodology and relevant tools. Operational lifetime of the project activity, Renewal of Crediting period	Project site at Kutch region of Gujarat India	15/11/2019	Vivek Kumar Ahirwar

## C.3. Interviews

The site visit for the project location is conducted by the assessment team, site visit interview was conducted and the following stakeholders were interviewed.

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Yadav	Vikash	IS	15/11/2019	Project Activity Description, implementation and operation of the project. Procurement Records & Consumption, Bill & Energy Bills/Records. Calculations and assumptions used to obtain the GHG data and ER	Vivek Kumar Ahirwar
2.	Shah	Jimmy	IS	15/11/2019	Monitoring Data & Records Monitoring Plan, equipment, calibrations, maintenance, data records, certificates etc.;	Vivek Kumar Ahirwar

## 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	01	01	-
Application and selection of methodologies and standardized baselines	-	01	-

Validity of original baseline or its update	-	-	-
Estimated emission reductions or net anthropogenic removals	-	-	-
Validity of monitoring plan	-	-	-
Crediting period	-	-	-
Project participants	-	-	-
Post-registration changes	-	-	-
Others (please specify)	-	-	-
<b>Total</b>	01	02	0

## SECTION D. Validation findings

### D.1. Compliance with PDD form

<b>Means of validation</b>	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, 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.
<b>Findings</b>	CL1 and CAR 1 raised and closed successfully.
<b>Conclusion</b>	The updated PDD is in line with the latest applicable PDD from version 11.

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

<b>Means of validation</b>	<p>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.</p> <p>The project was originally registered based on methodology ACM0002. version 7. The updated PDD applies methodology ACM0002 version 20/2.4/. This is appropriate because the methodology ACM0002 version 20 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 it meets the condition that for renewal of the crediting period, the methodology shall not be changed.</p> <p>Following tools referred to by the methodology are also applied:</p> <ul style="list-style-type: none"> <li>- Tool to calculate the emission factor for an electricity system – Version 07.0.0, EB 100 annex 4/2.7/</li> <li>- 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/</li> </ul> <p>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/1.2/ 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 :</p>										
	<table> <tr> <th>Sr. No</th><th>Criteria</th><th>Means of verification</th><th>Conclusion</th></tr> <tr> <td>1</td><td> <p>This methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ul style="list-style-type: none"> <li>(a) Install a Greenfield power plant;</li> <li>(b) Involve a capacity addition to (an) existing plant(s);</li> <li>(c) Involve a retrofit of (an) existing operating</li> </ul> </td><td>The Project activity is installation of Greenfield Wind Power Project. Hence the project activity satisfies this applicability criterion of the methodology.</td><td>Criteria (a) fulfilled</td></tr> </table>	Sr. No	Criteria	Means of verification	Conclusion	1	<p>This methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ul style="list-style-type: none"> <li>(a) Install a Greenfield power plant;</li> <li>(b) Involve a capacity addition to (an) existing plant(s);</li> <li>(c) Involve a retrofit of (an) existing operating</li> </ul>	The Project activity is installation of Greenfield Wind Power Project. Hence the project activity satisfies this applicability criterion of the methodology.	Criteria (a) fulfilled		
Sr. No	Criteria	Means of verification	Conclusion								
1	<p>This methodology is applicable to grid-connected renewable energy power generation project activities that:</p> <ul style="list-style-type: none"> <li>(a) Install a Greenfield power plant;</li> <li>(b) Involve a capacity addition to (an) existing plant(s);</li> <li>(c) Involve a retrofit of (an) existing operating</li> </ul>	The Project activity is installation of Greenfield Wind Power Project. Hence the project activity satisfies this applicability criterion of the methodology.	Criteria (a) fulfilled								

		<p>(d) plants/units; Involve a rehabilitation of (an) existing plant(s)/unit(s); or</p> <p>(e) Involve a replacement of (an) existing plant(s)/unit(s).</p>		
	2	<p>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 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>The option (a) of applicability criteria 1 is applicable as project activity is generation of electricity through Wind Power Plant which is renewable energy power plant. Hence the project activity satisfies this applicability criterion of the methodology</p>	Criteria (a) fulfilled
	3	<p>In case of hydro power plants, one of the following conditions shall apply:<sup>1</sup></p> <p>(c) The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of</p>	<p>The project activity is wind power project thus this condition is not applicable</p>	Not applicable

<sup>1</sup> Project participants wishing to undertake a hydroelectric project activity that result in a new reservoir or an increase in the volume of an existing reservoir, in particular where reservoirs have no significant vegetative biomass in the catchments area, may request a revision to the approved consolidated methodology.

		<p>any of the reservoirs; or</p> <p>(d) 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 (3), is greater than 4 W/m<sup>2</sup>; or</p> <p>(e) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m<sup>2</sup>; or</p> <p>(f) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m<sup>2</sup>, 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 (4), is greater than 4 W/m<sup>2</sup>;</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/m<sup>2</sup> shall be:</p> <p>a. Lower than or equal to 15 MW; and</p> <p>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:	The project activity is wind power project	Criteria are not relevant to the project

		<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 five years prior to implementation of CDM project activity.</p>	thus this condition is not applicable	activity.
	5	<p>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>	The project activity is wind power project thus this condition is not applicable	Criteria are not relevant to the project activity.
	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 proposed project activity is a Greenfield project; thus, this criterion is not applicable.	A criterion is not relevant to the project activity.



		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".		
	7	In addition, the applicability conditions included in the tools referred to below apply. <sup>2</sup>	The project applies the following tools and is in compliance to the same; <ul style="list-style-type: none"> <li>"Tool to calculate the emission factor for an electricity system";</li> </ul>	Criteria is inline with requirements to the project activity.
<p>The applied methodology refers to latest available versions of the following tools;</p> <p><b>1. Tool to calculate the emission factor for an electricity system</b></p> <p>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 14 dated December 2018 /3.1/ which was the latest available database at the time of PDD submission for RCP validation of the project activity. The locations of windmills are in the state of Gujarat, in India. As per CEA Baseline CO2 Emission Database/3.1/, the state of Gujarat 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.</p> <p><b>2. Tool for the demonstration and assessment of additionality</b></p> <p>This tool is not required to be applied during validation of renewal crediting period.</p> <p>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.</p> <p>Thus all the applicability conditions of the applied methodology are confirmed in line with paragraphs 68 of VVS for PAs version 02.0/2.1/. 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.</p>				
<b>Findings</b>	No non-conformity was observed in this regard. Therefore, no finding was raised			
<b>Conclusion</b>	ESPL 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 2 <sup>nd</sup> 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

<b>Means of validation</b>	In according to VVS for PAs version 02.0 §§404, The assessment team reviewed the
----------------------------	--

<sup>2</sup> The condition in "TOOL02: Combined tool to identify the baseline scenario and demonstrate additionality" that all potential alternative scenarios to the proposed project activity must be available options to project participants; does not apply to this methodology, as this methodology only refers to some steps of this tool.

updated PDD/1.2/, 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. Where 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, the assessment team identified whether PP update such data and parameters in accordance with the Methodological Tool *“Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”*.

ESPL 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 NEWNE 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, *“The baseline scenario is that 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.”* The baseline for the Project remains the same as that in the revised 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 NEWNE 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 /3.2/
- Power Purchase Agreement with state electricity board /3.3/
- CEA guidelines (CO2 Baseline Database for the Indian Power Sector, Version 14.0) /3.1/

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 continued validity of the 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**

The CDM PS for PAs (version 02.0) requires assessing and incorporating the impact of new relevant 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. 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 Gujarat state are prevailing:

- The Electricity Act, 2003 /4.2/
- National Electricity Policy, 2005 /4.3/
- Tariff Policy, 2006 /4.4/

ESPL 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 Gujarat.

Based on the experience, there are no relevant mandatory national and/or sectoral policies 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. Hence, the same baseline as identified in the previous crediting period is still valid for the project.

Therefore, the assessment of the changes in market characteristics is not required for the renewal of the project's crediting period under CDM.

Furthermore, the assessment team has verified that the PP has considered the latest available CO<sub>2</sub> Baseline Database (CEA database, version 14)/3.1/ at the time of requesting renewal of the crediting period for establishing the baseline emission factor, which itself considered 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 scenarios.

**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 CEA emission factor calculated ex-ante for the 1<sup>st</sup> 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 2<sup>nd</sup> 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:**

ESPL 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 updated as per the latest version of CEA CO<sub>2</sub> baseline database available at the time of PDD submission for renewal. 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. ESPL considers the baseline scenario is realistic and credible.

In regard to requirement of VVS for PAs version 02.0.§§83, ESPL 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;

	<p>c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence, and can be deemed reasonable;</p> <p>d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;</p> <p>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.</p> <p><b>Step 2.2: Update the data and parameters</b>  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 properly updated considering the latest versions of methodology ACM0002 Version 20.0.</p>
<b>Findings</b>	CAR #2 was raised and resolved.
<b>Conclusion</b>	<p>ESPL 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.</p> <p>On the other hand, the baseline scenario for the project remains the same as that <i>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"</i>.</p> <p>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.</p> <p>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.</p>

#### D.4. Estimated emission reductions or net anthropogenic removals

<b>Means of validation</b>	<p>The calculation of the emissions reductions exactly follow the procedures described in the methodology ACM0002 version 20 and relevant tool, e.g. the "Tool to calculate the emission factor for an electricity system".</p> <p>ESPL 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.</p> <p>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.</p> <p>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.</p> <p>The algorithms for the determination of the baseline, project, and leakage are discussed in the following sections.</p> <p>The GHG emission reductions are calculated applying the updated version of methodology ACM0002 version 20</p> <p><b>Baseline Emissions:</b>  <i>As per the paragraph 39 of the methodology:</i>  "Baseline emissions include only CO<sub>2</sub> emissions from electricity generation in power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants". The baseline emissions are to be calculated as</p>
----------------------------	--

follows:

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

Where:

$BE_y$  = Baseline emissions in year y (t CO<sub>2</sub>)

$EG_{PJ,y}$  = 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)

$EG_{PJ,y} = EG_{PJ, facility,y}$  ( for Greenfield projects paragraph 41 ACM0002 Version 20 )

Where,

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

$EF_{grid,y}$  = Combined margin CO<sub>2</sub> emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO<sub>2</sub>/MWh)

The baseline emissions equivalent to tCO<sub>2</sub> 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'. 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 methodology ACM0002 version 20.0 §§ 19:

*"The Emission Factor shall be calculated in a transparent and conservative manner as follows:*

*"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'."*

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/. This CEA database version was published in December 2018 and it was the latest available version at the time of requesting renewal of the crediting period. This has been found to be 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 regional 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 database version 14 published on December 2018, which is published by the Ministry of Power, Government of India/3.1/.

As per the 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<sub>2</sub> Emission Factor if values are reliable and documented in regional or national energy statistics / energy balances". The CEA is 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
$EF_{grid, OM,y}$ Operating Margin CO <sub>2</sub> emission factor in year y	0.9610 tCO <sub>2</sub> /MWh	Baseline Carbon Dioxide Emission Database Version 14 from the Central Electricity Authority (CEA), Ministry of Power,	Verified value against default value listed in CEA database version 14 dated December 2018 /3.1/.

		Government of India /3.1/	
EF <sub>grid,BM,y</sub> Build Margin CO <sub>2</sub> emission factor in year y	0.8644 tCO <sub>2</sub> /MWh	Baseline Carbon Dioxide Emission Database Version 14 from the Central Electricity Authority (CEA), Ministry of Power, Government of India /3.1/	Verified value against default value listed in CEA database version 14 dated December 2018 /3.1/.
EF <sub>grid,y</sub> Combined margin CO <sub>2</sub> emission factor for the project electricity system.	0.9368 tCO <sub>2</sub> /MWh	Baseline Carbon Dioxide Emission Database Version 14 from the Central Electricity Authority (CEA), Ministry of Power, Government of India /3.1/	Verified value against default value listed in CEA database version 14 dated December 2018 /3.1/.

The OM has been determined as the average of the previous 3 years values (2015-16, 2016-17 and 2017-18) mentioned in the CEA database. The value of BM (for year 2017-18) has been identified 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 tool 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 §§ 42. The baseline emissions for the project activity have been calculated to be 326,203 tCO<sub>2</sub> per year.

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

**Estimation of Project Emissions (PE<sub>y</sub>):**  
The project involves wind technology which is a renewable energy source. Thus, as per §36 the ACM002 (version 20)/2.4/ there are no project related emissions associated with the current project.  
Thus, PE<sub>y</sub> = 0.

**Estimation of Leakage Emissions (LE<sub>y</sub>):**  
As per the section 5.6 of the applied methodology ACM0002 (version 20), no other leakage emissions are considered. Thus, the leakage is considered as zero.

**Emission reductions:**  
Emission reductions are calculated as follows:  

$$ER_y = BE_y - LE_y - PE_y,$$
where  

$$ER_y = \text{Emission reductions in year } y \text{ (tCO}_2\text{)}$$

$$BE_y = \text{Baseline Emissions in year } y \text{ (tCO}_2\text{)}$$

$$LE_y = \text{Project emissions in year } y \text{ (tCO}_2\text{)}$$

$$PE_y = \text{Leakage emissions in year } y \text{ (tCO}_2\text{)}$$

As discussed above PE<sub>y</sub>=0 and LE<sub>y</sub>=0 , hence  

$$ER_y = BE_y - 0 - 0$$

$$ER_y = BE_y$$

$$ER_y = EG_{PJ, facility, y} \times EF_{grid, y}$$

Value of EG<sub>PJ, facility, y</sub> is estimated to be 348,210 MWh per year ,which is same as in the registered PDD.Hence baseline emission reductions as follows:  

$$BE_y = 348,210 \text{ MWh} \times 0.9368 \text{ tCO}_2/\text{MWh}$$

$$= 326,203 \text{ tCO}_2$$

$$ER_y = BE_y = 326,203 \text{ tCO}_2 \text{ per year for the selected 7 years crediting period.}$$

	Total emission reductions during the Second crediting period are estimated to be 2,283,421 tCO <sub>2</sub> .
<b>Findings</b>	No non-conformity was observed in this regard. Therefore, no finding was raised
<b>Conclusion</b>	<p>ESPL 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.</p> <p>In general, ESPL is able to confirm the following:</p> <ul style="list-style-type: none"> <li>➤ All assumptions and data used by the project participants are listed in the PDD and/or supporting documents, including their references and sources;</li> <li>➤ All documentation used by the project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;</li> <li>➤ All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;</li> <li>➤ The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, and leakage emissions;</li> <li>➤ All estimates of the baseline, project and leakage emissions can be replicated using the data and parameter values provided in the PDD.</li> </ul> <p>ESPL 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.</p>

#### D.5. Validity of monitoring plan

<b>Means of validation</b>	<p>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.</p> <p>The project applies the approved consolidated monitoring methodology ACM0002 version 20 for grid-connected electricity generation from renewable sources.</p> <p>The monitoring parameter relevant to this project activity described in the applied methodology is:</p> $EG_{PJ, facility, y} = \text{Quantity of net electricity generation supplied by the project plant/unit to the grid in year } y \text{ (MWh)}$ <p>Since the WTGs of project activity and non-project WTGs are connected at 33/220 kV SEL pooling sub-station and 220 kV state utility substation (Common metering point), hence, in order to calculate the net electricity exported to the grid by the WTGs of the project activity, the state electricity utility uses an apportioning procedure that has been correctly described in section B.7.3 of the revised PDD/1.2/. The apportioning procedure is carried out by the state utility and the PP has no role in this calculation. It was confirmed from the representatives of the O&amp;M provider during the telephonic interview, that the procedure to derive the electricity exported to the grid by each project owner is completely under jurisdiction of the state utility.</p> <p>The registered monitoring plan as described in the revised PDD was implemented and followed during previous crediting period. This was checked from the verification records available on the UNFCCC webpage of this project/1.4/. Hence, it can be assured that the monitoring plan of the registered project is in accordance with the applied methodology.</p> <p>Compliance with the requirement of the methodology, for the parameter <math>EG_y</math> to be monitored ex-post during the 2<sup>nd</sup> crediting period is demonstrated in the table below:</p>
----------------------------	---

	Revised PDD Approved Methodology	Requirement in the applicable methodology and relevant EB documents	Requirement in the registered monitoring plan in the revised PDD	Opinion
	Data/Parameter	EG <sub>y</sub>	EG <sub>y</sub>	In compliance with the applicable methodology.
	Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh)	Certificate for share of electricity generated by the wind farm (MWh)	In compliance with the applicable methodology.
	Measured/Calculated /Default	Directly measured or calculated	Calculated	This parameter is calculated using the apportioning procedure as per the actual practice on site by the state utility (GETCO), which is governed by the PPA signed specifically for this project activity. This approach has been described in section B.7.3 of the revised PDD, hence accepted.
	Source of data	Not Specified	Monthly Break up sheets	This is as per the actual practice on site by the state utility, governed by the PPA signed for this project activity. Hence accepted.
	Monitoring equipment	Energy meters	Not Applicable since this is a calculated parameter	This parameter is calculated using the directly measured values of electricity exports and imports measured at 33 kV and 220 kV metering points. Hence accepted.
	Measuring/Reading/ Recording frequency	Hourly measurement and monthly Recording	Recording Frequency: Monthly	The Hourly measurement and monthly Recording is for the directly measured EG <sub>BL,y</sub> as per the applicable methodology. However this parameter is calculated as justified in the row "Measured/Calculated /Default" above, hence the monthly recording frequency is acceptable since it is as per the actual practice on site by the state utility. Hence accepted.
	Calculation method (if applicable)	Not Applicable	The calculation method is as per Section B.7.2 of the registered PDD.	This is as per the actual practice on site by the state utility. Hence accepted. The same formula is mentioned in the registered monitoring plan and PPA as well.
	QA/QC procedures	Measurement results shall be cross-checked with records for sold electricity.	The values EG <sub>y</sub> mentioned in the Breakup sheets will be cross-checked against values mentioned in the invoice	This is in compliance with the applicable methodology.



		raised on the state utility.	
<b>Parameter 2: Quantity of Electricity exported to GUVNL facility, <math>EG_{y,Export}</math></b>			
Revised PDD Approved Methodology	<b>Requirement in the applicable methodology and relevant EB documents</b>	<b>Requirement in the registered monitoring plan in the revised PDD</b>	<b>Opinion</b>
<b>Data/Parameter</b>	$EG_{y,export}$	$EG_{y,Export}$	In compliance with the applicable methodology.
<b>Description</b>	Quantity of Electricity exported to GUVNL facility (MWh)	Quantity of Electricity exported to GUVNL facility (MWh)	In compliance with the applicable methodology.
<b>Measured/Calculated /Default</b>	Directly measured or calculated	Calculated	This parameter is calculated using the apportioning procedure as per the actual practice on site by the state utility (GETCO), which is governed by the PPA signed specifically for this project activity. This approach has been described in section B.7.3 of the revised PDD, hence accepted.
<b>Source of data</b>	Not Specified	Monthly Break up sheets	This is as per the actual practice on site by the state utility, governed by the PPA signed for this project activity. Hence accepted.
<b>Monitoring equipment</b>	Energy meters	Not Applicable since this is a calculated parameter	This parameter is measured using the directly measured values of electricity exports measured at 33 kV and 220 kV metering points. Hence accepted.
<b>Measuring/Reading/ Recording frequency</b>	Hourly measurement and monthly Recording	Recording Frequency: Monthly	The Hourly measurement and monthly Recording is for the directly measured $EG_{BL,y}$ as per the applicable methodology. However this parameter is measured as justified in the row "Measured/Calculated /Default" above, hence the monthly recording frequency is acceptable since it is as per the actual practice on site by the state utility. Hence accepted.
<b>Calculation method (if applicable)</b>	Not Applicable	The calculation method is as per Section B.7.2 of the registered PDD.	This is as per the actual practice on site by the state utility. Hence accepted. The same formula is mentioned in the registered monitoring plan and PPA as well.
<b>QA/QC procedures</b>	Measurement results shall be cross-checked	The values $EG_{y,Export}$ mentioned in	This is in compliance with the applicable methodology.

		with records for sold electricity.	the Breakup sheets will be cross-checked against values mentioned in the invoice raised on the state utility.	
	<b>Parameter 3: Electricity generated by each WEG, <math>EG_{WEG}</math></b>			
	Revised PDD Approved Methodology	<b>Requirement in the applicable methodology and relevant EB documents</b>	<b>Requirement in the registered monitoring plan in the revised PDD</b>	<b>Opinion</b>
	<b>Data/Parameter</b>	$EG_{WEG}$	$EG_{WEG}$	In compliance with the applicable methodology.
	<b>Description</b>	Electricity generated by each WEG (MWh)	Electricity generated by each WEG (MWh)	In compliance with the applicable methodology.
	<b>Measured/Calculated /Default</b>	Directly measured or calculated	Calculated	This parameter is calculated using the apportioning procedure as per the actual practice on site by the state utility (GETCO), which is governed by the PPA signed specifically for this project activity. This approach has been described in section B.7.3 of the revised PDD, hence accepted.
	<b>Source of data</b>	Not Specified	Monthly Break up sheets	This is as per the actual practice on site by the state utility, governed by the PPA signed for this project activity. Hence accepted.
	<b>Monitoring equipment</b>	Energy meters	Not Applicable since this is a calculated parameter	This parameter is measured using the directly measured values of electricity generated by each WTG. Hence accepted.
	<b>Measuring/Reading/ Recording frequency</b>	Hourly measurement and monthly Recording	Recording Frequency: Monthly	The Hourly measurement and monthly Recording is for the directly measured $EG_{BL,y}$ as per the applicable methodology. However this parameter is measured as justified in the row "Measured/Calculated /Default" above, hence the monthly recording frequency is acceptable since it is as per the actual practice on site by the state utility. Hence accepted.
	<b>Calculation method applicable) (if</b>	Not Applicable	The calculation method is as per Section B.7.2 of the registered PDD.	This is as per the actual practice on site by the state utility. Hence accepted. The same formula is mentioned in the registered monitoring plan and PPA as well.

	<b>QA/QC procedures</b>	Measurement results shall be cross-checked with records for sold electricity.	The values $EG_{WEG}$ mentioned in the Breakup sheets will be cross-checked against values mentioned in the invoice raised on the state utility.	This is in compliance with the applicable methodology.
	<b>Parameter 4:</b> Electricity generation recorded at the Vacuum Circuit Breaker (VCB), $EG_{VCB}$			
	Revised PDD Approved Methodology	<b>Requirement in the applicable methodology and relevant EB documents</b>	<b>Requirement in the registered monitoring plan in the revised PDD</b>	<b>Opinion</b>
	<b>Data/Parameter</b>	$EG_{VCB}$	$EG_{VCB}$	In compliance with the applicable methodology.
	<b>Description</b>	Electricity generation recorded at the Vacuum Circuit Breaker (VCB) (MWh)	Electricity generation recorded at the Vacuum Circuit Breaker (VCB) (MWh)	In compliance with the applicable methodology.
	<b>Measured/Calculated /Default</b>	Directly measured or calculated	Calculated	This parameter is calculated using the apportioning procedure as per the actual practice on site by the state utility (GETCO), which is governed by the PPA signed specifically for this project activity. This approach has been described in section B.7.3 of the revised PDD, hence accepted.
	<b>Source of data</b>	Not Specified	Monthly Break up sheets	This is as per the actual practice on site by the state utility, governed by the PPA signed for this project activity. Hence accepted.
	<b>Monitoring equipment</b>	Energy meters	Not Applicable since this is a calculated parameter	This parameter is measured using the directly measured values of electricity generated by each WTG. Hence accepted.
	<b>Measuring/Reading/ Recording frequency</b>	Hourly measurement and monthly Recording	Recording Frequency: Monthly	The Hourly measurement and monthly Recording is for the directly measured $EG_{BL,y}$ as per the applicable methodology. However this parameter is measured as justified in the row "Measured/Calculated /Default" above, hence the monthly recording frequency is acceptable since it is as per the actual practice on site by the state utility. Hence accepted.

	<b>Calculation method applicable) (if</b>	Not Applicable	The calculation method is as per Section B.7.2 of the registered PDD.	This is as per the actual practice on site by the state utility. Hence accepted. The same formula is mentioned in the registered monitoring plan and PPA as well.
	<b>QA/QC procedures</b>	Measurement results shall be cross-checked with records for sold electricity.	The values EG <sub>WEG</sub> mentioned in the Breakup sheets will be cross-checked against values mentioned in the invoice raised on the state utility.	This is in compliance with the applicable methodology.
<p>All the relevant data records will be kept by the Project owner during the crediting period and two years after for DOE's verification. Data management and quality control measures have been confirmed through desk review of the project documents/1.2/ and interview with the PPs representatives. 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.</p> <p><b><u>Implementation of the monitoring plan:</u></b></p> <p>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.</p> <p>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 2<sup>nd</sup> crediting period.</p> <p>The assessment team is able to confirm that the proposed monitoring plan is feasible within the project design.</p>				
<b>Findings</b>	No non-conformity was observed in this regard. Therefore, no finding was raised			
<b>Conclusion</b>	<p>ESPL confirms that the monitoring plan contains all necessary parameters which have been clearly described in revised PDD /1.2/ and that the means of monitoring described in the plan complies with the requirements of the methodology.</p> <p>In conclusion, based on document review and stakeholder interview, together based on local and sectoral expertise, the assessment team confirms that:</p> <ul style="list-style-type: none"> <li>➤ The monitoring plan of the revised PDD is in compliance with the requirements of the methodology ACM0002 version 20.</li> <li>➤ Monitoring arrangements described in the monitoring plan of the revised PDD are feasible within the project design.</li> <li>➤ 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 version 4.</li> </ul> <p>ESPL 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.</p>			

**D.6. Crediting period**

<b>Means of validation</b>	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 18/06/2009 to 17/06/2016; the Project Participant is applying for a 2 <sup>nd</sup> renewable crediting period, which is 7 years (18/06/2016 – 17/06/2023).
<b>Findings</b>	No non-conformability was observed during assessment for validation of crediting period. Therefore, no finding was raised.
<b>Conclusion</b>	ESPL 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**

<b>Means of validation</b>	The assessment team checked whether the names of the project participants 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 BLP Vayu (Project 1) 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.
<b>Findings</b>	No non-conformability was observed during assessment of details of Project Participant. Therefore, no finding was raised.
<b>Conclusion</b>	ESPL 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 <sup>3</sup>	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 methodological regulatory documents	N	N/A	N/A
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**

&gt;&gt;

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.

<sup>3</sup> 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).

**SECTION F. Validation opinion**

&gt;&gt;

Earthood Services Private Limited (ESPL) has performed a validation of renewal of crediting period of the **“150 MW grid connected Wind Power based Electricity generation project in Gujarat, India” (Ref. No. 2347)**. 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 programme of activity.

The final validation opinion was finalized in accordance with the CDM VVS for PAs version 02.0/2.1/ and the CDM PS for PAs version 02.0/2.2/ 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 ESPL 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 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 20.0/2.4/.

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 ESPL opinion that the Coordinating/managing entity are able to implement the monitoring plan and the emission reductions achieved can be reported ex-post for verification.

In summary, it is ESPL opinion that the programme of activity **“150 MW grid connected Wind Power based Electricity generation project in Gujarat, India” (Ref. No. 2347)**, as described in the PDD, version 5 dated 22/10/2019, meets all relevant UNFCCC requirements for the renewal of the crediting period. Hence ESPL submitted the request for renewal of the crediting period of the programme of activity.

## Appendix 1. Abbreviations

Abbreviations	Full texts
ABT	Availability Based Tariff
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PAs	Clean Development Mechanism Pproject Activities
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
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GETCO	Gujarat Energy Transmission Corporation
GOI	Government of India
IPCC	Intergovernmental Panel on Climate Change
JMR	Joint Meter Reading
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
RCP	Renewal Crediting Period
RMP	Revised Monitoring Plan
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

## Appendix 2. Competence of team members and technical reviewers

Competence Statement			
<b>Name</b>	Vivek Kumar Ahirwar		
<b>Country</b>	India		
<b>Education</b>	B.E. (Mechanical Engineering) M.Tech (Energy Management)		
<b>Experience</b>	10 Years +		
<b>Field</b>	Climate Change & Environment		
Approved Roles			
<b>Team Leader</b>	YES		
<b>Validator</b>	YES		
<b>Verifier</b>	YES		
<b>Methodology Expert</b>	ACM0002, AMS.I.D		
<b>Local expert</b>	YES (India)		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	NO		
<b>TA Expert</b>	YES (1.1, 1.2, 13.1)		
<b>Reviewed by</b>	Shreya Garg	<b>Date</b>	11/09/2018
<b>Approved by</b>	Anshika Gupta	<b>Date</b>	11/09/2018

Competence Statement			
<b>Name</b>	Ashok Gautam		
<b>Country</b>	India		
<b>Education</b>	M. Sc. (Environmental Sciences) M. Tech. (Energy & Environmental Management)		
<b>Experience</b>	16 Years +		
<b>Field</b>	Energy, Climate Change & Environment		
Approved Roles			
<b>Team Leader</b>	YES		
<b>Validator</b>	YES		
<b>Verifier</b>	YES		
<b>Methodology Expert</b>	AMS-I.D., AMS-I.A., AMS-I.C., AMS-I.E, AMS-II.D., AMS-II.G., AMS-III.E., AMS-III.H., AMS-III.Q, AMS-III.Z., AMS-III.AV., AM0029, AM0025, AM0056, ACM0001, ACM0002, ACM0004, ACM0012, ACM0006, AM0018, ACM0009		
<b>Local expert</b>	YES (India)		
<b>Financial Expert</b>	NO		
<b>Technical Reviewer</b>	YES		
<b>TA Expert</b>	YES (TA 1.1, TA 1.2, TA 3.1, TA 13.1)		
<b>Reviewed by</b>	Abhishek Mahawar	<b>Date</b>	01/03/2018
<b>Approved by</b>	Kaviraj Singh	<b>Date</b>	01/03/2018



### Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	<b>Basic Documents (Monitoring Report, Project Design Documents, Previous Verification Reports)</b>			
1.1	PP	Registered PDD Version 4	Dated 07/12/2012	PP
1.2	PP	Revised PDD, version 01	Dated 03/10/2019	PP
		Revised PDD, version 5 (Final)	Dated 22/10/2019	
1.3	TUV Nord	Validation Report of the registered CDM project activity	Dated 30/01/2013	Other: UNFCCC
1.4	UNFCCC	CDM Project activity view page "150 MW grid connected Wind Power based Electricity generation project in Gujarat, India" <a href="https://cdm.unfccc.int/Projects/DB/BVQI1229917560.71/view">https://cdm.unfccc.int/Projects/DB/BVQI1229917560.71/view</a>	-	Other: UNFCCC
1.5	TUV Nord CERT GmbH	Verification report for seven monitoring period (01/07/2014 – 17/06/2016), Version 02.1	Dated 07/08/2017	Other: UNFCCC
2.	<b>References and requirements at UNFCCC/IPCC/etc.</b>			
2.1	UNFCCC website	Clean Development Mechanism Validation and Verification Standard for Programme of activity (CDM-VVS for PAs), version 02.0 as per EB 101, Annex 2	Dated 29/11/2018	Other: UNFCCC
2.2	UNFCCC website	CDM Project Standard for Programme of activity (CDM-PS for PAs), version 02.0 as per EB 101, Annex 1	Dated 29/11/2018	Other: UNFCCC
2.3	UNFCCC website	CDM Project Cycle Procedure for Programme of activity (CDM-PCP for PAs), version 02.0 as per EB 101, Annex 16	Dated 29/11/2018	Other: UNFCCC
2.4	UNFCCC website	Applied Methodology, ACM0002 Version 20: Grid-connected electricity generation from renewable sources	Dated 28/11/2019	Other: UNFCCC
2.5	CDM EB	PDD template form	Version 11	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
3.	<b>Project implementation information</b>			
3.1	CEA	CEA CO <sub>2</sub> Baseline Database for the Indian Power Sector Version 14	December 2018	Other
3.2	PP	Commissioning certificates of WTGs		PP
3.3	PP	Power Purchase Agreements signed between Project Proponent and state electricity authority	25/03/2013	PP
4.	<b>Others</b>			
4.1	CEA	Central Electricity Authority (Installation and Operation of Meters) Regulations - Notified on 17/03/2006 No.502/70/CEA/DP&D - Amendments Notified on 26/06/2010 No.502/6/2009/DP&D/D-I ( <a href="http://www.cea.nic.in/reports/regulation/meter_reg.pdf">http://www.cea.nic.in/reports/regulation/meter_reg.pdf</a> )	17/03/2006	Other: CEA
4.2	Ministry of Power, GOI	The Electricity Act, 2003 ( <a href="http://www.cercind.gov.in/Act-with-amendment.pdf">http://www.cercind.gov.in/Act-with-amendment.pdf</a> )	Dated 26/05/2003	Other

**CDM-RCPV-FORM**

4.3	Ministry of Power, GOI	National Electricity Policy,2005 ( <a href="https://powermin.nic.in/en/content/national-electricity-policy">https://powermin.nic.in/en/content/national-electricity-policy</a> )	Dated 12/02/2005	Other
4.4	Ministry of Power, GOI	Tariff Policy, 2006 <a href="http://www.oriarc.org/documents/National%20Electricity%20Tariff%20Policy.pdf">http://www.oriarc.org/documents/National%20Electricity%20Tariff%20Policy.pdf</a>	January 2006	Other

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

Table 1. CL from this validation

CL ID	01	Section no.	Front Page	Date	:19/10/2019
<b>Description of CL</b>					
Please clarify why the version of DD is not followed by the previously approved version.					
<b>Project participant response</b>					<b>Date</b> :22/10/2019
PP has revised renewal PDD version to follow the sequential order for reporting the version of PDD with respect to the registered PDD version 4, dated:07/12/2012.					
<b>Documentation provided by project participant</b>					
<i>Revised Renewal PDD Version 5 in track change and clean mode.</i>					
<b>DOE assessment</b>					<b>Date</b> :23/10/2019
Assessment team confirm that revised PDD version 5 submitted by PP inline with requirement. Hence accepted.					
CL#1 Closed					

Table 2. CAR from this validation

CAR ID	01	Section no.	PD	Date	:19/10/2019
<b>Description of CAR</b>					
PP should demonstrate changes in track change from already registered PDD.					
<b>Project participant response</b>					<b>Date</b> :22/10/2019
<i>PP is submitting the renewal PDD in track change mode from already registered PDD which provides all the changes highlighted transparently. However, PP hereby confirms that there is no major change in project activity other than routine maintenance since commissioning of the project activity.</i>					
<b>Documentation provided by project participant</b>					
<i>Revised Renewal PDD Version 5 in track change and clean mode.</i>					
<b>DOE assessment</b>					<b>Date</b> : 23/10/2019
Assessment team confirm that revised PDD version 5 submitted by PP inline with requirement. Hence accepted.					
CAR#1 Closed					

CAR ID	02	Section no.	PD	Date	:19/10/2019
<b>Description of CAR</b>					
PP is requested to correct the registered PDD date in section B.5 of the PDD.					
<b>Project participant response</b>					<b>Date</b> : 22/10/2019
<i>PP has revised the renewal PDD section B.5 to correctly report the registered PDD version 4 dated 07/12/2012.</i>					
<b>Documentation provided by project participant</b>					
<i>Revised Renewal PDD Version 5 in track change and clean mode.</i>					
<b>DOE assessment</b>					<b>Date</b> : 23/10/2019
Assessment team confirm that in revised PDD version 5, PP has corrected registered PDD version. Hence accepted.					
CAR#2 Closed					

Table 3. FAR from this validation

<b>FAR ID</b>	xx	<b>Section no.</b>		<b>Date:</b> DD/MM/YYYY
<b>Description of FAR</b>				
NA				
<b>Project participant response</b>				<b>Date:</b> DD/MM/YYYY
NA				
<b>Documentation provided by project participant</b>				
NA				
<b>DOE assessment</b>				<b>Date:</b> DD/MM/YYYY
NA				

- - - - -

**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"><li>• 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);</li><li>• Make editorial improvements.</li></ul>
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		