




**Validation report form for renewal of CDM programme of activities period
(Version 02.0)**

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION

Title and UNFCCC reference number of the programme of activities (PoA)	Promotion of renewable energy generation in India- Programme of Activities (UNFCCC reference number: PoA 9416) ¹
Number and duration of the next period	2 nd renewal crediting period : (31/12/2019 to 30/12/2026)
Version number of the validation report	01
Completion date of the validation report	14/07/2020
Version number of PoA-DD to which this report applies	05
Coordinating/managing entity (CME)	General Carbon Advisory Services Pvt. Ltd
Host Parties	India
Applied methodologies and standardized baselines	Methodology: ACM0002, Grid-connected electricity generation from renewable sources, version 20.0 ² Standardized Baseline: Not Applicable
Mandatory sectoral scopes	01
Conditional sectoral scopes, if applicable	NA
Estimated amount of annual average GHG emission reductions or GHG removals by sinks in the next programme of activities period	94,113 tCO _{2e}
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: 

¹ https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/H8ZL9NPDCF0B76JQM5XVTGKI1YU4AO/view

² <https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

SECTION A. Executive summary

1. General operating and implementing framework of PoA:

Promotion of renewable energy generation in India- Programme of Activities (REG-PoA) will support the development of renewable energy plants in India and delivering energy to the Indian grids. Each CPA under this REG PoA will comprise one or more renewable energy plants (i.e. either wind or solar)³. REG-PoA is a voluntary action being coordinated and managed by General Carbon Advisory Services Pvt. Ltd. (referred as GC further in this document), the coordinating / managing entity (CME). GC will work with other organizations such as project developers, banks and financial institutes in renewable energy sector lending, policy makers etc. to facilitate the development of new renewable energy power plants and their inclusion in the REG-PoA.

2. Policy/measure or stated goal of the PoA

Indian power demand is increasing and so is the power generation capacity addition. However, the share of renewable energy sources in the total installed capacity as on March 2020 was 36.2%⁴. The Indian Government and state Governments have announced many policies for the development of renewable energy. However, the capacity development is limited due to higher capital costs, lower plant load factors etc. Thus, CME has started a PoA to facilitate promotion of renewable energy generation.

The goal of the PoA is to facilitate the installation of renewable technologies (hereafter “RE”) constituting of solar energy technologies (consisting of Solar PV/Solar thermal Technology) and off-shore wind energy technologies to generate electricity from renewable energy sources by providing access to carbon finance. The electricity generated by these projects will replace the equivalent amount of electricity generated by the operation of existing/ grid connected carbon emissive power plants (mostly fossil fuel based power plants) and by addition of new generation sources into the grid.

The PoA thus reduces the anthropogenic emissions of greenhouse gases (GHGs) in to the atmosphere associated with the equivalent amount of electricity generation from the existing grid connected power plants (mostly fossil fuel) and by addition of new generation sources into the grid.

Validation Scope: The scope is defined as an independent and objective review of the programme of activities –design document (POA-DD). The POA-DD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology ACM0002 version 20. The validation was based on the requirements in the CDM validation and verification standard for program of activities, version 02.

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

Validation Process: The project assessment is based on the “CDM validation and verification standard for program of activities, version 02 and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the CDM programme of activities are appointed.

Following activities were performed by the Validation team member once initial PoA-DD (Version 04) is available:

- I A desk review of the programme of activities –design document (POA-DD)
- II Follow-up interviews with project stakeholders;
- III The resolution of outstanding issues and the issuance of the final validation report and opinion.

The prepared validation report and other supporting documents then undergo an internal quality control at the HQ (Accredited office) before being submitted to the CDM-EB.

³ Each CPA will have either wind or solar energy projects

⁴ <https://mercomindia.com/solar-share-india-installed-power-capacity-mix/>

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. Applus+ Certification has developed a specific Checklist customized for the programme of activities. The checklist demonstrates, in a transparent manner, the programme of activities criteria (requirements), discussion on each criterion by the assessment team, and the results from validating the identified criteria.

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed a programme of activities 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 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	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Sukanta Das	LA/TE	YES	YES	YES	YES
Mr. Simon Shen	TR	YES	YES	YES	NA

The complete list of CVs is included as Appendix 2 of this report.

Document review

The POA-DD by the Client 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 like 3rd party Government documents has been done. A complete list of all documents and evidence material reviewed is included in Appendix 3 of this report.

Follow-up interviews

Applus+ Certification performed interviews, telephone conferences, with stakeholders to confirm selected information and to resolve issues identified in the document review. The detail is provided in section C.2 and C.3 of this report.

Resolution of Clarification and Corrective Action Request

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ Certification positive conclusion on the PoA-DD. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the validation process, the concerns raised and responses given are summarized in Appendix 4 below.

The final PoA-DD version 05 submitted by PP on 03/07/2020 serves as the basis for the final assessment presented. Additional changes to the PoA-DD during the validation process are not considered to be significant with respect to the main CDM objectives. The two CDM main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Internal quality control

As final step of a validation of the final documentation including the validation report 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 to avoid any conflict of interest.

After confirmation of the PP the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.

Conclusion

Applus+ Certification has performed a validation of the "Promotion of renewable energy generation in India- Programme of Activities". The renewable validation was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria, e.g. ACM 0002 version 20, given to provide for consistent project operations, monitoring and reporting.

The review of the renewal of programme of activities period and the subsequent follow-up interviews have provided Applus+ Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the PoA-DD meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The PoA-DD will hence be recommended by Applus+ Certification for renewal registration with the UNFCCC.

Applus+ Certification has checked the confirmation (obtained in 1st CP) from the host Party that the programme of activities assists it in achieving sustainable development.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the POA-DD results in reductions of CO_{2e} emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An analysis of the positive list of renewable project demonstrates that the proposed programme of activities is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the programme of activities. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of annual average emission reductions of 94,113 tCO_{2e}.

The validation has been performed following the requirements of the latest version of the CDM validation and verification standard for programme of activities, version 02 and on the basis of the contractual agreement. The single purpose of this report is its use during the renewal registration process as part of the CDM/UNFCCC project cycle.

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	DAS	SUKANTA	True Quality Certifications Private Limited- Outsourced entity	YES	NO	YES	YES

B.2. Technical reviewer and approver of the validation report for renewal of PoA period

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

SECTION C. Means of validation

C.1. Desk/document review

The details of the document observed during desk review /validation process are listed below in Appendix 3 of this report.

C.2. On-site inspection

As per the requirement of Para 183 of CDM validation and verification standard for programme of activities, version 02 , Para (a) since the emission reduction estimated is less than 100,000 tCO_{2eq} , assessment team didn't conducted site visit for 2nd renewal of registered POA (UNFCCC reference number:9416). To validate the POA design, eligibility criteria CPA to be included, monitoring & management practices as mentioned in the PoA-DD; assessment team has conducted telephonic interviews with CME. After telephonic interviews with concerned CME person; assessment team concluded that the design PoA is same as envisaged in 1st CP. There is no change in the eligibility of PoA design or operation and monitoring practices as mentioned in the registered PoA-DD of 1st CP which can alter the applicability or additionality of the programme of activities/methodology applied i.e. ACM 0002 version 20. Assessment team therefore of the opinion that project will be implemented as described in the registered PoA- DD for 1st crediting period and no change is envisaged for the proposed 2nd renewal crediting period.

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

C.3. Interviews

No	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Joshi	Rohit ⁵	CME representative	12/05/2020	POA design, monitoring & management practices of the PoA DD, eligibility criteria CPA to be included etc	Mr. Sukanta Das

C.4. Sampling approach

The assessment team did not apply any sampling approach for the PoA-DD assessment.

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
Programme of activities			
Compliance with PoA-DD form	00	00	00
Programme of activities period	00	00	00
Coordinating/managing entity and the project participants	00	00	00
Post-registration changes	00	00	00
Generic component project activities			
Application and selection of methodologies and standardized baselines	00	01	00
Validity of original baseline or its update	00	01	00
Estimated emission reductions or net anthropogenic removals	00	01	00

⁵ Telephonic Interview only.

Validity of monitoring plan	00	01	00
Eligibility criteria for inclusion of CPAs	00	01	00
Others (please specify)	00	00	00
Total	00	05	00

SECTION D. Validation findings

D.1. Programme of activities

D.1.1. Compliance with PoA-DD form

Means of validation	Assessment team checked the PoA DD version 09.0 form supplied by the project participant and found that the latest form applicable in the UNFCCC web site is used for the presentation of the PoA DD.
Findings	No findings raised for the section
Conclusion	<p>The information transferred to the version 09 of the PoA-DD form is materially the same as that in the registered PoA-DD of 1st crediting period. All CPAs under the PoA will be either Solar PV or Offshore wind turbine (Only green field projects) with an installed capacity above 15 MW. The electricity generated by the CPA's included in the PoA will replace/ displace the equivalent amount of electricity generated by the operation of existing/ grid connected power plants (mostly fossil fuel based power plants) and by addition of new generation sources into the grid. The PoA thus reduces the anthropogenic emissions of greenhouse gases (GHGs) in to the atmosphere associated with the equivalent amount of electricity generation from the existing grid connected power plants (mostly fossil fuel) and by addition of new generation sources into the grid.</p> <p>The proposed PoA is a Sectoral scope 1 programme (Energy industries, renewable - / non- renewable sources).</p>

D.1.2. Programme of activities period

Means of validation	<p>Assessment team checked the PoA DD version 09.0 form supplied by the project participant and found that the period as mentioned in the 2nd renewal CP is correct.</p> <p>The crediting period is checked as per UN home page (reference number: 9416) and discussion with Client.</p>
Findings	No findings raised for the section
Conclusion	This is 2 nd renewable crediting period and the duration is 7-year renewable (31/12/2019 to 30/12/2026)

D.1.3. Coordinating/managing entity and the project participants

Means of validation	The CME and PP names were checked from UN homepage https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/H8ZL9NPDCF0B76JQM5XV_TGKI1YU4AO/view		
Findings	No findings raised for the section		
Conclusion	<table border="1"> <tr> <td>Coordinating/Managing Entity</td><td>General Carbon Advisory Services Pvt. Ltd. (a private entity)</td></tr> </table> <p>No change is envisaged from 2nd CP as the CME is same as in 1st CP and registered PoA.</p> <p>Assessment team also confirmed that the PP name is correct as mentioned in the 1st CP. The detail are as below:</p>	Coordinating/Managing Entity	General Carbon Advisory Services Pvt. Ltd. (a private entity)
Coordinating/Managing Entity	General Carbon Advisory Services Pvt. Ltd. (a private entity)		

	Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
	India (host)	General Carbon Advisory Services Pvt. Ltd. (a private entity)	No

D.1.4. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Corrections	N	NA	NA
Inclusion of monitoring plan	N	NA	NA
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents	N	NA	NA
Changes to the programme design	N	NA	NA
Addition of CPA inclusion template	N	NA	NA
Changes specific to afforestation and reforestation activities	N	NA	NA
Change of coordinating/managing entity	N	NA	NA

D.2. Generic component project activities

D.2.1. Application and selection of methodologies and standardized baselines

Means of validation	<p>The assessment team has validated the documentation referred to in the revised PoA-DD for renewable of crediting period and verified the documentation content for verifying the justification of the applicability of the methodology ACM 0002 version 20 and confirmed that the documentation referred to in the PoA-DD is correctly quoted and interpreted.</p> <p>Moreover, assessment team have the applied following alternate route to confirm the detail as mentioned in the PoA-DD applied for renewable.</p> <p>- Interview with the concerned person(CME) mentioned in this report</p> <p>The assessment of the PoA's compliance with the applicability criteria of ACM 0002 version 20 are documented in detail in section I.1 of the PoA DD</p>					
Findings	CAR 01 was raised during the validation process and closed successfully. Please refer Appendix 4 for the closure of the CAR					
Conclusion	<p>The applied baseline methodology is justified as it has been demonstrated that the proposed programme of activities:</p> <table><tr><td>Applicability of methodologies and standardized baselines. The applicability criteria of ACM 0002 version 20 are the following:</td><td>Methodology ACM 0002 version 20 is applicable to a generic CPA under the proposed PoA because:</td></tr><tr><td>This methodology is applicable to grid-connected renewable 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;</td><td>Assessment team during the telephonic interview and document verification checked that the CPAs will consist of grid connected renewable (wind or solar) power generation activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant). All</td></tr></table>		Applicability of methodologies and standardized baselines. The applicability criteria of ACM 0002 version 20 are the following:	Methodology ACM 0002 version 20 is applicable to a generic CPA under the proposed PoA because:	This methodology is applicable to grid-connected renewable 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;	Assessment team during the telephonic interview and document verification checked that the CPAs will consist of grid connected renewable (wind or solar) power generation activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant). All
Applicability of methodologies and standardized baselines. The applicability criteria of ACM 0002 version 20 are the following:	Methodology ACM 0002 version 20 is applicable to a generic CPA under the proposed PoA because:					
This methodology is applicable to grid-connected renewable 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;	Assessment team during the telephonic interview and document verification checked that the CPAs will consist of grid connected renewable (wind or solar) power generation activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant). All					

	<p>(d) 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>	<p>CPA which will be included under this POA should meet point (a) of the methodology applicability.</p> <p>As per the registered POA-DD (1st CP), the CPAs and during renewal of the POA-DD assessment team observed that POA will not consist of any project that (b) involve capacity addition; or (c) retrofit of (an) existing plant(s); or (d) involving replacement of existing plant(s).</p>
	<p>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>Assessment team checked and confirm that at this stage of Validation the CPAs will consist of installation of either wind or solar power projects in each CPA under this POA-DD. All CPA which will be included under this POA should meet this creteria.</p>
	<p>In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant 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 addition, rehabilitation or retrofit 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>All the future CPAs will consist of only Greenfield projects. Hence capacity additions, retrofits, rehabilitations or replacements is not applicable creteria for the future CPA under this POA-DD. The said applicability creteria is thus not applicable for the renewal of the POA</p>
	<p>In case of hydro power plants: At least one of the following conditions shall apply:</p> <p>The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or</p> <p>The project activity is implemented in an existing single or multiple reservoirs, where the volume of the reservoirs is increased and the power density, calculated using equation (7), is greater than 4 W/m²; or</p> <p>The project activity results in new single or multiple reservoirs and the power density calculated using equation (7), is greater than 4 W/m²; or</p> <p>The project activity is an integrated</p>	<p>All the future CPA under this POA-DD will either be Solar technology or Wind technology. The said applicability creteria is thus not applicable for the renewal of the POA</p>

	<p>hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (7), is lower than or equal to 4 W/m², all of the following conditions shall apply:</p> <p>The power density calculated using the total installed capacity of the integrated project, as per equation (8), is greater than 4 W/m² ;</p> <p>Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity;</p> <p>Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be:</p> <p>Lower than or equal to 15 MW; and</p> <p>Less than 10 per cent of the total installed capacity of integrated hydro power project.</p>	
	<p>In the case of integrated hydro power projects, project proponent shall:</p> <p>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>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.</p> <p>The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum of five years prior to the implementation of the CDM project activity.</p>	<p>. All the future CPA under this POA-DD will either be Solar technology or Wind technology. The said applicability criteria is thus not applicable for the renewal of the POA</p>
	<p>The methodology is not applicable to the following:</p> <p>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</p>	<p>All the future CPA under this POA-DD will either be Solar technology or Wind technology. The said applicability criteria is thus not applicable for the renewal of the POA</p>

	site; Biomass fired power plants/units	
	In the case of retrofits, 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, i.e. 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”.	All the future CPAs will consist of only Greenfield projects. Hence capacity additions, retrofits, rehabilitations or replacements is not applicable criteria for the future CPA under this POA-DD. The said applicability criteria is thus not applicable for the renewal of the POA
	Tool to calculate the emission factor for an electricity system ⁶ - Version 07.0 (EB 100, Annex 04)	
	Applicability Criterion (with Para number reference)	Project Case
	This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).	Each CPA will be a grid connected Greenfield wind or solar power projects and thus the tool is applicable.
	Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option IIa and option IIb. If option IIa is chosen, the conditions specified in “Appendix 2: Procedures related to off-grid power generation” should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	Emission reduction calculation step involved is detailed in section I.6.1 of the POA-DD. The same is checked and found correct by the assessment team.

⁶ <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

	In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country	Project is located in Non-Annex country i.e. India. Hence this criteria is not applicable.
	Under this tool, the value applied to the CO ₂ emission factor of biofuels is zero.	All the future CPA under this POA-DD will either be Solar technology or Wind technology. The said applicability criteria is thus not applicable for the renewal of the POA

D.2.2. Validity of original baseline or its update

Means of validation	The baseline scenario as depicted in the PoA-DD version 02 is confirmed from the interview with the CME.
Findings	CAR 02 was raised during the validation process and closed successfully. Please refer Appendix 4 for the closure of the CAR.
Conclusion	<p>Assessment team referred "Methodological tool (EB 66, Annex 47) "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)" and CDM validation and verification standard for program activities, version 02" to check the originality of the baseline. Following are the observation of the assessment team regarding selected baseline for the programme of activities in this present 2nd renewable crediting period:</p> <p><u>Step 1.1 (EB 66, Annex 47): Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies</u></p> <p>As the proposed activity CPA (for offshore Wind turbine) and CPA (for Solar PV/Solar Thermal) is a Greenfield activity and in the absence of the programme of activities (the current baseline) the electricity delivered to the grid by the programme of activities would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources in the grid. The baseline meets all current national and sectoral policies. The relevant national laws and regulations pertaining to generation of energy are:</p> <ul style="list-style-type: none"> ➤ Electricity Act 2003 ➤ National Electricity Policy ➤ Tariff Policy <p>The above mentioned Acts or policies do not mandate the choice of fuel to be used for power project. Power generation using renewable energy is not a mandatory legal requirement in India.</p> <p><u>Step 1.2 (EB 66, Annex 47) : Assess the impact of circumstances</u></p> <p>Assessment team checked that on 31/12/2013, with the integration of Southern Region to Central Grid in Synchronous mode, India achieved "One Nation-One Grid-One Frequency" for India. India has now one national grid for the whole country and there are no separate regional grids exist. This will have no impact on baseline emissions as national grid emission factor will be considered for any new CPA inclusion in PoA or at the time of renewal of existing CPAs. Hence conditions used to determine baseline emissions are still valid. There is no impact of circumstances on the original baseline.</p> <p>The updated emission factor for the national grid in the country will be used based on the database published by Central Electricity Authority (CEA), Government of India. The latest version of emission factor that will be available at the time of inclusion of CPA (for offshore Wind turbine) and CPA (for Solar PV/Solar Thermal) will be applied to calculate the baseline emissions for the programme of activities, CPA (for offshore Wind turbine) and CPA (for Solar PV/Solar Thermal).</p>

There are no new circumstances that can impact the original baseline. The baseline emission factor value is however updated based on the current data available for the Indian National grid.

Step 1.3 (EB 66, Annex 47): Assess whether the continuation of the use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested

Assessment team confirm that this PoA was a voluntary investment which intends to replace equivalent amount of electricity at grid from renewable source. The baseline scenario identified at the validation of the CDM PoA was the electricity delivered to the grid by the PoA, 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 CME was not bound to incur this investment; hence absence of programme of activities (i.e. the investment) does not lead to any continued baseline practice for CME within their scope whereas the continued operation of the programme of activities 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.

Step 1.4 (EB 66, Annex 47): Assessment of the validity of the data and parameters

This step stipulates that "Where emission factors, values or emission benchmarks are used and determined only once for the crediting period, they should be updated, except if the emission factors, values or emission benchmarks are based on the historical situation at the site of the programme of activities prior to the implementation of the project and cannot be updated because the historical situation does not exist anymore as a result of the CDM PoA."

In addition, as described in the PoA-DD, the baseline emission of the project is the electricity generated by the project multiplied by the emission coefficient which is reflected in the combined margin (CM), i.e. the weighted average of the operating margin (OM) emission factor and the build margin (BM) emission factor as per the "Tool to calculate the emission factor for an electricity system" version 7, which is in line with the applied methodology ACM 0002 version 20. Accordingly the Emission Factor can be calculated in a transparent and conservative manner as follows:

- a) 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'.

OR

- b) The weighted average emissions (in t CO₂e/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.

CPA will opt option "a)" and adopts the ex-ante calculation of emission factor of the grid. The combined margin emission factor have to be calculated at CPA level for the National grid of India. This has been calculated using the source from the Central Electricity Authority CO₂ Baseline Database. Central electricity Authority (CEA) (under Ministry of Power, Government of India) have worked out baseline emission factor for national grids in India and made them publicly available. The DNA of the host party (India) has also given a reference link of the CEA on their official website. Latest data at the time of CPA inclusion has to be taken of CEA or any other official source made available by the host party. Validation team has checked the calculation of the combined margin grid emission factor and confirmed that the applied value of the emission factor follows the tool and the values of OM and BM incorporated in the CPA will be taken from publically available database i.e. by CEA (Govt of India)

	<p>Application of Steps 1.1, 1.2, 1.3 and 1.4 confirmed that the current baseline is valid for the Second crediting period but data and parameters needs to be updated. Therefore step 2 is used</p> <p>Step 2.1: Update the current baseline</p> <p>As evident from the explanation provided above the baseline scenario remains unchanged.</p> <p>Updated the baseline emissions based on the latest approved version of the methodology applicable to the programme of activities for the subsequent crediting period, without reassessing the baseline scenario.</p> <p>Step 2.2: Update the data and parameters</p> <p>The updated Data and/or parameter are followed for estimating the baseline emissions</p> <p>Hence as per ACM 0002 version 20 (latest Methodology), the baseline of the project is as follows:</p> <p><i>"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."</i></p> <p>The above selected baseline is correct and thus applicable to the programme of activities and in line with approved methodology for the applied renewable of crediting period.</p>
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D.2.3. Estimated emission reductions or net anthropogenic removals

Means of validation	The emission reduction sheet version 01 dated 03/07/2020, Tool to calculate the emission reduction version 07, and PoA-DD version 05 is checked by the assessment team.									
Findings	CAR 03 was raised during the validation process and closed successfully.									
Conclusion	<p>As per ACM 0002 version 20:</p> <p>The baseline emissions for both Solar PV and Offshore wind turbines are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor:</p> $BE_y = EG_{PJ,y} * EF_{grid,y} = EF_{grid,CM,y}$ <p>Where:</p> <p>BE_y = Baseline Emissions in year y; t CO₂</p> <p>$EG_{PJ,y}$= Quantity of net electricity supplied to the grid as a result of the implementation of the CDM programme of activities in year y(MWh)</p> <p>$EF_{grid,y}$ =$EF_{grid,CM,y}$= CO₂ emission factor of the grid in year y (t CO₂/MWh)</p> <table><tr><th>Parameter</th><th>Description</th><th>Source</th></tr><tr><td>BE_y</td><td>Baseline Emissions in year y for both offshore Wind and Solar PV; t CO₂</td><td>Calculated</td></tr><tr><td>$EG_{PJ,y}$</td><td>Quantity of net electricity supplied to the grid as a result of the implementation of the CPA [CPA name](for both Solar and Wind) in year y in MWh</td><td>Calculated as Installed Capacity × PLF× Operating Hours The PLF of</td></tr></table>	Parameter	Description	Source	BE_y	Baseline Emissions in year y for both offshore Wind and Solar PV; t CO ₂	Calculated	$EG_{PJ,y}$	Quantity of net electricity supplied to the grid as a result of the implementation of the CPA [CPA name](for both Solar and Wind) in year y in MWh	Calculated as Installed Capacity × PLF× Operating Hours The PLF of
Parameter	Description	Source								
BE_y	Baseline Emissions in year y for both offshore Wind and Solar PV; t CO ₂	Calculated								
$EG_{PJ,y}$	Quantity of net electricity supplied to the grid as a result of the implementation of the CPA [CPA name](for both Solar and Wind) in year y in MWh	Calculated as Installed Capacity × PLF× Operating Hours The PLF of								

			[PLF]; considered for the determination of ex-ante emission reductions.		
EF _{grid,y} =EF _{grid,CM,y}	CO ₂ Emission Factor for both offshore wind and Solar PV in year y; t CO ₂ e/MWh of [National grid]		The emission factor as reported by Central Electricity Authority (CEA) CO ₂ database or any other official source made available by the host party.		
	Parameter	Description		Unit	Source
	EF _{grid, CM, y} = EF _{grid, OM, y} * W _{OM} + EF _{grid, BM, y} * W _{BM}			"Tool to calculate the emission factor for an electricity system" version 07.0, equation 16	
	EF _{grid,y} =EF _{grid,CM,y}	Combined margin CO ₂ emission factor in year y. This equals to EF _{CO2} for National grid.		tCO ₂ /MWh	Calculated and sourced from CEA database
	EF _{grid,O} M,y	Simple operating margin CO ₂ emission factor for National grid in year y.		tCO ₂ /MWh	Calculated and sourced from CEA database
	EF _{grid,B} M,y	Build margin CO ₂ emission factor for National grid in year y		tCO ₂ /MWh	Calculated and sourced from CEA database
	W _{OM}	Weighting of operating margin emission factor		0.75	"Tool to calculate the emission factor for an electricity system" version 07.0"
W _{BM}	Weighting of build margin emission factor	0.25	"Tool to calculate the emission factor for an electricity system"		

				version 07.0"	
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As per "Tool to calculate the emission factor for an electricity system" version 07.0, "The following default values should be used for w_{OM} and w_{BM} :

Wind power/Solar power generation projects: $W_{OM} = 0.75$ and $W_{BM} = 0.25$ (owing to their intermittent and non-dispatchable nature) for the first crediting period and for subsequent crediting periods"

Hence the values used are $W_{OM} = 0.75$ and $W_{BM} = 0.25$

Hence, the grid emission factor, $EF_{grid,CM,y}$ is calculated as [Value of the Grid Emission Factor].

Baseline Emission Factor: $EF_{grid,y} = EF_{grid,CM,y}$

Project Emissions (PE_y)

For most renewable power generation project activities, $PE_y = 0$.

However, some project activities may involve project emissions that can be significant.

These emissions shall be accounted for, by using the following equation:

$$PE_y = PE_{FF,y}$$

Where: PE_y = Project emissions in year y (tCO_2e/yr)

$PE_{FF,y}$ = Project emissions from fossil fuel consumption in year y (tCO_2/yr)

If any fossil fuel is used for the projects e.g. solar thermal power plant, CO_2 emissions from the combustion of fossil fuels shall be accounted for as project emissions ($PE_{FF,y}$). $PE_{FF,y}$ will be calculated as per the latest version of the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion".

Leakage Emissions (LE_y)

According to the applicable methodology, leakage calculation is considered if the energy generating equipment is transferred from another activity. Since the CPAs (both Solar and wind) acquire new equipment, leakage is zero. Moreover, Leakage is neglected as per ACM 0002 version 20 for renewal energy project.

$LE_y = 0$.

Emission Reductions (ER_y)

The emission reduction attributable to the CPA during a given year y (ER_y) are the difference between the baseline emissions (BE_y) and project emissions (PE_y) and leakage emissions (LE_y), as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where

ER_y = Emissions reductions of the project activity during the year y in $t CO_2e$

BE_y = Baseline emissions during the year y in $t CO_2e$

PE_y = Project emissions during the year y in $t CO_2e$

LE_y = Leakage emissions in the year y in $t CO_2e$

Since PE_y and LE_y is $=0$, therefore $ER_y = BE_y$. This formula will be applicable for the

	<p>all the future CPA (for offshore Wind turbine) and CPA (for Solar PV/Solar Thermal) implemented under the renewable crediting period for the registered POA.</p> <p>The Sample estimation emission reduction for the renewal crediting period is calculated as below:</p> <p>A sample calculation as per the CPA-16 (9416-P1-0016-CP1) of the POA is presented below. The CPA is a 60 MW solar project.</p> <p>Calculation of Electricity generation</p> $EG_{\text{facility},y} = 60 \text{ MW} \times 8760 \times 19.01\%$ $= 99,916 \text{ MWh}$ <p>Calculation of Emission Reduction</p> $BE_y = 99,916 \times 0.9419$ $= 94,113 \text{ tCO}_2\text{e (Annual GHG emission /year)}$ <p>FOR ESTIMATION, $PE_y=0$ and LE_y is neglected as per the approved methodology.</p> <p>Hence, $ER_y = BE_y - PE_y$</p> $= 94,113 - 0 = 94,113 \text{ tCO}_2\text{e}$ <p>Now since project emission and leakage emission is zero, therefore Emission reduction = Average annual Baseline emission = 94,113 tCO_{2e}</p>
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D.2.4. Validity of monitoring plan

Means of validation	Assessment team checked the monitoring practice of generic CPA and also checked the requirement of ACM 0002 version 20 and procedure mentioned in the registered PoA DD of 1 st CP.
Findings	CAR 04 was raised during the validation process and closed successfully
Conclusion	<p>The monitoring plan presented in the PoA-DD complies with the requirements of the applicable methodology. The validation team has checked all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found, this is in line with applied methodology ACM 0002 version 20.</p> <p>The procedures have been reviewed by the validation team through document review and interviews with the CME for the renewable crediting period. The information provided has allowed the validation team to confirm that the proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the PoA managing entity. The management system document of the CME provide sufficient information which forms the confirmation by the validation team on the issues related but not limited to the monitoring methodology, data management, and the quality assurance and quality control procedures to be implemented in the context of the Programme. Therefore, the PoA managing entity and/or CPA implementer(s) will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.</p> <p>Parameters determined ex-ante</p> <p>The CPA to be included under the PoA will adopt the ex-ante calculation of Operating Margin emission factor ($EF_{\text{grid,OM},y}$), Build margin emission factor ($EF_{\text{grid,BM},y}$) and Combined margin emission factor ($EF_{\text{grid,CM},y}$) of the grid. This calculation process, including the applied parameters and equations, were assessed by the validation team in accordance with the "Tool to calculate the emission factor for an electricity system", Version 7 by using the CEA baseline database or or any other official source made available by the host party. (which will be available at the time of CPA inclusion). The emission factor is calculated</p>

based on the CEA baseline database. The validation team confirms that all relevant parameters have been sufficiently considered and the values of the parameters are real, measureable and conservative.

Parameters determined ex-post

According to the approved methodology ACM0002 version 20 the following parameters will be monitored:

SL number- for both Solar PV/thermal and offshore wind turbines	Parameter- for both Solar PV/thermal and offshore wind turbines	Description- for both Solar PV/thermal and offshore wind turbines	Measured- for both Solar PV/thermal and offshore wind turbines
1	EG _{PJ,y}	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y	Measurements are undertaken using energy meters. The value parameter is calculated from export and import values. The export and import values are part of JMR sheets. The export and import calculation is in the hand of State electricity board and hence CPA implementer will have no say on it. The JMR report/B-form/credit report etc will be the primary source of the data for Net electricity supplied to the grid. The same source will be used for emission reduction calculation. If applicable, measurement results shall be cross checked with records for sold/purchased electricity (e.g. invoices/receipts). The electricity exported / supplied by the project activity will be measured through meters (ABT Meters) having accuracy class of 0.2s/ 0.5s (as per state

				regulation). Calibration frequency will be annual or as per the national standard.
	The data/parameters to be monitored for projects using fossil fuel are (In case Solar Thermal technology is used):			
	2	$PE_{FF,y}$	Project emissions from fossil fuel consumption in year y	The parameter will be calculated as per Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion"
	3	$FC_{i,j,y}$	quantity of fuel type i combusted in process j during the year y	The fuel consumption will be measured using mass/volumetric flow meters as per National standard/industry practice. Quantity of fuel measured will be cross checked with the fuel purchase invoices
	4	$NCV_{i,y}$	weighted average net calorific value of the fuel type i in year y	Assessment team confirm that If supplier invoice gives NCV, it will be used as such If supplier invoice does not give NCV, then quarterly two samples will be sent for the third party nationally accredited laboratory analysis. The NCV values will be checked for consistency with publically available values/range. Monitoring frequency will be Two samples in three months in the crediting period.
	5	$EF_{CO_2,i,y}$	weighted average CO ₂ emission factor of fuel type i in year y	The value will be considered from National GHG inventory communication of India to UNFCCC

				or latest available IPCC Guidelines for National Greenhouse Gas Inventories.
<p>In summary, the validation team is convinced of compliance of the monitoring plan with the requirements of the monitoring methodology of ACM 0002 version 20. During Interview with the CME, the validation team interviewed the PP that the monitoring arrangements described in the monitoring plan are feasible within the project design. The emission reductions resulting from the future CPA can be reported ex post and verified. The DOE has applied two-step process to assessing compliance with the requirements of monitoring plan, as follows:</p> <ul style="list-style-type: none"> i) Compliance of the monitoring plan with the approved methodology: Identified the list of parameters required by the selected approved methodology by means of document review, interview with CME team; Confirmed that the monitoring plan contains all necessary parameters, that they are clearly described and that the means of monitoring described in the plan complies with the requirements of the applied methodology ACM 0002 version 20.; ii) Implementation of the plan: The monitoring arrangements described in the monitoring plan are feasible within the POA design; The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the CPA can be reported ex-post and verified. <p>The assessment has been conducted by the DOE by means of reviewing of the documented procedures, interviewing with relevant personnel and project plans of the PoA-CPA. In summary, the validation team is convinced of compliance of the monitoring plan with the requirements of the monitoring methodology of ACM 0002 version 20. During the assessment, the validation team interviewed the CME/PP and confirmed that the monitoring arrangements described in the monitoring plan are feasible within the project design. The emission reductions resulting from the future CPA can be reported ex post and verified.</p> <p>Assessment team also confirmed that the CME has a well-defined project management structure for monitoring of the CPA which can be verified from the PoA-DD. The monitoring plan describes the Organization chart, Monitoring plan objective and Organization, Monitoring and archiving data, QA and QC procedures, data storage etc.</p> <p>Proper QA/QC has been implemented for monitoring parameters, part of the month calculation, calibration, emergency preparedness, discrepancies etc. This was confirmed by interviewing Core CarbonX team during telephonic interview which is in line with the explanations provided in the PoA-DD.</p> <p>According to document review in the PoA-DD and telephonic interviews with the representatives of the CME/PP, the validation team confirms the specific uncertainty levels, methods and associated accuracy level of measurement instruments and calibration procedures used for various parameters and variables are explained in the PoA-DD, along with detailed quality assurance and quality control procedures. The accuracy class and the method and frequency of calibration of the electricity meters confirm to the national standards. All the monitored data will be archived until 2 years after the crediting period to facilitate cross-checking during the crediting period.</p>				

D.2.5. Eligibility criteria for inclusion of CPAs

Means of validation	The eligibility criteria has been developed to meet the references in Standard.
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	Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities Version 03.0.			
Findings	CAR 04 was raised during the validation process and closed successfully			
Conclusion	A CPA to be included in the present PoA fulfils the following conditions:			
	No	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion
	1	Geographical boundary	Each CPA will be located within the physical/geographical boundary of the PoA	CPAs to provide detailed documentation regarding the exact geographical location of the CPA such as Commissining certificates/lease agreement if any or third party PLF assessment report or land documents.
	2	Double Counting existing reservoir with no change in the volume of the reservoir; or where the volume of the reservoir is increased considering a final power,	Each CPA will not be involved in another registered or under validation as a CDM project activity or as a CPA under the proposed or another PoA or as other GHG reduction projects related to small hydro power project	Declaration of double counting check from each CPAs implementer, Unique GPS coordinate
	3.	Other PoAs or projects	There is no other registered CDM project activity, included in another registered PoAs, deregistered project activities with the same identification data.	Declaration of double counting check, GPS coordinates, Analysis of projects in the CDM pipeline
4.	Technology/ Measure	Technology Employed by the CPA: Wind Energy Technology Level of Implementation: Greenfield Power Plant and new WTG's Type Of Service: The WTG's installed as part of the CPA should be connected to the grid. Performance Specification: The CPA should install Wind Turbine models that have Approval / certification from the relevant designated authority	Offer from the party providing the equipment/construction/op eration services proves that the CPA Solar and CPA Wind does not use Solar PV/offshore WTG's capacity addition or retrofit or replacement activity at an existing power plant. The connectivity to the grid is evidenced through the Power Purchase Agreement / Wheeling Agreement or the Approval from the relevant local authority or the Approval from the relevant local authority or the Purchase Orders /Work Order / contract with party providing equipment/construction/op eration services.	

			Description of the technologies including expected lifetime, capacity, plant load factor, and any manufacturer specifications in CPA-DD (for both Solar PV/thermal and Offshore Wind turbines);
5.	Start date.	Do not have a start date (as defined by the UNFCCC Glossary of Terms) before 13/06/2012. Since the start date can be defined by different project milestone, the CPA owner provides formal documentary evidence to the CME for its evaluation when the start date has already occurred (e.g. contracts for supplying turbines, contract for civil works, payments set in PPAs, contracts with the entity financing the project, among others according to the project characteristics).	Contracts for supplying turbines, contract for civil works, payments set in PPAs, contracts with the entity financing the project, among others according to the project characteristics, or licenses, among others
6.	Compliance with the applicability conditions of AMSI.D.	Each CPA will satisfy the applicability conditions for simplified baseline and monitoring methodologies as specified in the AMS-I.D. (Version 18.0)	Applicability conditions of ACM 0002 version 20 Section B of CPA-DD .
7.	Additionality .	As per the paragraph 2 of Annex 4 of EB 105, "Demonstration of additionality of small-scale project activities", Version 13.0, "Documentation of barriers, as per paragraph 10 , is not required for the positive list of technologies and project activity types that are defined as automatically additional for project sizes up to and including the small-scale CDM thresholds (e.g. installed capacity up to 15MW). As per Section 5.2.3, para 17 of "Tool 32: Positive list of technologies" The positive list comprises of:	The CPA will establish additionality using "Tool for the demonstration and assessment of additionality" (Ver. 07.0.0, EB 70, Annex 8). IRR calculation sheet along with all supporting documents for the financial parameters for demonstrating the additionality of the CPA shall be provided to assessment team during CPA inclusion.

			<p>(a) The following grid-connected renewable electricity generation technologies:</p> <p>(i) Solar photovoltaic technologies</p> <p>(ii) Solar thermal electricity generation including concentrating solar Power (CSP);</p> <p>(iii) Off-shore wind technologies;</p> <p>(iv) Marine wave technologies</p> <p>(v) Marine tidal technologies</p> <p>(vi) Building-integrated wind turbines or household rooftop wind turbines of a size up to 100 kW.</p> <p>(vii) Biomass internal gasification combined cycle (BIGCC).</p> <p>Since the renewable technologies included in the PoA involves solar photovoltaic technologies and Off-shore wind technologies in which the capacity of the aggregate project is less than or equal to 15 MW, the proposed PoA is automatically defined to be additional in accordance with para 11 of “ Demonstration of additionality of small-scale project activities”, Version 09, Annex 4, EB 105.</p>	
	8.	Local Stakeholder Consultation and Environmental Impact Analysis.	<p>Each CPAs (for both Solar PV and offshore Wind turbines) will hold local stakeholder consultation before the inclusion in PoA and construction. Each CPAs will conduct environmental impact analysis as per the national compliance .</p>	<p>Invitations evidences (letters, posters, photos, video), assistance list, agreement records, among others.</p> <p>As generation of electricity through offshore Wind Turbine Generators and Solar PV does not entail significant environmental impacts, it is not necessary to undertake an environmental impact assessments for each</p>

				SSC-CPAs included in the PoA. Further according to Indian regulation, the implementation of the wind turbine offshore and Solar PV/thermal does not require an environmental impact assessment.
	9.	Public Funding	Each CPAs will provide an affirmation that funding from Annex 1 party, if any, does not result in a diversion of official development assistance.	Affidavit on No Public Funding from Annex 1 party
	10.	Target Group	The target group will be only the grid connected wind power projects under the PoA.	The connection of the CPAs to the grid can be verified using the Power Purchase Agreement or the Approval from the relevant local authority to make sure that the power generated from the CPA(s) is injected only to the Indian national grid system.
	11.	Sampling	If the generic CPAs applies sampling for the determination of parameter values for calculating GHG emission reductions or net anthropogenic GHG removals, conditions related to sampling requirements for the PoA in accordance with the "Standard: Sampling and surveys for CDM project activities and programme of activities"	Not Applicable. Each CPAs assigned with unique number.
	12.	Small-Scale Thresholds	The capacity of each WTG will not exceed 15MW over the entire crediting period as small-scale CDM project activities. The WTG's and Solar PV involved in the SSC CPA will not be a capacity addition/retrofit/replace ment activity at an existing power plant. In other words the CPAs to be included would only comprise of Greenfield renewable energy power plants. The WTG's and solar PV installed as part of	Not applicable.

			SSC CPA will supply electricity to an identified consumer facility via national grid through a contractual arrangement such as wheeling.	
	13.	Debundling Check	Each CPA is not a debundled component of a large scale project activity as per Para.15 of Methodological tool Assessment of debundling for smallscale project activities	Not applicable.

SECTION E. Internal quality control

As final step of a validation of the final documentation including the Renewable crediting period validation report 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 to avoid any conflict of Interest.

SECTION F. Validation opinion

Applus+ Certification has performed a validation of the “Promotion of renewable energy generation in India- Programme of Activities”. The renewable validation was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria, e.g. ACM 0002 version 20, given to provide for consistent project operations, monitoring and reporting.

The review of the renewal programme of activities and the subsequent follow-up interviews have provided Applus+ Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The PoA-DD will hence be recommended by Applus+ Certification for renewal registration with the UNFCCC.

Applus+ Certification has checked the confirmation (obtained in 1st CP) from the host Party that the programme of activities assists it in achieving sustainable development.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO_{2e} emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An analysis of the positive list of renewable project demonstrates that the proposed programme of activities is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the programme of activities. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of annual emission reductions of 94,113 tCO_{2e}.

The validation has been performed following the requirements of the latest version of the CDM validation and verification standard for programme of activities, version 02 and on the basis of the contractual agreement. The single purpose of this report is its use during the renewal registration process as part of the CDM/UNFCCC project cycle.

Appendix 1. Abbreviations

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CEA	Central Electricity Authority
CL	Clarification request
CMS	Central Monitoring system
CP	Crediting period
CM	Combined Margin
CMS	Central Monitoring system
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
ER	External Resource
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
IR	Internal Resource
OR	Outside resource
OEM	Original Equipment manufacturer
OM	Operating Margin
PP	Project Participant

Appendix 2. Competence of team members and technical reviewers

1. **Mr. Sukanta DAS**, has done M. SC in (Electronics and Photonics) and M. Tech in (Energy technology) from Tezpur Central University/ Indian Institute of technology Bombay in India. He is a certified lead auditor for ISO 14001 EMS LA and ISO 9001 QMS LA from International registry for Certified Auditors (IRCA) and Certified Lean Management practitioner from Quality Council of India (QCI). He has more than eight years of working experience at TUV NoRD/ Re-consult/CRA/APPLUS certifications under various categories of projects stating from Renewable to waste to supercritical projects. He was JI/ CDM Lead Assessor in TUV NoRD and was involved in more than 100 CDM validation and verifications activities in Gold Standard, VCS, CDM projects as a team leader/technical reviewer/validator/verifier covering the sectoral scope 1, 13 technical areas 1.2/1.1/13.1. Currently he is associated with True Quality Certifications Private Limited and is empanelled with APPLUS certification to carry out GHG audit.
2. **Mr. Simon Shen** (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ LGAI 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+ LGAI, he had been worked for TÜV SÜD as a GHG Validator/Assessment team and ISO 9001/14001 Lead Auditor for 3.5 years.

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	NA	Contract of the project participant with the DOE	Contract document signed between PP and DOE	Project participant
2	NA	9416-P1-0007-CP1 to 9416-P1-0016-CP1	CPA implemented in 1 st CP https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/H8ZL9NPD/CF0B76JQM5XVTGKI1YU4AO/viewCPAs	UNFCCC
3	NA	1st PoA DD version 04 PoA DD based on which opinion is provided- Version 05	10/05/2020 03/07/2020	Project participant
4	NA	Estimated Emission reduction calculation sheet- version 01	03/07/2020	Project participant
5	NA	ACM 0002 version 20	UNFCCC CDM web site	UNFCCC
6	NA	Tools/ guidelines used in the PoA: <ul style="list-style-type: none"> • Clarification on national and/or sectoral policies Para 27 EB 55. • Tool to determine the remaining lifetime of the project activity in line with Annex 15 EB 50. • Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion, Version 3. • Tool to calculate the emission factor for an electricity system version 07. • 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). 	UNFCCC CDM web site	UNFCCC
7		Unique GPS coordinates	CPA-DDs of all 8 CPAs https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/H8ZL9NPD/CF0B76JQM5XVTGKI1YU4AO/viewCPAs	UNFCCC

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

Table 1. CL from this validation

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

Table 2. CAR from this validation

CAR ID	01	Section no.	D.2.1	Date: 13/05/2020
Description of CAR				
The Applicability criteria as per ACM 0002 version 20 (Latest meth) is not fulfilled. The PoA DD and generic CPA-DD is not updated with the latest version of the methodology. All the applicability para of ACM 0002 version 20 is not complied and hence Corrective action is sought for the same.				
Project participant response				Date: 03/07/2020
The POA-DD and the generic CPA-DD is now updated with the latest version of the ACM0002 methodology, version 20.				
Documentation provided by project participant				
Revised POA-DD.				
DOE assessment				Date: 14/07/2020
The applicability criteria is now revised as per the requirement of the Latest Methodology. CAR is closed.				

CAR ID	02	Section no.	D.2.2	Date: 13/05/2020
Description of CAR				
Section I.5 of the PoA-DD is not in Compliance with EB 66 Annex 47 i.e. continuity with original baseline guidance. The Section is thus reserved till the submission of the revised PDD along with supporting's.				
Project participant response				Date: 03/07/2020
Section I.5 of the POA-DD is now revised and updated as per the latest tool and methodology and is now complying with EB 66 Annex 47.				
Documentation provided by project participant				
Revised POA-DD				
DOE assessment				Date: 14/07/2020
The baseline section is now updated as per the requirement of EB 66 Annex 47 i.e. continuity with original baseline guidance . CAR is thus closed.				

CAR ID	03	Section no.	D.2.3	Date: 13/05/2020
Description of CAR				
The grid emission factor calculation is not as per the Tool to calculate the emission factor for an electricity system" version 07, EB100, Annex 04. The latest CEA version is not followed for the renewal PoA-DD. Corrective action is sought for the same.				
The Sample ER sheet is also not submitted to the assessment team. Corrective action is sought for the same.				
Project participant response				Date: 03/07/2020
The grid emission factor calculation is now updated as per the Tool to calculate the emission factor for an electricity system, version 07, EB 100, Annex 04. The latest CEA database version 15 has now been used to calculate the emission factor.				
A sample ER sheet is now submitted to the assessment team.				
Documentation provided by project participant				
1. Revised POA-DD				
2. Sample ER sheet				

DOE assessment			Date: 14/07/2020
The latest CEA version for emission factor calculation is used for POA renewal. The estimated emission reduction sheet for the POA renewal is now submitted to the assessment team. However the estimation of emission reduction at the CPA level will be done during the inclusion process. The estimation of ER is correct and in line with the requirement of applied methodology. CAR is thus closed.			
CAR ID	04	Section no.	D.2.4
Description of CAR			
The source of data for the monitoring parameters is not submitted to the assessment team. Corrective action is sought for the same.			
Project participant response			Date: 03/07/2020
The supporting documents for the source of monitoring parameters are now submitted to the DOE assessment team.			
Documentation provided by project participant			
Joint Meter Reading reports			
DOE assessment			Date: 14/07/2020
The supporting for the above points are checked and found correct by the assessment team. CAR is closed			

CAR ID	05	Section no.	D.2.5
Description of CAR			
The eligibility criteria for inclusion of CPAs does not fulfill the criteria laid down for Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities, Version 2.1. The obsolete version is used for the same and hence Corrective action is sought for the same.			
Project participant response			Date: 03/07/2020
The eligibility criteria for CPA inclusion is now revised in accordance with the criteria laid down by "Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programmes of activities", Version 2.1.			
Documentation provided by project participant			
Revised POA-DD			
DOE assessment			Date: 14/07/2020
The eligibility criteria for inclusion of CPAs is now modified as per the latest guideline. CAR is thus closed.			

Table 3. FAR from this validation

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

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
02.0	31 May 2019	Revision to: <ul style="list-style-type: none">• Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN) and version 02.0 of the “CDM project cycle procedure for programmes of activities” (CDM-EB93-A09-PROC);• Make editorial improvements.
01.0	29 December 2017	Initial publication.

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