
 <p style="text-align: center;"><b>Validation report form for renewal of crediting period for CDM project activities (Version 03.0)</b></p>	
Complete this form in accordance with the instructions attached at the end of this form.	
<b>BASIC INFORMATION</b>	
<b>Title and UNFCCC reference number of the project activity</b>	27.3 MW Wind energy farm at Mokla Rajasthan by HZL (7873)
<b>Number and duration of the next crediting period</b>	2 <sup>nd</sup> , 01/12/2020- 30/11/2027
<b>Version number of the validation report for RCP</b>	4.0
<b>Completion date of the validation report for RCP</b>	12/04/2021
<b>Version number of PDD to which this report applies</b>	07
<b>Project participants</b>	M/s Hindustan Zinc Limited (India) EKI Energy Services Limited (Australia)
<b>Host Party</b>	India
<b>Applied methodologies and standardized baselines</b>	ACM0002 "Consolidated Baseline Methodology for grid connected electricity generation from renewable sources" Version 20 Standardized baselines: NA
<b>Mandatory sectoral scopes</b>	1: 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>	44,307 tCO <sub>2</sub> e
<b>Name and UNFCCC reference number of the DOE</b>	TÜV SÜD South Asia Private Limited (E-0005)
<b>Name, position and signature of the approver of the validation report</b>	 Milind Shende Manager, Certification Body TÜV SÜD South Asia Private Limited

**SECTION A. Executive summary**

TÜV SÜD South Asia Pvt. Ltd. has performed the validation of renewal of crediting period of the aforementioned project activity “27.3 MW Wind energy farm at Mokla Rajasthan by HZL”. The validation is based on the currently valid documentation of the United Nations Framework Convention on Climate Change (UNFCCC).

The validation process includes three phases:

- Desk review of documents;
- Follow-up interviews with the relevant personnel;
- Resolution of outstanding issues and the issuance of final validation opinion.

The Project Participants are M/s Hindustan Zinc Limited (India) and EKI Energy Services Limited (Australia). M/s Hindustan Zinc Limited has developed 27.3 MW wind farm in the state of Rajasthan in India. The project activity involved supply, erection, commissioning and operation of 13 machines of rated capacity 2.1 MW each, with the objective to generate clean energy (electricity) by utilizing potential of wind. The WTGs of the project activity are located in villages Sonu, Mokla, and Serawa in the district of Jaisalmer in the state of Rajasthan, India.

The project activity utilizes the wind potential for power generation and exports the generated electricity to the grid. The registration date of this project as CDM project activity is 01/11/2012. The first crediting period has ended on 30/11/2020.

In the 2<sup>nd</sup> renewable crediting period, the grid emission factors have been calculated based on the data published by the Central Electricity Authority in December 2019.

2 Clarification Request (CLs) has been raised during the course of validation process of renewable crediting period, which has been successfully closed. Further, no CAR or FAR has been raised.

**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, Validator & Technical expert	EI	Menon	Rekha	TUV SUD South Asia Pvt Ltd	✓		✓	✓
2.	Country Expert	EI	Menon	Rekha	TUV SUD South Asia Pvt Ltd	✓		✓	✓

**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)
2	Technical reviewer	EI	Sudheendra	K	TUV SUD South Asia Pvt Ltd
2.	Approver	IR	Shende	Milind	TUV SUD South Asia Pvt Ltd

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

The information presented in the PDD on the technical design has been assessed for accuracy and completeness using standard auditing techniques including:

- (a) Document review including
  - A review of data and information;
  - Cross checks between information provided in the PDD and information from sources other than those used, the DOE's sectoral or local expertise. If necessary, independent background investigations were performed.
- (b) Follow-up actions including:
  - Interviews with relevant stakeholders in the host country, personnel with knowledge of the project design and implementation;
  - Cross checks between information provided by interviewed personnel (i.e. by checking sources or other interviews) to ensure that no relevant information has been omitted.
- (c) Reference to available information relating to projects or technologies similar to the proposed project activity under validation.

The names of the project participants, Hindustan Zinc Limited and EKI Energy Services Limited, included in the request for renewal of crediting period is consistent with the names stated at UNFCCC website. The same has been validated by the DOE through UNFCCC website and the final PDD.

In opinion of TÜV SÜD the project description, as included in the PDD, is accurate and complete; and it provides a correct understanding of the proposed project activity.

A complete list of all documents reviewed is attached as Appendix 3 to this report.

**C.2. On-site inspection**

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

The DOE has not conducted the on-site inspection for the validation of renewal of crediting period of this project activity, which is in line with p.30 and p.31 of the CDM VVS PA v2.0 /20/.

According to p.30 of the CDM VVS PA v2.0, the following conditions are mandatory for on-site inspection.

S.No	Requirement as per p.30 of CDM VVS PA v2.0	Applicability for the current verification
1	Its estimated annual average of greenhouse gas (GHG) emission reductions or net anthropogenic GHG removals is more than 100,000 t CO <sub>2</sub> eq;	The estimated annual average (GHG) emission reductions or net anthropogenic GHG removals is 44,307 tCO <sub>2</sub> e
2	There is pre-project information that is relevant to the requirements for registration of the project activity and may not be traceable after the registration.	There is no pre-project information, which is not traceable after the registration.

The DOE has conducted telephonic interviews and video calls to discuss with the client regarding the data and documents pertaining to renewal of crediting period. The interviews and discussions were conducted successfully with all concerned staff and stakeholders and it is sufficient for the DOE to verify and prepare the report, in line with p.31 of the CDM VVS PA v2.0.

Hence, the DOE concludes that the means used to conduct interviews are sufficient for the purpose of validation of renewal of crediting period of the PA.

**C.3. Interviews**

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Agrawal	Sitaram	Deputy Manager-Renewable Power – HZL	08/12/2020	PA description, MoC names and consistency Validity of the original baseline- impact of new relevant national and/or sectoral policies and circumstances on the baseline, equipment lifetime, Monitoring procedures and data recording and storage	Rekha Menon
2	Jaroli	Vinod	Deputy Manager-Renewable Power – HZL			
3	Sinha	Ishani	Manager Operations-EKI Energy Services Ltd	08/12/2020	Baseline, correctness of the application of the approved methodologies - EF values assessment and ER calculations	Rekha Menon

**C.4. Sampling approach**

Not Applicable.

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

Area of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form			
Application and selection of methodologies and standardized baselines			
Validity of original baseline or its update	1		
Estimated emission reductions or net anthropogenic removals			
Validity of monitoring plan	1		
Crediting period			
Project participants			
Post-registration changes			
Others (please specify)			
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>

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

<b>Means of validation</b>	TUV SUD has checked the final PDD form provided by the PP against the latest version of the PDD form in order to determine, whether the PDD form is in compliance with it and confirms the following: a) The project participants are mentioned in the relevant sections of the PDD in accordance with the relevant requirements in the Project standard. The names of project participants in the updated PDD are consistent with the names of the project participants available with the UNFCCC. b) The next crediting period of the registered CDM project activity commences on the day immediately after the expiration of the first crediting period. c) The most recent version of the PDD form is used.
<b>Findings</b>	No CAR/CL has been raised by audit team.
<b>Conclusion</b>	The PDD is compliant with relevant form and guidance as provided by UNFCCC according to the requirement of the project activity. The information transferred to the revised PDD is materially the same as that in the registered PDD. Hence the DOE confirms that the project participants used a later valid version of the PDD form for the updated PDD than the version of the form of the registered PDD in line with CDM VVS PA v2.0 /20/

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

<b>Means of validation</b>	DOE has verified whether the baseline and monitoring methodology applied in the project activity in accordance with the applicable requirements in the Project standard for project activities. The PP has applied the latest methodology version ACM0002 Version 20 in the updated PDD. The applicability condition of the ACM 0002 (version 20.0) /03/ in context of project activity is demonstrated in PDD. The summary of the project compliance with applicability criteria is listed below:	
	<b>ACM0002 (Version 20.0) applicability conditions</b>	<b>Conclusion made by validation team</b>

	<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 plants/units;</li> <li>(d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or</li> <li>(e) Involve a replacement of (an) existing plant(s)/unit(s).</li> </ul>	<p>The registered CDM project activity involves the installation of greenfield 27.3 MW wind power plant. The validation team reviewed commissioning certificates /17/, PPA /13/ for the conformance. The electricity generated from the project activity will be exported to the national grid of India. Based on the above assessment and review of PPA, the validation team confirms that the registered CDM project activity is a Green Field grid connected renewable power generation project based on wind energy. Hence, this applicability condition is fulfilled.</p>
	<p>The methodology is applicable under the following conditions:</p> <ul style="list-style-type: none"> <li>(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;</li> <li>(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.</li> </ul>	<p>From the commissioning certificates it is confirmed that the project activity is a greenfield project and not a retrofit or replacement of older wind turbines. Based on the documentary evidence, the validation team is able to confirm that the project activity is a Greenfield project and not a capacity addition. Hence, this applicability condition is not relevant to the registered CDM project activity</p>
	<p>In case of hydro power plants, one of the following conditions shall apply:</p> <ul style="list-style-type: none"> <li>(a) The project activity is implemented in existing single or multiple reservoirs, with no change</li> </ul>	<p>The project is a wind power project. Hence, this applicability condition is not relevant to the project activity.</p>

	<p>in the volume of any of the reservoirs; or</p> <p>(b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using equation (7), is greater than <math>4 \text{ W/m}^2</math>; or</p> <p>(c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (7), is greater than <math>4 \text{ W/m}^2</math>; or</p> <p>(d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (7), is lower than or equal to <math>4 \text{ W/m}^2</math>, all of the following conditions shall apply:</p> <p>(i) The power density calculated using the total installed capacity of the integrated project, as per equation (8), is greater than <math>4 \text{ W/m}^2</math>; ii) Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; (iii) Installed capacity of the power plant(s) with power density lower than or equal to <math>4 \text{ W/m}^2</math> 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>	
	<p>As described in the above applicability conditions, the registered CDM project activity is a greenfield project with wind based power project and hence the applicability conditions of 6, 7 and 8 of the methodology are not relevant to the proposed CDM project activity.</p> <p>Commissioning certificates and PPA of the project activity confirms that the project activity is not an add up of a renewable and nonrenewable component and only wind turbines are involved in the project activity having a total capacity of 27.3 MW, which classifies as a large scale project activity (<math>&gt; 15 \text{ MW}</math>).</p>	

	<p>The project activity does not involve switching from fossil fuels to renewable energy sources at the project activity site nor is a biomass fired power plant.</p> <p>The validation team has assessed the applicability requirements and cross-verified with the supporting information and interviewed the PP and found the applicability conditions of the methodology ACM 0002 (version 20.0) to the project activity is reasonable and still applicable to the project activity.</p>
<b>Findings</b>	No CARs/CLs have been raised.
<b>Conclusion</b>	TUV SUD confirms that the selected baseline and monitoring methodologies have been previously approved by the CDM Executive Board and are applicable to the project, which complies with all the applicability conditions therein the selected versions are valid at the time of submission of the renewal of crediting period. It is also confirmed that the methodologies are correctly applied by comparing them with the actual text of the applicable versions. The validation team confirms that the same is as per para 404 (b) of the CDM VVS for project activities, version 02.0.

### D.3. Validity of original baseline or its update

<b>Means of validation</b>	<p>DOE has assessed the validity of the baseline of the project activity as per below. Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period</p> <p>According to the Methodological tool of "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)" /04/, the stepwise procedure to assess the continued validity of the baseline and to update the baseline at the renewal of a crediting period are as follows:</p> <p><b>Step 1: Assess the validity of the current baseline for the next crediting period</b></p> <p>According to the procedures approved by the CDM Executive Board, updated PDD is required to incorporate the impact of national and/or sectoral policies and circumstances existing at the time of requesting for renewal of the crediting period on the current baseline emissions, except for the case where the project activity applies the valid version of an applicable standardized baseline that standardizes baseline scenario. The validity of the current baseline is assessed using the following Sub-steps:</p> <p><b>Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies</b></p> <p>The baseline scenario identified at the 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. It has been checked that there has been no change in the baseline scenario and is in and is in compliance with all the relevant mandatory national and/or sectoral policies. The PP has used the latest available CO<sub>2</sub> Baseline Database (CEA database, version 15) at the time of requesting renewal of the crediting period for establishing the baseline emission factor, which itself considered all the new circumstances with respect to the Sector- wise installed capacity (MW) as on 31/03/2019. Hence, the new circumstances do not have an impact on the baseline emission. As per CEA data (<a href="https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver15.pdf">https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver15.pdf</a>) /11/, the fossil</p>
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fuel based thermal power generation is dominant over the renewable based power generation, thus baseline scenario remains same as original.

### **Step 1.2: Assess the impact of circumstances**

The PP has used the latest available CO<sub>2</sub> Baseline Database (CEA database, version 15) at the time of requesting renewal of the crediting period for establishing the baseline emission factor, which itself considered all the new circumstances with respect to the Sector- wise installed capacity (MW) as on 31/03/2019. Hence, the new circumstances do not have an impact on the baseline emission. As per CEA data ([https://cea.nic.in/wp-content/uploads/baseline/2020/07/user\\_guide\\_ver15.pdf](https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver15.pdf)), the fossil fuel based thermal power generation is dominant over the renewable based power generation, thus baseline scenario remains same as original. Hence the current baseline remains same and there is no impact if circumstances, existing at the time of requesting renewal of crediting period.

### **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**

As explained in step 1.2 above, the baseline scenario was the electricity import/generation from the power plants connected to the electricity grid. The PA is a green field one and there is no baseline equipment or investment involved in project activity. Therefore, this condition is not applicable to the project activity.

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

The validity of the baseline emission factors has been checked and it has been updated in the PDD as per the latest CO<sub>2</sub> baseline data published by the Central Electricity Authority.

### **Step2: Update the current baseline and the data and parameters**

#### **Step 2.1: Update the current baseline**

As per the Step 1 above, the current baseline scenario is still valid as per the methodology ACM0002 Version 20.0. The identified baseline scenario of the proposed project is as follows: • 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.

Also, the baseline emissions for the 2nd crediting period have been updated, without reassessing the baseline scenario. This update was applied in the context of the sectoral policies and circumstances that are applicable at the time of request for renewal of the crediting period. Further information for the updated baseline emissions for the 2nd crediting period can be seen in the PDD. Only the approach used to calculate the baseline emission factor is updated as per the latest version of CEA database available at the time of PDD submission for renewal.

The approved consolidated baseline methodology, ACM0002 Version 20.0, has been used to determine the baseline and the estimation of emission reductions for the applicable crediting period. As referred in the methodology "*Tool to calculate the emission factor for an electricity system*" (version 07.0)

	<p>has been used to determine continued validity of the baseline based on combined margin (CM) calculations.</p> <p>As per CEA database version 15, the fossil fuel dominated electricity is more than renewable sector and is continuing with same pattern. In light of the above discussion, it is to be concluded that in accordance with relevant guidelines stipulated in CDM VVS PA v2.0, national and/or sectoral policies and circumstances had been considered towards formulating the OM &amp; BM baseline scenario. Hence the baseline scenario as applied for the present project activity remains justified.</p> <p>As per the approved consolidated Methodology ACM0002 Version 20.0 para 22: “If the project activity is the installation of a Greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.</p> <p><b>Step 2.2: Update the data and parameters</b></p> <p>As stated in Step 1.4 above, all parameters regarding the grid emission factor calculation have been updated for the 2nd crediting period.</p> <table><tr><th>Parameter</th><th>Value</th><th>Source</th></tr><tr><td>EF<sub>grid,CM,y</sub>  Combined margin CO<sub>2</sub> emission factor for the project electricity system in year y</td><td>0.9419 tCO<sub>2</sub>/MWh</td><td>Baseline CO<sub>2</sub> Emission Database, Version 15.0, Dec 2019 published by Central Electricity Authority (CEA), Government of India</td></tr><tr><td>EF<sub>grid,OM,y</sub>  Operating margin CO<sub>2</sub> emission factor for the project electricity system in year y</td><td>0.9622 tCO<sub>2</sub>/MWh</td><td>Baseline CO<sub>2</sub> Emission Database, Version 15.0, Dec 2019 published by Central Electricity Authority (CEA), Government of India</td></tr><tr><td>EF<sub>grid,BM,y</sub>  Build margin CO<sub>2</sub> emission factor for the project electricity system in year y</td><td>0.8811 tCO<sub>2</sub>/MWh</td><td>Baseline CO<sub>2</sub> Emission Database, Version 15.0, Dec 2019 published by Central Electricity Authority (CEA), Government of India</td></tr></table>	Parameter	Value	Source	EF <sub>grid,CM,y</sub>  Combined margin CO <sub>2</sub> emission factor for the project electricity system in year y	0.9419 tCO <sub>2</sub> /MWh	Baseline CO <sub>2</sub> Emission Database, Version 15.0, Dec 2019 published by Central Electricity Authority (CEA), Government of India	EF <sub>grid,OM,y</sub>  Operating margin CO <sub>2</sub> emission factor for the project electricity system in year y	0.9622 tCO <sub>2</sub> /MWh	Baseline CO <sub>2</sub> Emission Database, Version 15.0, Dec 2019 published by Central Electricity Authority (CEA), Government of India	EF <sub>grid,BM,y</sub>  Build margin CO <sub>2</sub> emission factor for the project electricity system in year y	0.8811 tCO <sub>2</sub> /MWh	Baseline CO <sub>2</sub> Emission Database, Version 15.0, Dec 2019 published by Central Electricity Authority (CEA), Government of India
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EF <sub>grid,BM,y</sub>  Build margin CO <sub>2</sub> emission factor for the project electricity system in year y	0.8811 tCO <sub>2</sub> /MWh	Baseline CO <sub>2</sub> Emission Database, Version 15.0, Dec 2019 published by Central Electricity Authority (CEA), Government of India											
Findings	CL 1 has been raised since some sources and references to the values fixed ex ante were not clear. PP has clarified and had put the correct references.												
Conclusion	TUV SUD confirms that the validity of the baseline has been assessed as per the requirements of the methodological Tool and CDM VVS PA v2.0.												

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

<b>Means of validation</b>	DOE has assessed the calculation of GHG emission of the project activity complies with the applied methodology and requirement of the project standard.
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<b>Findings</b>	No CAR/CL has been raised.
<b>Conclusion</b>	The GHG emission calculation of the project activity are as per the applied methodology ACM0002 Version 20.0

**D.5. Validity of monitoring plan**

<b>Means of validation</b>	<p>The project applies the approved monitoring methodology within ACM0002 (Version 20.0). The original monitoring plan following the requirements of the CDM methodology was updated based on requirements of the applied methodology.</p> <p>The monitoring plan presented in the PDD complies with the requirements of the applicable methodology. The assessment team has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found. PP has appropriately mentioned the maintenance and calibration frequency of monitoring equipment and monitoring frequency against each monitoring parameter.</p> <p>The procedures have been reviewed by the assessment team through document review and/or interviews with the relevant personnel. The information provided has allowed the assessment 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 PPs. Specifically; these points include the location of meters, data management, and the quality assurance and quality control procedures to be implemented in the context of the project.</p> <p>PP have the data of net electricity supplied to grid and same parameter is used for emission reduction calculations. Hence parameter of net electricity supplied to grid as per share certificate is considered as monitoring parameter as per methodology requirement.</p> <p>The detail apportioning procedure followed by state electricity board is mentioned in section B.7.3 of revised PDD, parameter Quantity of electricity generated and supplied by the project power plant to the grid in year and also the parameters X, Y, A and B, which are also as per the registered PDD which are given below:</p> <ol style="list-style-type: none"> <li>1. Quantity of electricity generated and supplied by the project power plant to the grid in year y.</li> <li>2. Electricity exported to the state electricity board by the project activity</li> <li>3. Electricity imported from the state electricity board by the project activity</li> <li>4. Sum of Gross electricity generated by all WEGs connected to substation of the state utility</li> <li>5. Sum of Gross electricity generated by all WEGs owned by PP in project Activity</li> <li>6. Total electricity exported to the grid measured at the substation</li> <li>7. Total electricity imported from the grid measured at the substation</li> </ol> <p>There is no change in monitoring procedure as compared with first crediting period and same procedure is elaborated in section B.7.3 of revised PDD. Since single parameter net electricity supplied to grid is used for ER calculations and same is available to PP, that parameters mentioned in PDD as per monitoring methodology ACM0002 Version 20. There is no change in the monitoring procedures with respect to these parameters from the first crediting period. Hence the DOE confirms that the PP is able to implement the monitoring plan in line with the registered PDD and the methodology.</p>
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<b>Findings</b>	<p>CL 2 has been raised since the monitoring of the parameter <math>EG_{PJ,y}</math> is not consistent with that of the registered PDD particularly with respect to the apportioning procedure. Also the monitoring parameters mentioned in the registered PDD X, Y, A, B are not included in the revised PDD.</p> <p>PP has included the missing monitoring parameters X, Y, A and B in the revised PDD. There is no change in the monitoring procedures with respect to these parameters from the first crediting period. Hence the DOE confirms that the PP is able to implement the monitoring plan in line with the registered PDD and the methodology.</p>
<b>Conclusion</b>	TUV SUD confirms that the PP is able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.

**D.6. Crediting period**

<b>Means of validation</b>	<p>The purpose of a validation related to the duration or day of renewal of the crediting period of a project is an assessment according to the VVS PA 2.0 and includes an assessment of an updated PDD in accordance with the relevant sections of the PS related to the duration of renewal of crediting period and in particular to the next crediting period of the registered CDM project activity.</p> <p>The project has been registered on 01/11/2012 and the first renewable crediting period has been started on 01/12/2013 and end date is 30/11/2020. It is also been verified that the next crediting period of the registered CDM project activity commences on the day immediately after the expiration of the current crediting period.</p>
<b>Findings</b>	No CAR/CL has been raised by audit team.
<b>Conclusion</b>	TUV SUD confirms that the start date and the length of the crediting period are in compliance with the project standard and CDM VVS PA v2.0.

**D.7. Project participants**

<b>Means of validation</b>	<p>The project participants are Hindustan Zinc Limited and EKI Energy Services Limited and the same is consistent with the name stated at UNFCCC website. <a href="https://cdm.unfccc.int/Projects/DB/DNV-CUK1351155785.18/view/01/">https://cdm.unfccc.int/Projects/DB/DNV-CUK1351155785.18/view/01/</a></p> <p>The same has been validated by the DOE through UNFCCC website.</p>
<b>Findings</b>	No CAR/CL has been raised by audit team.
<b>Conclusion</b>	The name of the project participant(s) included in the request for renewal of crediting period is consistent with the name stated at UNFCCC website, the same has been validated by the DOE through UNFCCC website and final PDD.

**D.8. Post-registration changes**

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

<sup>1</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).

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 applied standards or tools	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

Internal quality control within the team is assured by means of a technical review process that takes place after the on-site assessment and after closure of findings. The internal quality control in the verification process is given by the final decision made by the Certification Body.

### SECTION F. Validation opinion

TÜV SÜD has performed a validation of the request for renewal of the crediting period of the aforementioned existing CDM project activity. Standard auditing techniques have been used for the validation process. The validation has been performed following the requirements of the latest version of the CDM VVS for PA v 2.0.

The review of the project design documentation, subsequent follow-up interviews, and further verification and validation of references have provided TÜV SÜD with sufficient evidence to determine the validity of the original baseline and to confirm that the estimated emission reductions are in line with the applied methodology. In our opinion, the project meets all relevant UNFCCC requirements and hence TÜV SÜD recommends the renewal of the crediting period of this project. Considering that the project is implemented as designed, the project is likely to achieve the estimated amount of annual emission reductions of 44,307 tCO<sub>2</sub>e as specified within the final PDD version 7 for the second crediting period. No findings were raised during this validation.

The single purpose of this report is its use during the registration process as part of the CDM project cycle. Based on the work described in this report, nothing has come to our attention that causes us to believe that any project component or issue has not been covered by the validation process.



Pune, 12/04/2021

Milind Shende

Manager, Certification Body  
TÜV SÜD South Asia Private Limited

## Appendix 1. Abbreviations

Abbreviations	Full texts
<b>BM</b>	Build Margin
<b>CAR</b>	Corrective Action Request
<b>CDM</b>	Clean Development Mechanism
<b>CDM-EB</b>	CDM Executive Board
<b>CER</b>	Certified Emission Reduction
<b>CEA</b>	Central Electricity Authority
<b>CM</b>	Combined Margin
<b>CMP</b>	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
<b>CO<sub>2</sub>e</b>	Carbon dioxide equivalent
<b>CR / CL</b>	Clarification Request
<b>DNA</b>	Designated National Authority
<b>DOE</b>	Designated Operational Entity
<b>EF</b>	Emission Factor
<b>EIA / EA</b>	Environmental Impact Assessment / Environmental Assessment
<b>ER</b>	Emission Reduction
<b>FAR</b>	Forward Action Request
<b>GHG</b>	Greenhouse Gas(es)
<b>GWP</b>	Global Warming Potential
<b>HZL</b>	Hindustan Zinc Ltd
<b>IRL</b>	Information Reference List
<b>KP</b>	Kyoto Protocol
<b>MoEF</b>	Ministry of Environment and Forest
<b>MP</b>	Monitoring Plan
<b>MR</b>	Monitoring Report
<b>OM</b>	Operational Margin
<b>PCP</b>	Project Cycle Procedure
<b>PDD</b>	Project Design Document
<b>PLF</b>	Plant Load Factor
<b>PP</b>	Project Participant
<b>PS</b>	Project Standard
<b>RCP</b>	Renewable Crediting Period
<b>TÜV SÜD</b>	TÜV SÜD South Asia Pvt. Ltd
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VVS</b>	CDM Validation And Verification Standard for Project Activities
<b>WTGs</b>	Wind Turbine Generators

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



## CERTIFICATE OF APPOINTMENT

Ms. Rekha Menon fulfills the requirements of the Certification Body 'Environment and Energy' of TUV SUD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GIS	WCS	ISO-14064-1:2006	Other
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Qualification as						
Status	Validator	Verifier	AT...	Technical Reviewer	Financial Expert	Technical Expert
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TA (s)	1.2, 3.1, 13.1, 13.2, 14.1					

Country Expertise						
Region	1	2	3	4	5	Other
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Further countries:						

Technical Area
1.2_Renewables
3.1_Energy Demand
13.1_Solid waste and waste water
13.2_Manure
14.1_Afforestation and Reforestation

This appointment is valid until 28.10.2021 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TUV SUD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-20103/002.

Date	Signature
29/10/2020	

IS-CMS-CB-POG-01/05, version 03

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## CERTIFICATE OF APPOINTMENT

Mr. Sudheendra, K fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	ISO-14001-1:2006	Other
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Qualification as						
Status	Validator	Verifier	ATL	Technical Reviewer	Financial Expert	Technical Expert
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
TA (s)	1.1, 1.2					

Country Expertise						
Region	1	2	3	4	5	Other
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Further countries

Technical Area
1.1 Thermal energy generation
1.2 Renewables

This appointment is valid until 31.07.2021 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.

In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference no. CB-IND-CCP-0104/C02.

Date	Signature
01/09/2020	

IS-CMS-CB-POG-01/05, version 03

TÜV<sup>®</sup>

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### Appendix 3. Documents reviewed or referenced

No	Author	Title	References to the document	Provider
1	UNFCCC	<a href="https://cdm.unfccc.int/Projects/DB/DNV-CUK1351155785.18/view">https://cdm.unfccc.int/Projects/DB/DNV-CUK1351155785.18/view</a>	PA web page	UNFCCC
2	UNFCCC	Registered PDD	Version 04 15/10/2020	UNFCCC
3	UNFCCC	Methodology ACM0002: Grid-connected electricity generation from renewable sources	Version 20	UNFCCC
4	UNFCCC	Methodological Tool -Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period	Version 03.0.1	UNFCCC
5	UNFCCC	Rules on relaxation of mandatory site visits by DOEs	20/03/2020 EB 106	UNFCCC
6	UNFCCC	EB 105 Meeting Report		UNFCCC
7	UNFCCC	Tool to calculate the emission factor for an electricity system	Version 7	UNFCCC
8	UNFCCC	MoC annex		UNFCCC
9	Hindustan Zinc Limited	PDD for 2 <sup>nd</sup> crediting period	Version 07 05/04/2021	EKI Energy Services Ltd
10	Hindustan Zinc Limited	ER spreadsheet for 2 <sup>nd</sup> crediting period	23/11/2020	EKI Energy Services Ltd
11	Central Electricity Authority	CO2 Baseline Database for the Indian Power Sector <a href="https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver15.pdf">https://cea.nic.in/wp-content/uploads/baseline/2020/07/user_guide_ver15.pdf</a>	Version 15 December 2019	PP
12	Central Electricity Authority	Updated Grid Emission factor calculations	Version 15 December 2019	PP
13	-	Power purchase agreement between HZL and Suzlon Infrastructure Services Ltd and Ajmer Vidyut Vitran Nigam Ltd	Dated 14/09/2011	PP
14	Suzlon	Technical specification of 2.1 MW WTG		PP
15	-	Copy of Joint meter readings signed by the representatives of O&M and State Discom	-	PP
16	Suzlon Energy Ltd	Copy Break up of Net Export Units	-	PP
17	Ajmer Discom	Commissioning certificates	Dated 11/10/2011, 1/11/2011, 23/11/2011 and 20/12/2011	PP
18	CDM Executive Board	CDM project cycle procedure for project activities	Version 02 of 29/11/2018	Others

**CDM-RCPV-FORM**

19	CDM Executive Board	CDM project standard for project activities	Version 02 of 29/11/2018	Others
20	CDM Executive Board	CDM validation and verification standard for project activities	Version 02 of 29/11/2018	Others

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

**Table 1. Remaining FAR from validation and/or previous verifications**

NA

**Table 2. CL from this validation**

CL ID	01	Section no.	D.3	Date	: 16/12/2020
<b>Description of CL</b>					
<ol style="list-style-type: none"> <li>1. Page no 28, Data and parameters fixed Ex-ante table for Build margin, Source of Data is mentioned CEA Data Base version 14. However, the latest version is 15.</li> <li>2. Reference to Southern Grid in various places in sec B6</li> <li>3. Page 25 - Net Generation in Operating Margin (GWh) (incl. Imports – value for 2017-18 is not as per CEA database v15</li> <li>4. Reference to Biomass projects in various places in sec B4</li> </ol>					
<b>Project participant response</b>					<b>Date</b> : 17/12/2020
<ol style="list-style-type: none"> <li>1. The table of EF<sub>Grid, BM,y</sub> has been updated with the latest version of CEA database Version 15 in Section B.6.2. of Revised RCP PDD version 06 now provided for assessment</li> <li>2. It is to be noted that the term “Southern Grid” in Section B.6. of the PDD has been mentioned for showing the past history of Indian Grid which was earlier divided in to NEWNE and Southern grid, hence justified.</li> <li>3. Net Generation in Operating Margin (GWh) (incl. Imports – value for 2017-18 has been corrected as per CEA Database Version 15 in Section B.6.1. of Revised RCP PDD Version 06 now provided for assessment.</li> <li>4. Section B4 has been updated as per technology of project activity in revised PDD ver 06 now provided for assessment.</li> </ol>					
<b>Documentation provided by project participant</b>					
Revised PDD					
<b>DOE assessment</b>					<b>Date</b> : 17/12/2020
<p>The validation team checked the revised PDD and confirms that the above issues has been addressed by the PP in the revised PDD.</p> <p>CL 1 is closed.</p>					

CL ID	02	Section no.	B.7.1	Date	: 20/02/2021
<b>Description of CL</b>					
<p>It seems that the monitoring of the parameter EG<sub>PJ,y</sub> is not consistent with that of the registered PDD particularly with respect to the apportioning procedure. Also the monitoring parameters mentioned in the registered PDD X,Y, A, B are not included in the revised PDD. PP to clarify if there is any change in the monitoring procedures followed in the plant during the 2<sup>nd</sup> crediting period.</p> <p>The parameters A, B, X and Y which are used to calculate quantity of electricity supplied by the project plant/unit to the grid and quantity of electricity delivered to the project plant/unit from the grid are not monitored, and the values of these parameters may not be available to the Project Participant. It is also observed that these parameters were monitored in the first crediting period and in the second monitoring period for which the CERs have been issued, PP has mentioned that the apportioning procedure is under control of state electricity board and Project Participant do not have any control on it, PP to explain why these parameters were not included in the second crediting period and how they are monitored</p>					
<b>Project participant response</b>					<b>Date</b> : 05/04/2021

There is no change in the monitoring procedures. The parameters A, B, X and Y which are used to calculate quantity of electricity supplied by the project plant/unit to the grid and quantity of electricity delivered to the project plant/unit from the grid which are missed out in the PDD version 5 are now included in the revised PDD.	
<b>Documentation provided by project participant</b>	
RCP PDD version 07	
<b>DOE assessment</b>	<b>Date: 07/04/2021</b>
PP has included the missing monitoring parameters X, Y, A and B in the revised PDD. There is no change in the monitoring procedures with respect to these parameters from the first crediting period. Hence the DOE confirms that the PP is able to implement the monitoring plan in line with the registered PDD and the methodology. Hence the issue is closed	

**Table 3. CAR from this validation**

NA

**Table 3. FAR from this validation**

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