

Bundled Wind Power Project by Mytrah Group



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Summary:

Validation purpose: The purpose of the project activity (*hereafter referred as “proposed project activity”*) is to generate power using renewable energy source (wind energy) and sell the power generated to the state grid. The project activity generates electricity using wind energy. The generated electricity is exported to the regional grid system which is under the purview of the INDIAN electricity grid of India. Since, the wind power is Green House Gas (GHG) emissions free, the power generated will replace anthropogenic emissions of greenhouse gases estimated to be approximately 921,296 tonnes of CO₂. Hence, it results in reduction of GHG emissions. GHG emission reductions from the project activity will be 921,296 tonnes of CO₂ and total GHG emission reductions for the chosen 10 year crediting period will be 9212,960 tonnes of CO₂ from the project activity, from the generation-mix of power plants connected to the INDIAN GRID, which is mainly dominated by thermal/ fossil fuel based power plant.

A risk based approach has been followed to perform this validation activity. In the course of Joint Validation and Verification, for validation scope, 08 Corrective Action requests (CARs) and 00 Clarification Requests (CLs) were raised and successfully closed. The review of the project description and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PROJECT OWNERS have provided Applus+LGAi with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

Verification purpose:

The proposed project activity will assist development of renewable energy generation plants based on Wind power technology in India and delivering electricity to the grid. Each instance of project activity under this project will consist of one or more renewable power generation plant using Wind technology. The proposed project is a voluntary action being undertaken by each project activity instance owner (project proponent). EKI Energy Services Limited (*hereafter referred as “EKIESL”*) is acting as the other party for this project activity. All the project activity being included in the proposed project are owned by project proponent. The details of the project owner is as below:

SI No.	Project Site	Location (State)	Name of the SPVs	Project Capacity (MW)
1	Bhesada	Rajasthan	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4
2	Pottipadu	Andhra Pradesh	Mytrah Vayu (Indravati) Pvt. Ltd.	105
3	Nidhi ¹	Rajasthan	Mytrah Vayu (Som) Pvt. Ltd.	90
4	Nipaniya	Madhya Pradesh	Mytrah Vayu (Som) Pvt. Ltd.	30
5	Nazeerabad	Telangana	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8
6	Burgula-II	Andhra Pradesh	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4
7	Aspari	Andhra Pradesh	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9
	Total			493.5

The project activity is a new facility (Greenfield) and the purpose of the project activity is to generate energy electricity by the utilization of renewable Wind technology and further selling the generated energy to the Indian Grid. In this process there is no consumption of any fossil fuel and hence the project does not lead to any greenhouse gas emissions. Thus, electricity would be generated through sustainable means without causing any negative impact on the environment.

During the current monitoring period, the project activity undergo continued operation since their commissioning and no major breakdown had taken place. For the current monitoring period, the net GHG emission reductions claimed by the project activity has been found to be 1271,028 tCO_{2e}.

A risk based approach has been followed to perform this verification activity. In the course of verification, 02 Corrective Action requests (CARs) and 00 Clarification Requests (CLs) were raised and successfully closed. The review of the Monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PROJECT OWNERS have provided Applus+LGAI with sufficient evidence to verify the fulfillment of the stated criteria of VCS

¹ As per PPA, Project activity capacity restricts as 90 MW though total capacity comes as 90.10 MW (53 WTGs of 1.7 MW each), thus project activity capacity is considered as 90 MW, however conservatively total capacity of 90.10 MW based on individual rated WTG capacity is considered for IRR calculation

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. has been appointed by “Mytrah Energy (India) Private Limited” to perform the Joint validation and verification of the “Bundled Wind Power Project by Mytrah Group” under VCS standard and guideline. The objective of this joint validation and verification activity is to have an independent third party for the assessment of the VCS PD, emission reduction sheet and Monitoring report, and to ensure a thorough assessment of the proposed project activity against the CDM and VCS requirements. In particular;

- The project's baseline is assessed against “ACM 0002 version 17
- The project's monitoring plan is assessed against “ACM 0002 version 17
- The projects compliance with, the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline and standard version 3.7 for the project activity.
- CDM Validation and Verification Standard version 01 for the project activity
- CDM Project Standard version 01 for the project activity
- CDM Project Cycle Procedure version 01 for the project activity
- VCS standard v3.7 VCS guideline v3.7

Joint Validation and verification is a requirement for all VCS PD and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VERs).

1.2 Scope and Criteria

The scope of the Joint validation and verification is the independent and objective review of the Project Document as per Para 3.2.9 of VVM version 3.1 for the project activity and Monitoring report (MR). The PD and MR are reviewed against the relevant criteria (see 1.1) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The validation and verification was based on the guidance given in the CDM Validation and Verification Standard version 01 for the project activity, CDM Project Standard version 01 for the project activity, CDM Project Cycle Procedure version 01 for the project activity, VCS guideline and standard version 3.7

The assessment team has employed a risk based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the PD and MR. The main focus of the assessment team is to identify the significant risks for the project implementation and the generation of VERs. The validation and verification is not meant to provide any consulting towards the project

participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design and monitoring report combined.

The only purpose of the validation and verification is its usage during the registration /issuance process as part of the VCS project cycle. Therefore, LGAI Technological Center S.A. can't be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

1.3 Level of Assurance

The verification and validation has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS.

1.4 Summary Description of the Project

The purpose of the project activity is to generate power using renewable energy source (Wind). The project activity generates electricity using Wind power and thus contributes to the INDIAN grid.

The purpose of the project activity is to generate electrical energy using renewable energy source (wind) and selling the generated electrical energy to the respective state utility. The project activity generates electricity using wind potential and converts it into kinetic energy using Wind turbines, which drives the alternators to generate energy. The generated electricity is exported to the regional grid system which is under the purview of the Indian grid of India.

The details of the project activity have been mentioned below.

Sl No.	Project Site	Location (State)	Name of the SPVs	Project Capacity (MW)
1	Bhesada	Rajasthan	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4
2	Pottipadu	Andhra Pradesh	Mytrah Vayu (Indravati) Pvt. Ltd.	105
3	Nidhi2	Rajasthan	Mytrah Vayu (Som) Pvt. Ltd.	90
4	Nipaniya	Madhya Pradesh	Mytrah Vayu (Som) Pvt. Ltd.	30
5	Nazeerabad	Telangana	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8
6	Burgula-II	Andhra Pradesh	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4
7	Aspari	Andhra Pradesh	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9
	Total			493.5

² As per PPA, Project activity capacity restricts as 90 MW though total capacity comes as 90.10 MW (53 WTGs of 1.7 MW each), thus project activity capacity is considered as 90 MW, however conservatively total capacity of 90.10 MW based on individual rated WTG capacity is considered for IRR calculation

The power produced displaces an equivalent amount of power from the grid, which is fed mainly by fossil fuel fired power plants. Hence, it results in reduction of GHG emissions. GHG emission reductions from the project activity will be 921,296 tonnes of CO₂ and total GHG emission reductions for the chosen 10 year crediting period will be 9212,960 tonnes of CO₂.

The total emission reductions achieved during the current monitoring period are 1271,028 tCO_{2e}

The Project activity is a new facility (Greenfield) and the purpose of the project activity is to generate electricity by the utilization of wind velocity, and selling the generated electrical energy from the project to the respective state utilities under the Indian Grid.

The total capacity of the project activity is 493.5 MW out of which 457.6 MW has been commissioned till date. The commissioning of the balance 35.9 MW is under process. The commissioning details of the WTGs have been mentioned below in the report.

In this process there is no consumption of any fossil fuel and hence the project does not lead to any greenhouse gas emissions. Thus, electricity would be generated through sustainable means without causing any negative impact on the environment.

In the Pre- project scenario the equivalent amount of electricity delivered to the grid by the project activity, would have otherwise been generated by the operation of grid-connected fossil fuel based power plants and by the addition of new generation sources.

Validation purpose: The purpose of the project activity (*hereafter referred as “proposed project activity”*) is to generate power using renewable energy source (wind energy) and sell the power generated to the state grid. The project activity generates electricity using wind energy. The generated electricity is exported to the regional grid system which is under the purview of the INDIAN electricity grid of India. Since, the wind power is Green House Gas (GHG) emissions free, the power generated will replace anthropogenic emissions of greenhouse gases estimated to be approximately 921,296 tonnes of CO₂. Hence, it results in reduction of GHG emissions. GHG emission reductions from the project activity will be 921,296 tonnes of CO₂ and total GHG emission reductions for the chosen 10 year crediting period will be 9212,960 tonnes of CO₂ from the project activity, from the generation-mix of power plants connected to the INDIAN GRID, which is mainly dominated by thermal/ fossil fuel based power plant.

A risk based approach has been followed to perform this verification activity. In the course of Joint Validation and Verification, 08 Corrective Action requests (CARs) and 00 Clarification Requests (CLs) were raised and successfully closed. The review of the project description and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PROJECT OWNERS have provided Applus+LGAI with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

Verification purpose:

The proposed project activity will assist development of renewable energy generation plants based on Wind power technology in India and delivering electricity to the grid. Each instance of project activity under this project will consist of one or more renewable power generation plant using Wind technology. The proposed project is a voluntary action

being undertaken by each project activity instance owner (project proponent). EKI Energy Services Limited (hereafter referred as “EKIESL”) is acting as the other party for this project activity. The project activity is being included in the proposed project are owned by project proponent. The details of the project owner is as below:

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A risk based approach has been followed to perform this verification activity. In the course of verification, 02 Corrective Action requests (CARs) and 00 Clarification Requests (CLs) were raised and successfully closed. The review of the Monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PROJECT OWNERS have provided Applus+LGAi with sufficient evidence to verify the fulfillment of the stated criteria of VCS

³ As per PPA, Project activity capacity restricts as 90 MW though total capacity comes as 90.10 MW (53 WTGs of 1.7 MW each), thus project activity capacity is considered as 90 MW, however conservatively total capacity of 90.10 MW based on individual rated WTG capacity is considered for IRR calculation

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

Validation and Verification Scope: The scope is defined as an independent and objective review of the Joint project design document and Monitoring report (MR). The Joint PD and MR 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 and VCS standard and guideline version 3.7, including the approved baseline and monitoring methodology ACM 0002 version 17. The validation and verification was based on the requirements in the Validation and Verification Standard (VVS version 01 for the project activity), project standard version 01 for the project activity, project cycle procedure version 01 for the project activity and VCS guideline and standard version 3.7. The validation and verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project document and the Monitoring period.

Validation and Verification Process: The project assessment is based on the “Clean Development Mechanism Validation and Verification Standard version 01.0 for the project activity and VCS standard and guideline version 3.7 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 VCS project activity are appointed.

Once the project is received by the assessment team, the members of the assessment team carried out:

- I A desk review of the Joint project design documentation and monitoring report;
- II Follow-up interviews with project stakeholders;
- III The resolution of outstanding issues and the issuance of the final verification/ validation report and opinion.

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

The validation and verification checklist consists of three tables. The different columns in these tables are described in the tables below

Joint Validation/Verification Checklist Table 1: Mandatory Requirements			
Requirement	Reference	Conclusion	Cross reference
The requirements which the	Gives reference to the	This is either acceptable based on evidence provided (OK), or a Corrective Action Request	Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement

project must meet.	legislation or agreement where the requirement is found.	(CAR) of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the validation report.	is validated. This is to ensure a transparent validation process.
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Joint Validation/Verification Checklist Table 2: Requirement checklist				
Checklist Question	Reference	Comment	Draft Conclusion	Final Conclusion
The various requirements in Table 2 are linked to checklist questions the project should meet. The checklist is organized in several different sections. Each section is then further subdivided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	Conclusions are presented based on the assessment of the first PD and MR version. This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification is used when the validation team has identified a need for further clarification. Forward action request to highlight issues related to project implementation that requires review during the first verification.	Conclusions are presented in the same manner based on the assessment of the final PD and MR version and further documents including assumptions presented in the documentation.

Joint Validation/Verification Checklist Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	Ref. to checklist question in table 1&2	Summary of project owner response	Validation/Verification conclusion
If the conclusions from the draft Validation are either	Reference to the checklist question number in Table	The responses given by the Client or other project participants	This section should summarize the validation team's responses and final conclusions. The conclusions

a Corrective Action Request or a Clarification Request, these should be listed in this section.	1&2 where the Corrective Action Request or Clarification Request is explained.	during the communications with the validation team should be summarized in this section.	should also be included in Table 2, under "Final Conclusion".
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The detail of corrective action/clarification request/ forward action request is presented as Appendix2 of this report.

Appointment of the assessment team

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

The composition of audit team shall be approved by the Applus+ LGAI 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	TL	YES	YES	YES	YES
Mr. Denny Xue	TR	YES	YES	YES	NA

The complete list of CVs is included as Appendix 3 of this report.

Document review

The Joint Project Document and Monitoring report submitted 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 has been done. A complete list of all documents and evidence material reviewed is included in this report below in appendix 1

Follow-up interviews

A site visit is conducted by Applus+ LGAI performed interviews, telephone conferences, and physical site inspection with project stakeholders to confirm selected information and to resolve issues identified in the document review. The detail is provided in this report in the below section

Resolution of Clarification and Corrective Action Request

The objective of this phase of the joint validation and Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ LGAI's positive conclusion on the project design and Monitoring report. The Corrective Action Requests and Clarification Requests raised by Applus+ LGAI were resolved during communications between the Client and Applus + LGAI to guarantee the transparency of the validation process, the concerns raised and responses given are summarized below in the appendix 2.

The Joint PD and MR Version 03 submitted by PP respectively serve as the basis for the final assessment presented. Additional changes to the project during the joint validation and verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS 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 joint validation and verification of the final documentation including the final Joint validation and verification report 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 positive validation/verification opinion and relevant documents are submitted to the VCS secretariat through the VCS web-platform

2.2 Document Review

The details of the document observed during the gap validation and verification process are listed below in appendix 1 of this report

2.3 Interviews

The site visit for the project activity were carried out from 06/12/2017 to 09/12/2017 which covers all the sites (includes all the locations) in the state of Rajasthan, Andhra Pradesh, Telangana and Madhya Pradesh in republic of India. No sampling procedures were adopted either in document verification and all the document were cross checked to ensure conservative estimation of emission reduction. Kindly find below name of the person interviewed (during onsite and telephonic interview later) for all the sites.

Project Investors	Project Owners representative	Villager-1-Stakeholder	Villager-2-Stakeholder	Date of audit
Nipaniya Site- Madhya Pradesh	Amit Pramanik	Ramesh Prasad	Ankur Singh	06/12/2017
Nidhi- Rajasthan	Amit Pramanik	Mohit Singh	Jagmohan Singh	07/12/2017
Bhesada- Rajasthan	Amit Pramanik	Mukund Singh	Jatin Singh	07/12/2017
Pottipadu- Andhra Pradesh	Amit Pramanik	Vineet	Ajay Jayasilan	08/12/2017
Burgula-II- Andhra Pradesh	Amit Pramanik	J.P. Rao	Anand S. Rao	08/12/2017
Aspari- Andhra Pradesh	Amit Pramanik	Rajesh Iyer	S. Venugopal	08/12/2017
Nazeerabad- Telangana	Amit Pramanik	J. Balakrishna	Ramesh Kulashekhar	09/12/2017

2.4 Site Inspections

Duration of on-site inspection: 06/12/2017 to 09/12/2017				
No.	Activity performed on-site	Site location	Date	Team member
1.	Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring.	1. Nipaniya Site- Madhya Pradesh 2. Nidhi- Rajasthan 3. Bhesada- Rajasthan 4. Pottipadu- Andhra Pradesh 5. Burgula-II- Andhra Pradesh 6. Aspari- Andhra Pradesh 7. Nazeerabad- Telangana	06/12/2017 to 09/12/2017	Mr. Sukanta Das

2.5 Resolution of Findings

The objective of this phase of the joint validation and Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ LGAI's positive conclusion on the project design and Monitoring report. The Corrective Action Requests and Clarification Requests raised by Applus + LGAI were resolved during communications between the Client and Applus + LGAI to guarantee the transparency of the validation process, the concerns raised and responses given are summarized below in the appendix 2.

The Joint final PD and MR Version 03 submitted by PROJECT OWNERS on respectively serves as the basis for the final assessment presented. Additional changes to the project during the validation and verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Areas of validation and verification findings	No. of CL	No. of CAR	No. of FAR
Project design document and Monitoring report	00	01	00
Description of project activity	00	00	00
Application of selected baseline and monitoring methodology and selected standardized baseline			
Applicability of methodology and standardized baseline	00	00	00
Deviation from methodology	00	00	00
Clarification on applicability of methodology, tool and/or standardized baseline	00	00	00

Demonstration of additionality	00	01	00
Emission reductions	00	01	00
Monitoring plan	00	01	00
Local stake holders	00	01	00
NO net Harm	00	01	00
Public opinion	00	01	00
Others (please specify)-Matter related to double counting- for validation	00	01	00
Others (please specify)-Matter related to calibration + Quantification of actual ER details- for verification	00	02	00
Total	00	Validation+ Verification: 10	00

The list of findings and their resolution is presented in appendix 2 of this report.

2.5.1 Forward Action Requests

No FAR was raised during this joint validation and verification process

3 VALIDATION FINDINGS

3.1 Project Details

The proposed project activity involves the installation of Wind Power Projects. The total installed capacity of the project is 493.5 MW. The project is promoted by **Mytrah Energy (India) Pvt. Limited with different SPVs**. Details of the installation of project in respective state is as follows:-

SI No.	Name of the SPVs	Project Site	Location (State)	Project Capacity (MW)	Commissioned Capacity (MW)
1	Mytrah Vayu (Indravati) Pvt. Ltd.	Bhesada	Rajasthan	8.4	8.4
2	Mytrah Vayu (Indravati) Pvt. Ltd.	Pottipadu	Andhra Pradesh	105	105
3	Mytrah Vayu (Som) Pvt. Ltd.	Nidhi	Rajasthan	90	62.9
4	Mytrah Vayu (Som) Pvt. Ltd.	Nipaniya	Madhya Pradesh	30	30
5	Mytrah Vayu (Godavari) Pvt. Ltd.	Nazeerabad	Telangana	100.8	100.8
6	Mytrah Vayu (Krishna) Pvt. Ltd.	Burgula-II	Andhra Pradesh	10.4	1.6
7	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	Aspari	Andhra Pradesh	148.9	148.9

	Total		493.5	457.6
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The Project activity is a new facility (Greenfield) and the electricity generated by the Project will be exported to the Indian Grid. The Project will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The Project Proponent plans to avail the VCS benefits for the Project.

In the Pre- project scenario the equivalent amount of electricity delivered to the grid by the project activity, would have otherwise been generated by the operation of grid-connected fossil fuel based power plants and by the addition of new generation sources.

The project shall result in replacing anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 921,296 tCO₂e per year, thereon displacing 954,418 MWh/year amount of electricity from the grid.

The technical details of the individual Wind turbines are as below:

The project activity comprises of WTG's of Suzlon Energy Limited Model No. S97, WTG's of GE India Industrial Pvt Limited GE 1.7 & 2.3, WTGs of Inox Wind Limited Model No. DF-100 and WTGs of Wind World India Limited Model No. WW-53. The commissioning of these WTGs of the project activity is completed and details are mentioned in section 1.5.

The Specification of 50 WTG (105 MW at Pottipadu site), 4 WTG (8.4 MW at Bhesada site) and 48 WTG (100.8 MW at Nazeerabad site) Suzlon Energy Limited's model: S-97/2100 kW at Pottipadu Site, Bhesada site and Nazeerabad site respectively are as follows:

Power	
Rated power:	2,100.0 kW
Cut-in wind speed:	3.5 m/s
Rated wind speed:	11.0 m/s
Cut-out wind speed:	20.0 m/s
Survival wind speed:	60.0 m/s
Rotor	
Diameter:	97.0 m
Swept area:	7,386.0 m ²
Number of blades:	3
Power density 1:	284.3 W/m ²

Power density 2:	3.5 m ² /kW
Generator	
Type:	Asynchronous
Number:	1
Voltage:	690.0 V
Grid connection:	DFIG
Grid frequency:	50/60 Hz
Hub height:	80/90/100/120 m
Type:	Steel tube
Shape:	conical
Corrosion protection:	painted

The Specification of 47 WTG (79.9 MW at Aspari I) and 90 MW at Nidhi site of GE India Industrial Pvt. Ltd. model: GE 1.7 at Aspari-I Site and Nidhi site respectively are as follows:

Power	
Rated power:	1,700.0 kW
Cut-in wind speed:	3.0 m/s
Rated wind speed:	10.0 m/s
Cut-out wind speed:	23.0 m/s
Wind class (IEC):	S
Rotor	
Diameter:	103.0 m
Swept area:	8,332.0 m ²
Number of blades:	3

Type:	50.2m
Material:	GFRP
Power density 1:	204.0 W/m ²
Power density 2:	4.9 m ² /kW
Gear box	
Type:	spur/planetary
Generator	
Type:	Double Fed Asyn
Number:	1
Grid connection:	IGBT
Grid frequency:	50/60 Hz
Tower	
Hub height:	80/96 m
Type:	steel tube
Shape:	conical
Corrosion protection:	painted

The Specification of 30 WTG (69 MW) GE India Industrial Pvt. Ltd. model- GE 2.3 at Aspari-II are as follows:

Rated Power (MW):	2.3
Wind Class:	IIIs
Cut-In Wind Speed:	3
Nominal Wind speed (8 m/s):	14m/s
Cut-Out Wind Speed:	23

Annual Output (8 m/s) in MWh:	10,887 @ 8.5m/s
Nominal Rotor Diameter (m):	107
Hub Height (m):	80,94
Swept Area (m ²):	8,992
Gearbox Ratio :	130.4 (50hz)
Generator Type:	DFIG
Turbine Output (V):	690
Frequency (HZ):	50

The Specification of 15 WTG (30 MW) Inox Wind Ltd. model: DF 100 at Nipaniya are as follows:

Power	
Rated power:	2,000.0 kW
Cut-in wind speed:	3.0 m/s
Rated wind speed:	11.0 m/s
Cut-out wind speed:	20.0 m/s
Survival wind speed:	52.5 m/s
Wind class (IEC):	IIIb
Rotor	
Diameter:	100.0 m
Swept area:	7,894.0 m ²
Number of blades:	3
Rotor speed, max:	15.7 U/min
Tipspeed:	82 m/s
Material:	Epoxy glass fibre

Power density 1:	253.4 W/m ²
Power density 2:	3.9 m ² /kW
Gear box	
Type:	spur/planetary
Stages:	3
Ratio:	0.121528
Generator	
Type:	doubly fed induction
Number:	1
Speed, max:	1,800.0 U/min
Voltage:	690.0 V
Grid connection:	IGBT
Grid frequency:	50.0 Hz
Tower	
Hub height:	80/92 m
Type:	steel tube
Shape:	conical
Corrosion protection:	painted

The Specification of 10.4 MW Wind World India Limited's model: WW-53 at Burgula-II are as follows:

Power	
Rated power:	800.0 kW
Cut-in wind speed:	3.0 m/s

Rated wind speed:	11.5 m/s
Cut-out wind speed:	28.0 m/s
Rotor	
Diameter:	52.9 m
Swept area:	2,007.0 m ²
Number of blades:	3
Rotor speed, max:	29.5 U/min
Tipspeed:	82 m/s
Material:	fiberglass-epoxy resin
Manufacturer:	Wind-World India
Power density 1:	398.6 W/m ²
Power density 2:	2.5 m ² /kW
Gear box	
Type:	direct drive
Generator	
Type:	synchronous
Number:	1
Speed, max:	29.5 U/min
Grid connection:	inverters
Hersteller:	WindWorld India
Tower	
Hub height:	74 m
Type:	concrete

Shape:	conical
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Assessment team checked the geographical location of the Turbines via Google map and confirm that Latitude and longitude as presented in the Joint PD and MR is correct and accurate. The details of Geo-coordinates are as below:

The location details for the Bhesada project site:

WTG Location No	Village	District	Latitude (N)	Longitude (E)
RSA 126	Naya luna kalan	Jaisalmer	26.6985	71.4897
RSA 128	Naya luna kalan	Jaisalmer	26.6859	71.4923
RSA 286	Pratap pura	Jaisalmer	26.5989	71.6356
RSA 280	Khuda	Jaisalmer	26.6027	71.6137

The location details for the Pottipadu project site:

WTG Location No	Village	District	Latitude (N)	Longitude (E)
PPD-045	Pottipadu	Anantapur	15.0403	77.3681
PPD-046	Pottipadu	Anantapur	15.0442	77.3645
PPD-047	Pottipadu	Anantapur	15.0483	77.3662
PPD-058	Pottipadu	Anantapur	15.0478	77.3818
PPD-076	Pottipadu	Anantapur	15.0515	77.4067
PPD-077	Pottipadu	Anantapur	15.0559	77.3951
PPD-078	Pottipadu	Anantapur	15.0602	77.3949
PPD-081	Pottipadu	Anantapur	15.0731	77.3780
PPD-082	Pottipadu	Anantapur	15.0793	77.3781
PPD-084	Pottipadu	Anantapur	15.0720	77.4075
PPD-085	Pottipadu	Anantapur	15.0673	77.4060
PPD-052	Gulyapalyam	Anantapur	15.0712	77.3578

PPD-055	Gulyapalyam	Anantapur	15.0603	77.3668
PPD-056	Vajrakarur	Anantapur	15.0567	77.3694
PPD-057	Vajrakarur	Anantapur	15.0532	77.3721
PPD-001	Gadehothur	Anantapur	15.0324	77.3214
PPD-002	Gadehothur	Anantapur	15.0274	77.3169
PPD-005	Gadehothur	Anantapur	15.0123	77.3205
PPD-006	Gadehothur	Anantapur	15.0086	77.3231
PPD-011	Pottipadu	Anantapur	15.0308	77.3411
PPD-012	Pottipadu	Anantapur	15.0354	77.3414
PPD-013	Pottipadu	Anantapur	15.0393	77.3407
PPD-014	Pottipadu	Anantapur	15.0442	77.3287
PPD-015	Pottipadu	Anantapur	15.0520	77.3317
PPD-016	Vajrakarur	Anantapur	15.0378	77.3228
PPD-038	Ganjikunta	Anantapur	15.0150	77.3756
PPD-039	Tatrakallu	Anantapur	15.0078	77.3709
PPD-040	Vajrakarur	Anantapur	15.0014	77.3654
PPD-060	Vajrakarur	Anantapur	15.0378	77.3899
PPD-061	Vajrakarur	Anantapur	15.0347	77.3933
PPD-062	Vajrakarur	Anantapur	15.0266	77.3957
PPD-063	Vajrakarur	Anantapur	15.0304	77.3946
PPD-064	Vajrakarur	Anantapur	15.0206	77.3980
PPD-073	Vajrakarur	Anantapur	15.0366	77.4091
PPD-074	Vajrakarur	Anantapur	15.0416	77.4102

PPD-075	Kamalapadu	Anantapur	15.0462	77.4074
PPD-049	Konakondla	Anantapur	15.0811	77.3511
PPD-050	Konakondla	Anantapur	15.0768	77.3517
PPD-053	Gulyapalyam	Anantapur	15.0669	77.3609
PPD-054	Gulyapalyam	Anantapur	15.0659	77.3696
PPD-027	Gulyapalyam	Anantapur	15.0637	77.3432
PPD-028	Gulyapalyam	Anantapur	15.0577	77.3453
PPD-029	Vajrakarur	Anantapur	15.0537	77.3471
PPD-030	Vajrakarur	Anantapur	15.0492	77.3496
PPD-031	Vajrakarur	Anantapur	15.0446	77.3500
PPD-032	Vajrakarur	Anantapur	15.0361	77.3539
PPD-033	Vajrakarur	Anantapur	15.0319	77.3562
PPD-034	Vajrakarur	Anantapur	15.0272	77.3528
PPD-035	Vajrakarur	Anantapur	15.0207	77.3548
PPD-044	Vajrakarur	Anantapur	15.0322	77.3748

The location details for the Nidhi project site for all 53 WTGs:

WTG Location No	Village	District	Latitude (N)	Longitude (E)
NDH-001	Habur	Jaisalmer	27.1770	70.6009
NDH-002	Habur	Jaisalmer	27.1712	70.6035
NDH-003	Habur	Jaisalmer	27.1687	70.6069
NDH-004	Habur	Jaisalmer	27.1646	70.6093
NDH-005	Habur	Jaisalmer	27.1606	70.6123
NDH-006	Habur	Jaisalmer	27.1562	70.6147

NDH-007	Habur	Jaisalmer	27.1520	70.6182
NDH-008	Habur	Jaisalmer	27.1480	70.6210
NDH-009	Habur	Jaisalmer	27.1426	70.6231
NDH-010	Habur	Jaisalmer	27.1403	70.6258
NDH-011	Habur	Jaisalmer	27.1340	70.6296
NDH-012	Habur	Jaisalmer	27.1306	70.6328
NDH-013	Habur	Jaisalmer	27.1264	70.6457
NDH-014	Habur	Jaisalmer	27.1303	70.6428
NDH-015	Habur	Jaisalmer	27.1401	70.6367
NDH-016	Habur	Jaisalmer	27.1439	70.6337
NDH-017	Habur	Jaisalmer	27.1484	70.6290
NDH-018	Habur	Jaisalmer	27.1540	70.6268
NDH-019	Habur	Jaisalmer	27.1575	70.6242
NDH-020	Habur	Jaisalmer	27.1616	70.6214
NDH-021	Habur	Jaisalmer	27.1657	70.6191
NDH-022	Habur	Jaisalmer	27.1701	70.6160
NDH-023	Habur	Jaisalmer	27.1741	70.6130
NDH-024	Habur	Jaisalmer	27.1792	70.6095
NDH-025	Habur	Jaisalmer	27.1827	70.6066
NDH-026	Habur	Jaisalmer	27.1856	70.6040
NDH-027	Habur	Jaisalmer	27.1531	70.6382
NDH-028	Habur	Jaisalmer	27.1490	70.6412
NDH-029	Habur	Jaisalmer	27.1437	70.6439

NDH-030	Habur	Jaisalmer	27.1409	70.6470
NDH-031	Habur	Jaisalmer	27.1359	70.6493
NDH-032	Habur	Jaisalmer	27.1321	70.6526
NDH-033	Habur	Jaisalmer	27.1283	70.6552
NDH-034	Habur	Jaisalmer	27.1242	70.6571
NDH-035	Habur	Jaisalmer	27.1139	70.6741
NDH-036	Habur	Jaisalmer	27.1174	70.6718
NDH-037	Habur	Jaisalmer	27.1216	70.6693
NDH-038	Habur	Jaisalmer	27.1256	70.6667
NDH-039	Habur	Jaisalmer	27.1287	70.6636
NDH-040	Habur	Jaisalmer	27.1337	70.6390
NDH-041	Habur	Jaisalmer	27.1331	70.6707
NDH-042	Habur	Jaisalmer	27.1289	70.6744
NDH-043	Habur	Jaisalmer	27.1266	70.6777
NDH-044	Habur	Jaisalmer	27.1192	70.6606
NDH-045	Habur	Jaisalmer	27.1351	70.6808
NDH-046	Habur	Jaisalmer	27.1407	70.6771
NDH-047	Habur	Jaisalmer	27.1431	70.6942
NDH-048	Habur	Jaisalmer	27.1398	70.6974
NDH-049	Habur	Jaisalmer	27.1357	70.7002
NDH-050	Habur	Jaisalmer	27.1306	70.7023
NDH-051	Habur	Jaisalmer	27.1267	70.7054
NDH-052	Habur	Jaisalmer	27.1358	70.7070

NDH-053	Habur	Jaisalmer	27.1430	70.7026
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The location details for the Nipaniya project site:

WTG Location No	Village	District	Latitude (N)	Longitude (E)
NPY-P-58	Jamuniya	Mandsaur	24.2041	75.6108
NPY-P3-41	Dhamniya Diwan	Mandsaur	24.1484	75.6209
NPY-P3-114	Nariya Bujurg	Mandsaur	24.2625	75.6194
NPY-P3-116	Manpura	Mandsaur	24.2537	75.6161
NPY-P3-117	Nariya Bujurg	Mandsaur	24.2484	75.6159
NPY-P3-120	Aakli Shivdas	Mandsaur	24.2349	75.6133
NPY-P3-127	Sagoriya	Mandsaur	24.2197	75.6075
NPY-P-59	Sagoriya	Mandsaur	24.2145	75.6107
NPY-P3-157	Jamuniya	Mandsaur	24.2073	75.6093
NPY-P3-112	Bardiya Amra	Mandsaur	24.2740	75.6223
NPY-P3-124	Jamuniya	Mandsaur	24.2257	75.5991
NPY-P3-154	Guradiyamata	Mandsaur	24.2361	75.6432
NPY-P3-119	Manpura	Mandsaur	24.2300	75.5993
NPY-P-51	Barkheda Uda	Mandsaur	24.1654	75.6055
NPY-P3-128	Sagoriya	Mandsaur	24.2174	75.6098

The location details for the Nazeerabad project site:

WTG Location No	Village	District	Latitude (N)	Longitude (E)
NRB01	Nazeerabad	Rangareddy	17.2224	77.9471
NRB02	Nazeerabad	Rangareddy	17.2187	77.9479

NRB03	Nazeerabad	Rangareddy	17.2162	77.9491
NRB04	Nazeerabad	Rangareddy	17.2129	77.9502
NRB05	Nazeerabad	Rangareddy	17.2099	77.9513
NRB06	Nazeerabad	Rangareddy	17.2068	77.9510
NRB07	Nazeerabad	Rangareddy	17.2040	77.9518
NRB11	Nazeerabad	Rangareddy	17.1909	77.9314
NRB14	Nazeerabad	Rangareddy	17.1886	77.9362
NRB15	Nazeerabad	Rangareddy	17.1844	77.9300
NRB16	Nazeerabad	Rangareddy	17.1788	77.9233
NRB17	Nazeerabad	Rangareddy	17.1752	77.9234
NRB18	Nazeerabad	Rangareddy	17.1716	77.9242
NRB19	Nazeerabad	Rangareddy	17.1700	77.9295
NRB20	Nazeerabad	Rangareddy	17.1675	77.9230
NRB22	Nazeerabad	Rangareddy	17.1617	77.9171
NRB23	Nazeerabad	Rangareddy	17.1598	77.9247
NRB24	Nazeerabad	Rangareddy	17.1554	77.9300
NRB26	Nazeerabad	Rangareddy	17.1506	77.9221
NRB27	Nazeerabad	Rangareddy	17.1480	77.9295
NRB28	Nazeerabad	Rangareddy	17.1473	77.9220
NRB29	Nazeerabad	Rangareddy	17.1442	77.9128
NRB30	Nazeerabad	Rangareddy	17.1443	77.9282
NRB31	Nazeerabad	Rangareddy	17.1420	77.9208
NRB34	Nazeerabad	Rangareddy	17.1352	77.9174

NRB35	Nazeerabad	Rangareddy	17.1328	77.9273
NRB36	Nazeerabad	Rangareddy	17.1299	77.9436
NRB39	Nazeerabad	Rangareddy	17.1307	77.9328
NRB40	Nazeerabad	Rangareddy	17.1247	77.9443
NRB41	Nazeerabad	Rangareddy	17.1267	77.9321
NRB43	Nazeerabad	Rangareddy	17.1223	77.9303
NRB44	Nazeerabad	Rangareddy	17.1203	77.9405
NRB48	Nazeerabad	Rangareddy	17.1189	77.9478
NRB49	Nazeerabad	Rangareddy	17.1155	77.9566
NRB54	Nazeerabad	Rangareddy	17.1047	77.9537
NRB56	Nazeerabad	Rangareddy	17.0990	77.9548
NRB57	Nazeerabad	Rangareddy	17.0960	77.9551
NRB58	Nazeerabad	Rangareddy	17.0895	77.9509
NRB60	Nazeerabad	Rangareddy	17.1978	77.9525
NRB62	Nazeerabad	Rangareddy	17.1431	77.9875
NRB63	Nazeerabad	Rangareddy	17.1390	77.9877
NRB64	Nazeerabad	Rangareddy	17.1354	77.9894
NRB66	Nazeerabad	Rangareddy	17.1292	77.9909
NRB67	Nazeerabad	Rangareddy	17.1248	77.9920
NRB68	Nazeerabad	Rangareddy	17.1214	77.9941
NRB69	Nazeerabad	Rangareddy	17.1153	77.9932
NRB71	Nazeerabad	Rangareddy	17.1042	77.9862
NRB72	Nazeerabad	Rangareddy	17.0866	77.9500

The location details for the Burgula-II project site:

WTG Location No	Village	District	Latitude (N)	Longitude (E)
BRG-552	Burugula	Kurnool	15.19516	77.93793
BRG-553	Burugula	Kurnool	15.19682	77.93758

The location details for the Aspari-I project site:

WTG Location No	Village	District	Latitude (N)	Longitude (E)
ASP-005	Aspari	Kurnool	15.4721	77.3977
ASP-006	Aspari	Kurnool	15.4685	77.3975
ASP-007	Aspari	Kurnool	15.4651	77.3981
ASP-008	Aspari	Kurnool	15.4613	77.3984
ASP-009	Aspari	Kurnool	15.4561	77.3998
ASP-010	Aspari	Kurnool	15.4527	77.3985
ASP-011	Aspari	Kurnool	15.4491	77.4002
ASP-012	Aspari	Kurnool	15.4455	77.4004
ASP-013	Aspari	Kurnool	15.4424	77.3998
ASP-014	Aspari	Kurnool	15.4383	77.3990
ASP-015	Aspari	Kurnool	15.4350	77.3975
ASP-016	Aspari	Kurnool	15.4315	77.3978
ASP-017	Aspari	Kurnool	15.4280	77.3981
ASP-018	Aspari	Kurnool	15.4228	77.4094
ASP-019	Aspari	Kurnool	15.4191	77.4079
ASP-021	Aspari	Kurnool	15.4149	77.4068
ASP-022	Aspari	Kurnool	15.4093	77.4092

ASP-023	Aspari	Kurnool	15.4057	77.4099
ASP-024	Aspari	Kurnool	15.4011	77.4110
ASP-025	Aspari	Kurnool	15.4455	77.4124
ASP-026	Aspari	Kurnool	15.4413	77.4126
ASP-027	Aspari	Kurnool	15.4369	77.4140
ASP-028	Aspari	Kurnool	15.4319	77.4140
ASP-029	Aspari	Kurnool	15.4266	77.4136
ASP-061	Aspari	Kurnool	15.3893	77.4220
ASP-062	Aspari	Kurnool	15.3856	77.4186
ASP-063	Aspari	Kurnool	15.3826	77.4137
ASP-064	Aspari	Kurnool	15.3792	77.4111
ASP-065	Aspari	Kurnool	15.3754	77.4103
ASP-066	Aspari	Kurnool	15.3721	77.4079
ASP-030	Aspari	Kurnool	15.4416	77.4269
ASP-031	Aspari	Kurnool	15.4379	77.4272
ASP-032	Aspari	Kurnool	15.4339	77.4278
ASP-033	Aspari	Kurnool	15.4305	77.4279
ASP-035	Aspari	Kurnool	15.4242	77.4302
ASP-036	Aspari	Kurnool	15.4200	77.4328
ASP-037	Aspari	Kurnool	15.4165	77.4356
ASP-038	Aspari	Kurnool	15.4124	77.4365
ASP-039	Aspari	Kurnool	15.4089	77.4376
ASP-042	Aspari	Kurnool	15.4211	77.4504

ASP-043	Aspari	Kurnool	15.4159	77.4571
ASP-087	Aspari	Kurnool	15.4340	77.4495
ASP-088	Aspari	Kurnool	15.4406	77.4480
ASP-089	Aspari	Kurnool	15.4444	77.4465
ASP-090	Aspari	Kurnool	15.4474	77.4443
ASP-091	Aspari	Kurnool	15.4518	77.4434
ASP-092	Aspari	Kurnool	15.4553	77.4430

The location details for the Aspari-II project site:

WTG Location No	Village	District	Latitude (N)	Longitude (E)
ASP-001	Aspari	Kurnool	15.4834	77.4121
ASP-002	Aspari	Kurnool	15.4791	77.4161
ASP-003	Aspari	Kurnool	15.4745	77.4177
ASP-040	Aspari	Kurnool	15.3942	77.4422
ASP-044	Aspari	Kurnool	15.4117	77.4612
ASP-046	Aspari	Kurnool	15.4053	77.4667
ASP-047	Aspari	Kurnool	15.3907	77.4695
ASP-048	Aspari	Kurnool	15.3969	77.4698
ASP-050	Aspari	Kurnool	15.4208	77.4773
ASP-052	Aspari	Kurnool	15.4161	77.4829
ASP-053	Aspari	Kurnool	15.4096	77.4789
ASP-054	Aspari	Kurnool	15.4059	77.4797
ASP-055	Aspari	Kurnool	15.3993	77.4840
ASP-071	Aspari	Kurnool	15.3902	77.4451

ASP-072	Aspari	Kurnool	15.3864	77.4443
ASP-073	Aspari	Kurnool	15.3826	77.4443
ASP-074	Aspari	Kurnool	15.3779	77.4442
ASP-081	Aspari	Kurnool	15.3792	77.4878
ASP-082	Aspari	Kurnool	15.3758	77.4913
ASP-083	Aspari	Kurnool	15.3722	77.4924
ASP-084	Aspari	Kurnool	15.3688	77.4934
ASP-086	Aspari	Kurnool	15.3616	77.4953
ASP-093	Aspari	Kurnool	15.4658	77.4388
ASP-094	Aspari	Kurnool	15.4705	77.4381
ASP-095	Aspari	Kurnool	15.4740	77.4383
ASP-130	Aspari	Kurnool	15.4631	77.4228
ASP-131	Aspari	Kurnool	15.4528	77.4126
ASP-132	Aspari	Kurnool	15.4492	77.4123
ASP-138	Aspari	Kurnool	15.4570	77.4138
ASP-139	Aspari	Kurnool	15.4758	77.3987

The project is a large scale project that involves setting up of 493.5MW of Wind power projects.

Project Scale	
Project	
Large project	✓

As the Estimated GHG emission reductions or removals per year is 921,296 (tCO₂e) which is more than 300,000 tonnes of CO₂e per year, thus the project falls in the category of Large Project.

Assessment team checked that the first project activity instance of the project under consideration was commissioned and power generation started on 30/12/2015. Hence this date is considered as group project start date as per the requirement of VCS standard version 3.7.

Assessment team checked the Project Start Date: 30/12/2015

The project start date is the date on which first Wind power plant was commissioned under the project activity.

The commissioning details for the Bhesada project site is given below:

Location No	Commissioning Date
RSA 126	30/12/2015
RSA 128	30/12/2015
RSA 286	30/12/2015
RSA 280	30/12/2015

The commissioning details for the Pottipadu project site is given below:

Location No	Commissioning Date
PPD-045	31/12/2015
PPD-046	31/12/2015
PPD-047	31/12/2015
PPD-058	31/12/2015
PPD-076	31/12/2015
PPD-077	31/12/2015
PPD-078	31/12/2015
PPD-081	31/12/2015
PPD-082	31/12/2015
PPD-084	31/12/2015
PPD-085	31/12/2015

PPD-052	05/03/2016
PPD-055	05/03/2016
PPD-056	05/03/2016
PPD-057	05/03/2016
PPD-001	06/03/2016
PPD-002	06/03/2016
PPD-005	06/03/2016
PPD-006	06/03/2016
PPD-011	06/03/2016
PPD-012	06/03/2016
PPD-013	06/03/2016
PPD-014	06/03/2016
PPD-015	06/03/2016
PPD-016	06/03/2016
PPD-038	06/03/2016
PPD-039	06/03/2016
PPD-040	06/03/2016
PPD-060	06/03/2016
PPD-061	06/03/2016
PPD-062	06/03/2016
PPD-063	06/03/2016
PPD-064	06/03/2016
PPD-073	06/03/2016

PPD-074	06/03/2016
PPD-075	06/03/2016
PPD-049	06/03/2016
PPD-050	06/03/2016
PPD-053	06/03/2016
PPD-054	26/03/2016
PPD-027	27/03/2016
PPD-028	27/03/2016
PPD-029	27/03/2016
PPD-030	27/03/2016
PPD-031	27/03/2016
PPD-032	27/03/2016
PPD-033	27/03/2016
PPD-034	27/03/2016
PPD-035	27/03/2016
PPD-044	27/03/2016

The commissioning details for the Nidhi project site is given below:

Location No	Commissioning Date
NDH 01	31/03/2016
NDH 02	31/03/2016
NDH 03	31/03/2016
NDH 04	31/03/2016
NDH 05	31/03/2016

NDH 06	31/03/2016
NDH 07	31/03/2016
NDH 21	31/03/2016
NDH 22	31/03/2016
NDH 23	31/03/2016
NDH 24	31/03/2016
NDH 25	31/03/2016
NDH 26	31/03/2016
NDH 08	31/03/2016
NDH 09	31/03/2016
NDH 10	31/03/2016
NDH 11	31/03/2016
NDH 12	31/03/2016
NDH 16	31/03/2016
NDH 17	31/03/2016
NDH 18	31/03/2016
NDH 19	31/03/2016
NDH 20	31/03/2016
NDH 27	31/03/2016
NDH 28	31/03/2016
NDH 29	31/03/2016
NDH 30	31/03/2016
NDH 31	31/03/2016

NDH 32	31/03/2016
NDH 33	31/03/2016
NDH 34	31/03/2016
NDH 35	31/03/2016
NDH 36	31/03/2016
NDH 37	31/03/2016
NDH 38	31/03/2016
NDH 39	31/03/2016
NDH 44	31/03/2016

The commissioning details for the Nipaniya project site is given below:

Location No	Commissioning Date
NPY-P-58	19/03/2016
NPY-P3-41	19/03/2016
NPY-P3-114	19/03/2016
NPY-P3-116	19/03/2016
NPY-P3-117	19/03/2016
NPY-P3-120	20/01/2016
NPY-P3-127	19/03/2016
NPY-P-59	19/03/2016
NPY-P3-157	19/03/2016
NPY-P3-112	27/03/2016
NPY-P3-124	29/03/2016
NPY-P3-154	29/03/2016

NPY-P3-119	19/03/2016
NPY-P-51	29/03/2016
NPY-P3-128	27/03/2016

The commissioning details for the Nazeerabad project site is given below:

Location No	Commissioning Date
NRB-2	27/03/2016
NRB-3	27/03/2016
NRB-4	27/03/2016
NRB-5	27/03/2016
NRB-6	27/03/2016
NRB-15	27/03/2016
NRB-14	27/03/2016
NRB-16	27/03/2016
NRB-17	27/03/2016
NRB-26	27/03/2016
NRB-28	27/03/2016
NRB-31	27/03/2016
NRB-34	27/03/2016
NRB-40	27/03/2016
NRB-41	27/03/2016
NRB-43	27/03/2016
NRB-35	27/03/2016
NRB-72	27/03/2016

NRB-49	27/03/2016
NRB-56	27/03/2016
NRB-58	27/03/2016
NRB-57	27/03/2016
NRB-54	31/03/2016
NRB-30	31/03/2016
NRB-62	31/03/2016
NRB-07	31/03/2016
NRB-44	31/03/2016
NRB-71	31/03/2016
NRB-36	31/03/2016
NRB-63	31/03/2016
NRB-19	31/03/2016
NRB-69	31/03/2016
NRB-23	31/03/2016
NRB-22	31/03/2016
NRB-01	31/03/2016
NRB-64	31/03/2016
NRB-27	31/03/2016
NRB-11	31/05/2016
NRB-39	31/05/2016
NRB-24	31/05/2016
NRB-29	31/05/2016

NRB-18	31/05/2016
NRB-66	31/05/2016
NRB-60	31/05/2016
NRB-68	31/05/2016
NRB-67	31/05/2016
NRB-20	31/05/2016
NRB-48	06/03/2017

The commissioning details for the Burgula-II project site is given below:

Location No	Commissioning Date
BRG-552	30/03/2017
BRG-553	30/03/2017

The commissioning details for the Aspari-I project site is given below:

Location No	Commissioning Date
ASP-5	15/10/2016
ASP-6	15/10/2016
ASP-7	15/10/2016
ASP-8	15/10/2016
ASP-9	15/10/2016
ASP-10	15/10/2016
ASP-11	15/10/2016
ASP-12	15/10/2016
ASP-13	15/10/2016
ASP-14	15/10/2016

ASP-15	15/10/2016
ASP-16	15/10/2016
ASP-17	15/10/2016
ASP-18	15/10/2016
ASP-19	15/10/2016
ASP-21	15/10/2016
ASP-22	15/10/2016
ASP-23	15/10/2016
ASP-24	15/10/2016
ASP-25	15/10/2016
ASP-26	15/10/2016
ASP-27	15/10/2016
ASP-28	15/10/2016
ASP-29	15/10/2016
ASP-61	15/10/2016
ASP-62	15/10/2016
ASP-63	15/10/2016
ASP-64	15/10/2016
ASP-65	15/10/2016
ASP-66	15/10/2016
ASP-31	20/10/2016
ASP-30	20/10/2016
ASP-87	20/10/2016

ASP-33	20/10/2016
ASP-90	20/10/2016
ASP-32	20/10/2016
ASP-88	20/10/2016
ASP-89	20/10/2016
ASP-43	20/10/2016
ASP-36	20/10/2016
ASP-42	20/10/2016
ASP-35	20/10/2016
ASP-37	20/10/2016
ASP-91	20/10/2016
ASP-92	20/10/2016
ASP-38	20/10/2016
ASP-39	20/10/2016

The commissioning details for the Aspari-II project site is given below:

Location No	Commissioning Date
ASP-1	16/03/2017
ASP-2	16/03/2017
ASP-3	16/03/2017
ASP-44	16/03/2017
ASP-139	16/03/2017
ASP-93	16/03/2017
ASP-94	16/03/2017

ASP-95	16/03/2017
ASP-53	25/03/2017
ASP-54	25/03/2017
ASP-50	25/03/2017
ASP-40	25/03/2017
ASP-71	25/03/2017
ASP-72	25/03/2017
ASP-46	25/03/2017
ASP-73	25/03/2017
ASP-81	25/03/2017
ASP-86	25/03/2017
ASP-84	25/03/2017
ASP-55	25/03/2017
ASP-130	25/03/2017
ASP-138	25/03/2017
ASP-131	25/03/2017
ASP-132	25/03/2017
ASP-82	25/03/2017
ASP-83	25/03/2017
ASP-47	25/03/2017
ASP-48	25/03/2017
ASP-74	25/03/2017
ASP-52	25/03/2017

Assessment team checked the project crediting period:

Crediting Period Start date: 30/12/2015⁴

Crediting Period End date: 29/12/2025

The project activity adopts renewable crediting period of 10 years period which can be renewed for maximum 2 times.

In the Pre- project scenario the entire 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. The baseline as identified in section 2.4 of the Joint PD and MR would continue to be in pre-project scenario. Assessment team also confirms that the project is in compliance with applicable local law and guidance of the host country for the implementation of renewable technology. The Project has received necessary approvals for development and commissioning for each plants from the state Nodal agencies and is in compliance to the local laws and regulations. The relevant national laws and regulations pertaining to generation of energy in India are:

- Electricity Act 2003
- National Electricity Policy 2005
- Tariff Policy 2006

The Project activity conforms to all the applicable laws and regulations in India:

- Power generation using wind energy is not a legal requirement or a mandatory option.
- There are state and sectoral policies, framed primarily to encourage wind power projects. These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments.
- The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation.
- There is no legal requirement on the choice of a particular technology for power generation.

Assessment team checked the details of the following project proponent as per right of Use definition of VCS standard version 3.7 and found the details to be correct. The Project is owned by Individual investors hence it possess right of use of ER credits. The Ownership is demonstrated through the following documents.

- 1) Commissioning certificates for WTGs in the name of Mytrah Vayu (Indravati) Pvt. Ltd., Mytrah Vayu (Som) Pvt. Ltd., Mytrah Vayu (Godavari) Pvt. Ltd., Mytrah Vayu (Krishna)

⁴ Start date of crediting period is 30/12/2015, as on this day 1st set of WTGs associated to the one of the bundle Bhesada project activity starts its commercial operations. Accordingly end date of the crediting period is also been revised

Pvt. Ltd. and Mytrah Vayu (Tungabhadra) Pvt. Ltd. issued by respective state nodal agencies/authorities of the Rajasthan, Madhya Pradesh, Telangana & Andhra Pradesh States of India. These companies are the subsidiary of the Mytrah Energy (India) Pvt. Limited.

- 2) Power Purchase Agreement with respective State Electricity Board for sale of electricity by the Mytrah Vayu (Indravati) Pvt. Ltd., Mytrah Vayu (Som) Pvt. Ltd., Mytrah Vayu (Godavari) Pvt. Ltd., Mytrah Vayu (Krishna) Pvt. Ltd. and Mytrah Vayu (Tungabhadra) Pvt. Ltd.

The details are as follows:

Organization name	Mytrah Vayu (Indravati) Pvt. Ltd.
Contact person	Ms. Mangaljyoti Meena
Title	Manager
Address	8001, 8th Floor, Q-City, Nanakramguda, Gachibowli, Hyderabad 500032, Telangana, India
Telephone	-
Email	-

Organization name	Mytrah Vayu (Som) Pvt. Ltd.
Contact person	Ms. Mangaljyoti Meena
Title	Manager
Address	8001, 8th Floor, Q-City, Nanakramguda, Gachibowli, Hyderabad 500032, Telangana, India
Telephone	-
Email	-

Organization name	Mytrah Vayu (Godavari) Pvt. Ltd.
Contact person	Ms. Mangaljyoti Meena
Title	Manager
Address	8001, 8th Floor, Q-City, Nanakramguda, Gachibowli, Hyderabad 500032, Telangana, India
Telephone	-
Email	-

Organization name	Mytrah Vayu (Krishna) Pvt. Ltd.
Contact person	Ms. Mangaljyoti Meena
Title	Manager
Address	8001, 8th Floor, Q-City, Nanakramguda, Gachibowli, Hyderabad 500032, Telangana, India
Telephone	-
Email	-

Organization name	Mytrah Vayu (Tungabhadra) Pvt. Ltd.
Contact person	Ms. Mangaljyoti Meena
Title	Manager
Address	8001, 8th Floor, Q-City, Nanakramguda, Gachibowli, Hyderabad 500032, Telangana, India
Telephone	-
Email	-

Other Entities Involved in the Project

Organization name	EKI Energy Services Limited
Role in the project	Project Consultant
Contact person	Mr. Ramkrishna Patil
Title	General Manager
Address	Office No. 201, EnKing Embassy, Plot No. 48, Scheme No. 78, Part II, Vijay Nagar INDORE – 452010, India.
Telephone	+91-9096562065
Email	NA

A short description for applicability and project boundary is presented here and detailed description is provided in section 3.1 of this report.

Applicability condition for ACM 0002 version 17 is verified (for the project activity).

- The project activity is installation of a new grid connected renewable energy power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant) and hence this criterion is applicable. Assessment team confirmed the same during the site visit of the project activity.
- The proposed project activity will be an installation of a new grid connected wind power plant and hence this condition is met. Assessment team confirmed the same during the site visit of the project activity.
- The proposed project activity do not involve any capacity additions, retrofits or replacements and therefore this condition is not applicable. Assessment team confirmed the same during the site visit of the project activity.
- The proposed project activity is a grid connected wind power project. This condition is applicable only for hydro power plants and not applicable for wind projects. Hence this criterion is not applicable. Assessment team confirmed the same during the site visit of the project activity.
- The proposed project activity is a grid connected wind energy power project. This condition is applicable only for hydro power plants and not applicable for wind projects. Assessment team confirmed the same during the site visit of the project activity.
- The proposed project activity is a grid connected wind power project. This condition is applicable only for hydro power plants and not applicable for wind projects. Assessment team confirmed the same during the site visit of the project activity.
- The project activity will be installation of a new grid connected wind power project and does not involve switching from fossil fuel to renewable energy and hence this criterion is not relevant to the project activity. This project activity does not involve any biomass based power plants and hence this criterion is not applicable to the project activity. Assessment team confirmed the same during the site visit of the project activity.
- The project activity will be a new grid connected wind power plant and not a retrofits, replacement or capacity additions and therefore this criterion is not applicable to the project activity. Assessment team confirmed the same during the site visit of the project activity.

Applicability conditions of “Tool to calculate the emission factor for an electricity system as per the requirement of ACM 0002 version 17.

- OM, BM and CM are estimated using the tool for calculating baseline emissions. Applicability criteria are met. Assessment team confirmed the same during the document review of the revised joint PD and MR version 02
- As the project activity is grid connected, this condition is applicable and the emission factor has been calculated accordingly. Assessment team confirmed the same during the document review of the revised joint PD and MR version 02
- The project activity will be located in India, a non-Annex I country. Therefore, this criterion is not applicable for the project activity. Assessment team confirmed the same during the document review of the revised joint PD and MR Version 02 and also during the validation site visit.
- The project activity will be grid connected renewable energy project and CO₂ emission factor is not considered for biofuels. Assessment team confirmed the same during the document review of the revised joint PD and MR Version 02 and also during the validation site visit

The project activity qualifies as Type I during every year of the crediting period in accordance with applicable provisions for project activity eligibility as discussed above. Also the total installed capacity of project activity is 493.5 MW which is applicable as per large scale project activities methodology ACM0002: Grid-connected electricity generation from renewable sources Version 17.0. The project capacity will always remain the same and hence the project activity will always be large scale project activities throughout the crediting period and thereafter

Verification of the project boundary:

Project boundary has been ascertained and confirmed during the site visit using para 21 of ACM0002 (Version 17.0)– “The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to”.

Hence the project boundary includes the renewable energy power turbine generator, sub-stations, grid and all power plants connected to grid. The proposed project activity will evacuate power to the grid. The boundary also extends to the project power plant and all power plants connected physically to the electricity system that the VCS project power plant is connected to”.

The calculation of net electricity supplied to grid is under purview of state electricity board and project activity Owner or project activity Implementer does not have any control on it. Thus for project activity net electricity supplied to grid is the monitoring parameter which is used for ER calculations.

It is to be noted that metering arrangement is under control of state electricity board and PP do not have any control on it.

The sources and GHG gases involved for proposed Project activity are as below

Source		Gas	Included	Justification/Explanation
Baseline	CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity.	CO ₂	Yes	Major emission sources.
		CH ₄	No	Excluded for simplification. This is conservative
		N ₂ O	No	Excluded for simplification. This is conservative
Project activity	For geothermal power plants, fugitive emissions of CH ₄ and CO ₂ from non-condensable gases contained in geothermal steam	CO ₂	No	A project activity instance does not involve any Geothermal Power plant. Hence not applicable
		CH ₄	No	A project activity instance does not involve any Geothermal Power plant. Hence not applicable
		N ₂ O	No	A project activity instance does not involve any Geothermal Power plant. Hence not applicable
	CO ₂ emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants	CO ₂	No	A project activity instance does not involve solar thermal or geothermal power plants. Hence not applicable
		CH ₄	No	A project activity instance does not involve solar thermal or geothermal power plants. Hence not applicable
		N ₂ O	No	A project activity instance does not involve solar thermal or geothermal power plants. Hence not applicable
	For hydro power plants, emissions of CH ₄ from the reservoir	CO ₂	No	A project activity instance does not involve hydro power plants. Hence neglected

The project activity involved setting up of a wind plant to harness the power of wind to produce electricity and supply to grid. In the absence of the group project activity, the equivalent amount of power would have been supplied by the state grid (part of INDIAN grid), which is fed mainly by fossil fuel fired plants.

Hence, the baseline for the project activity is the equivalent amount of power from the INDIAN grid.

During conceptualization of the project activity, board of directors of the Individual project proponents considered the VCS revenue to improve the project financials. The board meeting dates for individual Project owners is provided below:

Name of the SPVs	Location (State)	Commissioned Capacity (MW)	Board resolution
Mytrah Vayu (Indravati) Pvt. Ltd.	Rajasthan	8.4	30/07/2015
Mytrah Vayu (Indravati) Pvt. Ltd.	Andhra Pradesh	105	30/07/2015
Mytrah Vayu (Som) Pvt. Ltd.	Rajasthan	62.9	30/07/2015

Mytrah Vayu (Som) Pvt. Ltd.	Madhya Pradesh	30	30/07/2015
Mytrah Vayu (Godavari) Pvt. Ltd.	Telangana	100.8	30/07/2015
Mytrah Vayu (Krishna) Pvt. Ltd.	Andhra Pradesh	1.6	30/07/2015
Mytrah Vayu (Tungabhadra) Pvt. Ltd.	Andhra Pradesh	148.9	30/07/2015

In continuation to the board decision, PROJECT OWNERS issued the respective purchase order for the supply of Wind turbines.

Joint PD and MR mentioned that the project would not be economically or financially feasible without the revenue from the sale of Verified emission reductions (VERs). The claim of the project developer has been assessed by the Validation Team through the following steps

a) Suitability of investment analysis, financial indicator and benchmark:

Assessment team checked that in line with VCS Standard version 3.7, the additionality of the Project activity is ascertained in line with the applicable guidance from the UNFCCC. The demonstration of additionality for the proposed Project activity is being carried out in accordance with the additionality tool provided by the UNFCCC i.e. "Tool for demonstration and assessment of Additionality" Version 07.0.0,. The tool provides a step-wise approach to demonstrate additionality which is displayed below:

Step 0: Demonstration whether the proposed project activity is the first-of-its-kind

The proposed project activity is not the first-of-its-kind. Hence not applicable.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a: Define alternatives to the project activity:

Identify realistic and credible alternative(s) available to the project participants or similar project developers that provide outputs or services comparable with the proposed VCS project activity.

The purpose of the project activity is to generate electrical power using wind energy and feed the electricity generated to the grid. Hence, the following alternatives are considered:

Alternative 1: The proposed project activity not undertaken as a VCS project activity.

The PP could proceed with the implementation of the project without Carbon credit benefits. The electricity produced from the renewable energy project would have been sold to the grid. This is in compliance with all applicable legal and regulatory requirements and can be a part of the baseline. However, the Project activity is not feasible without revenues from sale of Carbon Credits. This argument has been discussed in step 2 of the Additionality section.

Alternative 2: No proposed project activity and equivalent amount of energy would have been produced by the grid electricity system through its currently running power plants and by new capacity addition to the grid i.e. Continuation of the present situation.

The PP would have continued without investment in Project activity with usual business activities. The grid would continue with the fossil fuel based power projects and this would result in GHG emissions. Hence, the new capacity add-on from a fossil fuel based power plant is appropriate, realistic & credible baseline alternative for the project activity.

Outcome of Sub-step 1a: All the realistic alternatives for the project activity have been enlisted above.

Sub-step 1b: Consistency with mandatory laws and regulations:

The alternative(s) shall be in compliance with all applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution. (This sub-step does not consider national and local policies that do not have legally-binding status.).

The relevant national laws and regulations pertaining to generation of energy in India are:

- Electricity Act 2003
- National Electricity Policy 2005
- Tariff Policy 2006

The Project activity conforms to all the applicable laws and regulations in India:

- Power generation using wind energy is not a legal requirement or a mandatory option.
- There are state and sectoral policies, framed primarily to encourage wind power projects. These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments.
- The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation.
- There is no legal requirement on the choice of a particular technology for power generation.

Outcome of Sub-step 1b: Hence, both the alternatives enlisted above are found to comply with the mandatory laws and regulations taking into account the enforcement of the legislations in the region or country and EB decisions on national and/or sectoral policies and regulations. However, Alternative 2 has been selected as the appropriate baseline alternative for this project activity.

Step 2: Investment analysis

Determine whether the proposed project activity is economically or financially less attractive than at least one other alternative, identified in step 1, without the revenue from the sale of emission reductions credits. To conduct the investment analysis, use the following sub-steps:

Sub-step 2a: Determine appropriate analysis method and Sub-step 2b (Option III): Apply benchmark analysis

Project developer had demonstrated that the financial returns of the proposed VCS project activity would be insufficient to justify the required capital investment as per VVS version 01.0 for the project activity. In the Initial PD version 01 PROJECT OWNERS has adopted a conservative approach to identify the benchmark for the project activity. The project is earning revenue from the installation of the project activity. Thus simple cost analysis is not appropriate. Also in the absence of the project activity grid electricity would have been the obvious choice for the Project which requires no investment. Hence investment comparison analysis is also not appropriate for the project activity. Therefore, benchmark analysis (Option III) is used for the project activity as per project type and decision-making context. Therefore, the Expected return on equity is considered appropriate benchmark. Accordingly, the post-tax Equity IRR has been considered as the relevant financial indicator for the project activity. Moreover, the financial indicator selected by the PP is correct based on the fact that tool do not restrict the PP to either use project IRR or Equity IRR. This is under the prerogative of the PP to select appropriate indicator based on his preferences to know the IRR based on his equity investment or debt investment. The same is this acceptable to the assessment team. Assessment team however checked the Equity IRR calculation and thus found that input assumptions used for the calculation of Equity IRR is applicable at the time of investment decision of the project and thus is in accordance with the relevant guideline of the tool.

Choice of Benchmark:

As per Investment Analysis tool, Required/expected returns on equity are appropriate benchmarks for an equity IRR. The Equity IRR is considered as the financial indicator and the benchmarks used is cost of equity. Thus assessment team confirms that the benchmarks used are applicable to the project activity and the type of IRR calculation presented.

At the time of decision made of project activity, Version 06 of methodological tool "Investment Analysis" (EB 85 Annex 12) was the latest available tool to PP, hence PP has considered the same tool for default value of return on equity. The default value of Return on Equity for Group-1 projects in India is 11.10%.

As per paragraph 7 of Appendix A of the above mentioned document, "In situations where an investment analysis is carried out in nominal terms, project participants can convert the real term values provided in the table below to nominal values by adding the inflation rate. The inflation rate shall be obtained from the **inflation forecast of the central bank of the host country for the duration of the crediting period**. If this information is not available, the target inflation rate of the central bank shall be used. If this information is also not available, then the average forecasted inflation rate for the host country published by the IMF (International Monetary Fund World Economic Outlook) or the World Bank for the next five years after the start of the project activity shall be used".

Default Value Benchmark:

As per para 20 of EB 92, Annex 5 the cost of equity is determined by selecting the values provided in the Appendix, i.e. Default values for cost of equity (expected return on equity) is presented below:

Appendix in EB 92, Annex 5 specifies default value of expected return on equity in real terms for Energy Industries (Group 1) in India = **11.10%**

The Required return on equity (benchmark) was computed in the following manner:

$$\text{Nominal Benchmark}^5 = \{(1 + \text{Real Benchmark}) * (1 + \text{Inflation rate})\} - 1$$

Where:

- Default value for Real Benchmark = 11.10% (as per Appendix of EB 85, Annex 12)
- Inflation Rate forecast for by Reserve Bank of India (RBI) (i.e. Central Bank of India) for India & in case where RBI Inflation forecast was not available Average Inflation rate forecast for India has been sourced from IMF web site.

Benchmark estimation:

Appendix in EB 92, Annex 5 specifies default value of expected return on equity in real terms for Energy Industries (Group 1) in India = **11.10%**

Inflation Forecast for India as per RBI website is considered for benchmark calculation.

Since RBI publishes the inflation forecast for 5 years and 10 years, PP has considered the maximum 10 year inflation considering the renewable crediting period of total 21 years.

Mytrah Energy (India) Pvt. Ltd has decided to implement the projects considered under this bundle on 30/07/2015, thus benchmark is determined based on this decision made date. Since the decision making date, default value for India as per UNFCCC guidelines and Inflation forecast as per RBI for 10 years are same therefore the benchmark calculation are same

Benchmark Calculations	Value	Sources Link or Title	Document Date
Default Value for India as per UNFCCC guidelines	11.10%	EB 85 Annex 12, Version 06 of methodological tool "Investment	24/07/2015

⁵ As per Fisher Equation, https://en.wikipedia.org/wiki/Fisher_equation

		Analysis" Table Appendix 1	
Inflation forecast (WPI Mean) as per RBI for 10 Yrs	3.80%	Table A.9: Annual Average Percentage Change ⁶	03/06/2015
Benchmark (with 10 Yrs Forecast)	15.32%		

Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III):

The Post tax Equity IRR is evaluated for the entire lifetime of the project activity, i.e. 25 years. It is calculated based on the cash outflows from and cash inflows into the project activity.

The IRR and Benchmark analysis are calculated in excel spreadsheet which is being checked and found correct by the assessment team.

Based on result of IRR excel spreadsheets, equity IRR is less than Benchmark.

This substantiates that the investment is not financially attractive (Equity IRR for the project activity is less than the Benchmark). Thus it can be easily concluded that project activity is additional & is not business as usual scenario.

b) Parameters and assumptions used:

The project activity is a renewable source of electricity generation and supplies the electricity to the INDIAN Electricity grid. The key parameters which determine the Equity IRR of the project activity are project cost, PLF and profitability estimates.

In the revised PD version 02, the project cost is based on the **detailed project report dated 15/07/2015**. The DPR for individual project owners is checked by the assessment team and found that the value as mentioned in IRR sheet is correct and appropriate for the region.

⁶ <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=16402>

As DPR were available to the individual project owner at the time of investment decision hence the same is deemed appropriate for IRR calculation. The details of project cost as per DPR are as follows:

Site Name	Name of the SPVs	Project Capacity (MW)	Project Cost (In Million)
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	614.48
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	7139.83
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	7566.40
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	2400.80
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	7965.15
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	670.8
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	11039.08

Validation team checked the DPR of the project activity and found that consideration of the project cost in revised PDD version 02 is correct and it is in line with appendix of EB85 Annex 12 as well as in compliance to VVS version 01.0 for the project activity. Hence, the project cost consideration is justified.

Moreover, the **actual cost of the project activity** is provided below and considering the same the project still do not breach the benchmark as detailed out in sensitivity analysis. If the actual cost is considered IRR still reduce and hence the same is considered conservative.

Site Name	Name of the SPVs	Project Capacity (MW)	Project Cost (In Million)
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	614.88
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	7680.90
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	7566.40
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	2200.80
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	8101.50
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	670.80
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	13140.00

Assessment of Plant Load Factor (PLF):

PROJECT OWNERS considered the Plant load factor from a DPR (available at the time of investment decision= Third party Engineering company) (to adhere as per Annex 11 EB 48), for expected electricity

generation estimation. The third party engineering company contracted by the PROJECT OWNERSs for this project activity. PROJECT OWNERS has submitted the copies of the PLFs estimation report to the assessment team.

Validation team assessed the PLF assessment report and found that the PLF estimation by 3rd party engineering company is in line with Para 3 (b) Annex 11, EB 48 and acceptable to the assessment team. For the IRR evaluation PLF available at decision making is considered. For Emission reduction calculation PLF available at the decision making in considered. Assessment team confirms that all the project owners adhere to the guideline of Annex 11 EB 48.

The detail of PLF is as below:

Site Name	Name of the SPVs	Project Capacity (MW)	PLF (%)= DPR= 3 rd party engineering company
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	19.90%
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	21.90%
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	20.70%
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	19.70%
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	25.50%
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	19.50%
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	21.50%

Assessment of Electricity Tariff:

The tariff is considered from DPR for individual project owners available to them at the time of decision making.

Validation team assessed the tariff and found that same value was available during decision making and in conformity with guidance appendix of EB85 Annex 12. Furthermore, assessment team has also checked the actual tariff in the power purchase agreement and State Electricity regulatory commission signed for further substantiation as these values are available during the validation stage. The IRR still do not cross the benchmark. The tariff details for individual project owners are given below:

Site Name	Name of the SPVs	Project Capacity (MW)	Tariff Rate (as per DPR)
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	5.63
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	4.70
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	5.74

Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	5.92
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	4.70
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	4.70
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	4.83

Tariff rate as per actual PPA and SERC (= State Electricity regulatory commission)

Site Name	Name of the SPVs	Tariff Rate (as per SERC)	Tariff Rate (as per PPA)
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	5.74	5.74
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	4.83	4.83
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	5.74	5.74
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	5.92	5.92
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	N/A	4.70
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	4.83	4.83
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	4.83	4.83

Assessment of O& M cost:

PROJECT OWNERS considered the Operation and Maintenance (=O&M) cost from the DPR for individual project owner. The DPR has been used in the financial calculation as same was available during decision making and hence applicable. According to appendix of EB85 Annex 12, the cost should be based on the input parameters available at the time of decision making and the project owners has submitted DPR supporting this consideration. Therefore, considering the above assessment, validation team concluded that the O&M cost considered from respective DPR in the computation of financial indicator is in conformity with guidance Appendix of EB85 Annex 12. The detail of the O&M cost for individual project owners is given below:

Site Name	Name of the SPVs	Project Capacity (MW)	O&M (In Million)
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	10.16
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	127.00
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	48.95
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	31.17
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	105.29
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	6.00
Aspari	Mytrah Vayu (Tungabhadra) Pvt.	148.9	74.58

	Ltd.		
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The actual O&M agreements were also signed for individual PP and the values are mentioned in the below table. The IRR is still below the benchmark

Site Name	Name of the SPVs	Project Capacity (MW)	O&M (In Million) (Without tax exclusion)
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	23.88
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	16.94
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	42.40
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	27.00
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	42.34
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	6.50
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	69.3

Assessment of Tax computation:

The project developer has adopted book depreciation rates as per Schedule XIV of the Companies Act, 1956 for computing book profit and Income Tax Act 1961 stipulated for income tax calculation, which are in conformity with the accepted accounting principles adopted by the company and income tax laws in the host country. The block of assets has been computed for depreciation purpose as per the accepted accounting principles. Tax liability has been calculated as per the income tax rules and the rulings given. In computing the income tax liability, the project developers have considered Tax holiday (u/s 80IA of the Income Tax Act, 1961). Accelerated depreciation on plant and machinery is also sourced from IT act. The tax rates assumed corresponds to the tax rate prevailing at the time of taking decision (conformity to Appendix of EB85 Annex 12). Hence, these assumptions are appropriate during decision making context.

Cross checking parameters:

The cost of wind turbines, electricity tariff, depreciation, salvage value and tax rate have been checked with DPRs, tariff order, Income Tax Act, power purchase agreement.

Name of the parameter	DOE assessment
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Project Cost	The proposed project activity consist of seven different project site of the same group under different SPVs		
	Name of the SPVs	Project Capacity (MW)	Project Cost (In Million)
	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	614.48
	Mytrah Vayu (Indravati) Pvt. Ltd.	105	7139.83
	Mytrah Vayu (Som) Pvt. Ltd.	90	7566.40
	Mytrah Vayu (Som) Pvt. Ltd.	30	2400.80
	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	7965.15
	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	670.8
	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	11039.08
	The project cost has been considered from DPR dated 15/07/2015 and was available at the time decision made for the project activity. The DOE has also checked the actual cost of the each project site from Chartered Accountant certificate and found that few project sites, the reduction in project cost is within 10% range of sensitivity analysis. Since the comparison is done with actual project cost and hence increase of the same in future is not possible. Thus the project activity is additional with actual project cost. The CA certificate has been checked for actual project cost.		
	Site Name	Name of the SPVs	Project Capacity (MW)
	Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4
	Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105
	Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90

	Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	2200.80
	Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	8101.50
	Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	670.80
	Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	13140.00
The difference in actual project cost for different project site is due to time difference, manufacturer, different EPC contractor, negotiation skills of individual PP etc. The assessment team also checked different states tariff orders and found that project cost considered for project is found to be appropriate. Based on sectoral scope expert and local knowledge, the project cost considered as per DPR for the proposed project activity is found to be appropriate for wind projects. Also since the actual cost is available to DOE and IRR is still within benchmark and thus the same is acceptable. The IRR as per the assumption from the DPR is as follows:				
Site Name	Name of the SPVs	Project Capacity (MW)	Project Cost (In Million)	IRR
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	614.48	8.81%
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	7139.83	8.36%
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	7566.40	9.58%
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	2400.80	8.38%
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	7965.15	8.90%
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	670.8	8.69%
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	11039.08	9.11%

	The IRR as per the actual project cost is defined as below:				
	Site Name	Name of the SPVs	Project Capacity (MW)	Actual project cost as per the CA certificate	IRR
	Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	614.88	11.45%
	Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	7680.90	4.79%
	Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	7566.40	14.17%
	Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	2200.80	11.83%
	Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	8101.50	10.83%
	Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	670.80	14.39%
	Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	13140.00	7.05%
Benchmark for the project as described above is 15.32 %. As described above with actual project cost the project is still additional. Since the comparison is done with actual project cost the increase of the same in future is not possible. Thus assessment team is of the opinion that project is still additional with the consideration of actual project cost for the project activity.					
O&M cost and Escalation in the operational expense =5(%)- Standard practice in India	The proposed project activity consist of seven different project site of the same group under different SPVs				
	Name of the SPVs	Project Capacity (MW)	O&M (In Million)		
	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	10.16		
	Mytrah Vayu (Indravati) Pvt. Ltd.	105	127.00		

Mytrah Vayu (Som) Pvt. Ltd.	90	48.95
Mytrah Vayu (Som) Pvt. Ltd.	30	31.17
Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	105.29
Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	6.00
Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	74.58

The project cost has been considered from DPR dated 15/07/2015 and was available at the time decision made for the project activity.

The DOE has also checked the actual O&M contract for each project site and found the changes in O&M cost is within threshold limit. Thus the project activity is additional with actual O&M cost.

Site Name	Name of the SPVs	Project Capacity (MW)	O&M (In Million) (Without tax exclusion)- Actual	
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	23.88	
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	16.94	
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	42.40	
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	27.00	
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	42.34	
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	6.50	
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	69.3	

Even after consideration of O&M cost as zero, the project activity is additional.

The assessment team also checked different states tariff orders and found that O&M cost and its escalation considered for project is found to be appropriate.

IRR value as per the assumptions from the DPR is as below:

Name of the SPVs	Project Capacity (MW)	O&M (In Million)	IRR
Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	10.16	8.81%
Mytrah Vayu (Indravati) Pvt. Ltd.	105	127.00	8.36%
Mytrah Vayu (Som) Pvt. Ltd.	90	48.95	9.58%
Mytrah Vayu (Som) Pvt. Ltd.	30	31.17	8.38%
Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	105.29	8.90%
Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	6.00	8.69%
Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	74.58	9.11%

IRR value based on the actual O&M agreements signed is as below:

Site Name	Name of the SPVs	Project Capacity (MW)	O&M (In Million) (Without tax exclusion)- Actual	IRR
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	23.88	11.45%
Pottipadu	Mytrah Vayu	105	16.94	4.79%

		(Indravati) Pvt. Ltd.			
	Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	42.40	14.17%
	Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	27.00	11.83%
	Nazerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	42.34	10.83%
	Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	6.50	14.39%
	Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	69.3	7.05%
	Even after consideration of O&M cost as zero, the project activity is additional. Benchmark for the project as described above is 15.32 %. As described above with actual O&M value the project is still additional. Based on sectoral scope expert and local knowledge, the project O&M cost and its escalation considered as per DPR for the proposed project activity is found to be appropriate for wind projects. Also since the O&M cost is available to DOE and IRR is still within benchmark and thus the same is acceptable.				
Tariff	The proposed project activity consist of seven different project site of same group under different SPVs				
	Name of the SPVs		Project Capacity (MW)	Tariff Rate (as per DPR) INR/kWh	Tariff Rate (as per PPA)

	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	5.63	5.74																																
	Mytrah Vayu (Indravati) Pvt. Ltd.	105	4.70	4.83																																
	Mytrah Vayu (Som) Pvt. Ltd.	90	5.74	5.74																																
	Mytrah Vayu (Som) Pvt. Ltd.	30	5.92	5.92																																
	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	4.70	4.70																																
	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	4.70	4.83																																
	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	4.83	4.83																																
The Tariff rate has been considered from DPR dated 15/07/2015 and was available at the time decision made for the project activity. The DOE has also checked the actual PPA for each project site and found there are slight changes in tariff rate for few sites, however tariff rate is within threshold limit. Thus the project activity is additional with actual Tariff rate.																																				
<table><tr><th>Site Name</th><th>Name of the SPVs</th><th>Tariff Rate (as per SERC)</th><th>Tariff Rate (as per PPA)</th></tr><tr><td>Bhesada</td><td>Mytrah Vayu (Indravati) Pvt. Ltd.</td><td>5.74</td><td>5.74</td></tr><tr><td>Pottipadu</td><td>Mytrah Vayu (Indravati) Pvt. Ltd.</td><td>4.83</td><td>4.83</td></tr><tr><td>Nidhi</td><td>Mytrah Vayu (Som) Pvt. Ltd.</td><td>5.74</td><td>5.74</td></tr><tr><td>Nipaniya</td><td>Mytrah Vayu (Som) Pvt. Ltd.</td><td>5.92</td><td>5.92</td></tr><tr><td>Nazeerabad</td><td>Mytrah Vayu (Godavari) Pvt. Ltd.</td><td>4.70</td><td>4.70</td></tr><tr><td>Burgula-II</td><td>Mytrah Vayu (Krishna) Pvt. Ltd.</td><td>4.83</td><td>4.83</td></tr><tr><td>Aspari</td><td>Mytrah Vayu (Tungabhadra) Pvt. Ltd.</td><td>4.83</td><td>4.83</td></tr></table>					Site Name	Name of the SPVs	Tariff Rate (as per SERC)	Tariff Rate (as per PPA)	Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	5.74	5.74	Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	4.83	4.83	Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	5.74	5.74	Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	5.92	5.92	Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	4.70	4.70	Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	4.83	4.83	Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	4.83	4.83
Site Name	Name of the SPVs	Tariff Rate (as per SERC)	Tariff Rate (as per PPA)																																	
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	5.74	5.74																																	
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	4.83	4.83																																	
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	5.74	5.74																																	
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	5.92	5.92																																	
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	4.70	4.70																																	
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	4.83	4.83																																	
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	4.83	4.83																																	
The tariff order of respective state has been checked and found that tariff rate considered for the project activity are appropriate. http://www.mperc.nic.in/26032013-Wind-tariff-order.pdf																																				

http://rerc.rajasthan.gov.in/cnpl/PDFs/Final%20Draft%20Wind%20Tariff%20Order_FY%202015-16.pdf

http://www.aperc.gov.in/aperc1/assets/uploads/files/043ef-final_order_wind_tariff_010815.pdf

<http://www.aperc.gov.in/aperc1/assets/uploads/files/bf2d3-o.p.no.68-of-2012.pdf>

The tariff considered is levelled tariff and hence there is no any escalation . This is found to be appropriate and found to be accepted.

IRR value as per the Tariff considered from the DPR:

Name of the SPVs	Project Capacity (MW)	Tariff Rate (as per DPR) INR/kWh	IRR
Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	5.63	8.81%
Mytrah Vayu (Indravati) Pvt. Ltd.	105	4.70	8.36%
Mytrah Vayu (Som) Pvt. Ltd.	90	5.74	9.58%
Mytrah Vayu (Som) Pvt. Ltd.	30	5.92	8.38%
Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	4.70	8.90%
Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	4.70	8.69%
Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	4.83	9.11%

IRR value as per the actual PPA signed between Individual project owners and State electricity Board is as below:

	Site Name	Name of the SPVs	Tariff Rate (as per PPA)	IRR
	Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	5.74	11.45%
	Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	4.83	4.79%
	Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	5.74	14.17%
	Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	5.92	11.83%
	Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	4.70	10.83%
	Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	4.83	14.39%
	Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	4.83	7.05%
	Since the IRR is still below benchmark with the consideration of Actual Power purchase agreement signed which is valid for total operational lifetime of the project, assessment team confirms that the project is still additional with actual Tariff rate. Moreover, in the above table the order from State electricity tariff order is checked and it is confirmed that PPA signed with the rate as mentioned in the Tariff order and hence increase of the same is not possible. Based on sectoral scope expert and local knowledge, the project tariff rate considered as per DPR for the proposed project activity is found to be appropriate for wind projects.			
PLF	The proposed project activity consist of seven different project site of same group under different SPVs			
	Name of the SPVs	Project Capacity (MW)	PLF (%)	
	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	19.90%	
	Mytrah Vayu (Indravati) Pvt. Ltd.	105	21.90%	
	Mytrah Vayu (Som) Pvt. Ltd.	90	20.70%	
	Mytrah Vayu (Som)	30	19.70%	

	Pvt. Ltd.		
	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	25.50%
	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	19.50%
	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	21.50%
Validation team assessed the DPR report. Same report has been used in the financials and the emission reduction calculation. PLF estimation by 3rd party engineering company is in line with Para 3 (b) Annex 11, EB 48 and acceptable to the assessment team. The tariff order of respective state has been checked and found that PLF considered for the project activity in within the range of sensitivity analysis and found to be appropriate. http://www.mperc.nic.in/26032013-Wind-tariff-order.pdf http://rerc.rajasthan.gov.in/cnpl/PDFs/Final%20Draft%20Wind%20Tariff%20Order_FY%202015-16.pdf http://www.aperc.gov.in/aperc1/assets/uploads/files/043ef-final_order_wind_tariff_010815.pdf http://www.aperc.gov.in/aperc1/assets/uploads/files/bf2d3-o.p.no.68-of-2012.pdf Based on sectoral scope expert and local knowledge, the project PLF considered as per DPR for the proposed project activity is found to be appropriate for wind projects. IRR for PLF value as per the DPR = 3rd party report, Annex 11 EB 48			
	Name of the SPVs	Project Capacity (MW)	IRR
	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	19.90%
	Mytrah Vayu (Indravati) Pvt. Ltd.	105	21.90%
	Mytrah Vayu (Som) Pvt. Ltd.	90	20.70%

	Mytrah Vayu (Som) Pvt. Ltd.	30	19.70%	8.38%
	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	25.50%	8.90%
	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	19.50%	8.69%
	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	21.50%	9.11%
	IRR as per the PLF value of the Tariff orders= Third party SERC (=State electricity regulator commission) order. The details link are given above:			
	Name of the SPVs	Project Capacity (MW)	PLF (%) - As per the tariff order of State electricity regulator commission	IRR
	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	20%	11.45%
	Mytrah Vayu (Indravati) Pvt. Ltd.	105	22%	4.79%
	Mytrah Vayu (Som) Pvt. Ltd.	90	23.50%	14.17%
	Mytrah Vayu (Som) Pvt. Ltd.	30	20%	11.83%
	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	25%	10.83%
	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	23.50%	14.39%

	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	23.50%	7.05%
	Assessment team confirms that since with the value as mentioned in the tariff order for State Electricity regulatory commission report for the individual state are considered and still the IRR is still below the benchmark, hence the project is additional.			
Tax Rates	Income tax rate (%)			34.61%
	MAT (Minimum Alternate tax) (%)			21.34%
	Service Tax (%)			15.45%
	The above table shows the tax rate considered for individual project Owners (Same for all the owners as the decision making dates for all the promoters are same) and the same is found suitable. Assessment team noted that the project developer has adopted book depreciation rates as per Schedule XIV of the Companies Act, 1956 for computing book profit and Income Tax Act 1961 stipulated for income tax calculation, which are in conformity with the accepted accounting principles adopted by the company and income tax laws in the host country i.e. INDIA. Tax liability has been calculated as per the income tax rules and the rulings given. In computing the income tax liability, the project developers have considered Tax holiday (u/s 80IA of the Income Tax Act, 1961). Accelerated depreciation on plant and machinery is also sourced from IT act. The tax rates assumed corresponds to the tax rate prevailing at the time of taking decision. Hence, these assumptions are appropriate during decision making context and thus acceptable to the assessment team. NO further assessment is required as the Values are directly procured from Income Tax Act, 1961 which is standard guideline for Tax value in India.			

The documents supporting the financial calculations, in the opinion of Validation Team, are therefore authentic and conform to the guidance given by EB. The PD having been incorporated, the input costs considered conform to guidance on investment analysis issued by EB. All the input parameters considered in computation, the basis, and correctness and appropriate thereof are checked and found correct.

Assessment of correctness of computation:

The assessment involved checking the data input taken from DPR, power purchase agreement, tariff order, adoption of correct accounting principle and arithmetical accuracy. Validation Team checked the documents and ensured that appropriate input has been taken in the project cost and projections. The arithmetical accuracy was also found to be correct.

The equity IRR has been computed for a period of 25 years (=Operational lifetime of the project (for wind), which is the life time of the project and is in conformity with the Investment guideline. As required by appendix of EB85 Annex 12 the expected realization on the sale of assets at the end of the operating

life has been taken as salvage value in the terminal year. In computing the IRR, the project developer has taken into account profit after tax, depreciation tax shield and salvage value (in the terminal year). The principle adopted conforms to the accepted accounting and taxation principles.

Validation team also confirms that rest of the input parameters are considered appropriately and are in line with guidance appendix of EB85 Annex 12. Therefore, from the above arguments/ justifications it is evident that the project is not business as usual scenario and requires VCS benefits to sustain.

Sensitivity analysis:

The Guidance Investment analysis requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation. The project developer has identified Plant Load Factor (PLF), Project cost, Electricity tariff and O&M cost as critical assumptions. These critical parameters constitute more than 20% of either total project costs or total project revenues.

Since the project cost is being taken as per the DPR, being available at the time of investment making decision, hence the cost is subject to variation. However the same can be compared with actual values as per the purchase orders and the purchase order value is less than the cost mentioned in the DPR. The tariff is determined by previous year's electricity bill which is subject to minor variation. All other expenses are much less than 20% of the total cost. Hence, only PLF needs to be subjected to reasonable variation. Nevertheless, following factors have been subjected to sensitivity analysis:

- (a) PLF
- (b) O&M Cost
- (c) Project Cost
- (d) Tariff Rate

The sensitivity analysis reveals that even under more favourable conditions, the IRR without CDM revenue would not cross the benchmark return as given in the following table:

Sensitivity Analysis of Mytrah Vayu (Indravati) Pvt. Ltd (8.4 MW) are as follows:

Final Results	Equity IRR without CDM	Benchmark (Equity IRR)
	8.81%	15.32%

Sensitivity Analysis	Equity IRR			
Variation %	-10%	Normal	10%	Breaching Value

PLF	5.82%	8.81%	11.72%	22.00%
O&M	9.23%	8.81%	8.30%	-166.00%
Project Cost	11.56%	8.81%	6.55%	-19.97%
Tariff Rate	5.96%	8.81%	11.56%	23.10%

Sensitivity Analysis of Mytrah Vayu (Indravati) Pvt. Ltd (105 MW) are as follows:

Final Results	Equity IRR without CDM	Benchmark (Equity IRR)
	8.36%	15.32%

Sensitivity Analysis	Equity IRR
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Variation %	-10%	Normal	10%	Breaching Value
PLF	5.41%	8.36%	11.22%	23.63%
O&M	8.89%	8.36%	7.84%	-160.60%
Project Cost	11.16%	8.36%	6.12%	-20.88%
Tariff Rate	5.56%	8.36%	11.18%	24.30%

Sensitivity Analysis of Mytrah Vayu (Som) Pvt. Ltd. (90 MW) are as follows:

Final Results	Equity IRR without CDM	Benchmark (Equity IRR)
	9.58%	15.32%

Sensitivity Analysis	Equity IRR
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Variation %	-10%	Normal	10%	Breaching Value
PLF	6.36%	9.58%	12.94%	16.80%
O&M	9.78%	9.58%	9.38%	-297.50%
Project Cost	13.13%	9.58%	6.87%	-14.98%
Tariff Rate	6.52%	9.58%	12.78%	17.55%

Sensitivity Analysis of Mytrah Vayu (Som) Pvt. Ltd. (30 MW) are as follows:

Final Results	Equity IRR without CDM	Benchmark (Equity IRR)
	8.38%	15.32%

Sensitivity Analysis	Equity IRR
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Variation %	-10%	Normal	10%	Breaching Value
PLF	4.95%	8.38%	12.00%	18.90%
O&M	8.83%	8.38%	7.93%	-172.00%
Project Cost	11.88%	8.38%	5.71%	-17.37%
Tariff Rate	5.10%	8.38%	11.76%	19.85%

Sensitivity Analysis of Mytrah Vayu (Godavari) Pvt. Ltd. (100.8 MW) are as follows:

Final Results	Equity IRR without CDM	Benchmark (Equity IRR)
	8.90%	15.32%

Sensitivity Analysis	Equity IRR
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Variation %	-10%	Normal	10%	Breaching Value
PLF	5.93%	8.90%	11.91%	20.95%
O&M	9.36%	8.90%	8.47%	-168.50%
Project Cost	11.87%	8.90%	6.50%	-18.80%
Tariff Rate	5.96%	8.90%	11.86%	21.47%

Sensitivity Analysis of Mytrah Vayu (Krishna) Pvt. Ltd. (10.4 MW) are as follows:

Final Results	Equity IRR without CDM	Benchmark (Equity IRR)
	8.69%	15.32%

Sensitivity Analysis	Equity IRR
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Variation %	-10%	Normal	10%	Breaching Value
PLF	5.85%	8.69%	11.49%	23.83%
O&M	8.96%	8.69%	8.45%	-309.00%
Project Cost	11.52%	8.69%	6.35%	-20.32%
Tariff Rate	6.00%	8.69%	11.35%	25.07%

Sensitivity Analysis of Mytrah Vayu (Tungabhadra) Pvt. Ltd. (148.9 MW) are as follows:

Final Results	Equity IRR without CDM	Benchmark (Equity IRR)
	9.11%	15.32%

Sensitivity Analysis		Equity IRR		
Variation %	-10%	Normal	10%	Breaching Value
PLF	6.35%	9.11%	11.77%	22.63%
O&M	9.31%	9.11%	8.90%	-376.00%
Project Cost	11.98%	9.11%	6.76%	-18.80%
Tariff Rate	6.50%	9.11%	11.70%	23.50%

Sensitivity Analysis assessment:

Probability to breach the benchmark:
Sensitivity Parameter 1 : PLF
PLF considered in financials for is as per Third Party PLF report in line with “Guidelines for the reporting and validation of Plant load factors” stated in EB48 Annex11 option 3(b). Hence, variation in PLF of more than 10% is unlikely to happen as the PLF has been reported as per the Third Party Report based on long term data.
Sensitivity Parameter 2 : O&M
The sensitivity analysis reveals that O&M will breach the benchmark at negative values and is hypothetical case. Since the O&M cost is subject to escalation (as evidence by the O&M agreement) and also subject to inflationary pressure, any reduction in the O&M costs is highly unlikely. Hence, the reduction in the O&M cost is highly unlikely.
Sensitivity Parameter 3 : Project Cost
Project Cost for financial analysis is considered from DPR of the project activity, being available at the time of investment making decision to go ahead with the project activity. The actual project cost is lower than the DPR. Since the Purchase Order cost is firm, there is no possibility of project cost going below this level. However, Sensitivity is carried out for threshold level below which benchmark is not breached.
Sensitivity Parameter 4 : Tariff Rate
The tariff is determined by PPA which is fixed for entire lifetime of the project activity. Hence,

there is no probability to get variation for the same. However, Sensitivity is carried out for +/-10% even then the benchmark is not breached.

Assessment team also confirmed the breaching values for individual parameters (=Individual project owners) and thus confirms that the project is still additional

Site Name	Name of the SPVs	Project Capacity (MW)	DPR PLF	Tariff order PLF	Variation in PLF	Breaching Value for PLF
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	19.90%	21%	5.53%	22.00%
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	21.90%	23.5%	7.31%	23.63%
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	20.70%	21%	1.45%	16.80%
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	19.70%	20%	1.52%	18.90%
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	25.50%	23.5%	-7.84%	20.95%
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	19.50%	23.5%	20.51%	23.83%
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	21.50%	23.5%	9.30%	22.63%

Site Name	Name of the SPVs	Project Capacity (MW)	DPR Cost	Actual Cost	Variation in project cost	Breaching value for Project Cost
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	614.48	614.88	0.06%	-19.97%
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	7139.83	7680.90	7.58%	-20.88%
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	7566.40	7566.40	0.00%	-14.98%
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	2400.80	2200.80	-8.33%	-17.37%
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	7965.15	8101.50	1.71%	-18.80%
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	670.80	670.80	0.00%	-20.32%
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	11039.08	13140.00	19.03%	-18.80%

Site Name	Name of the SPVs	Project Capacity (MW)	DPR Tariff	PPA Tariff	Variation in Tariff	Breaching value in Tariff Rate
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	5.63	5.74	1.95%	23.10%
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	4.70	4.83	2.77%	24.30%

Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	5.74	5.74	0.00%	17.55%
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	5.92	5.92	0.00%	19.85%
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	4.70	4.70	0.00%	21.47%
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	4.70	4.83	2.77%	25.07%
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	4.83	4.83	0.00%	23.50%

Site Name	Name of the SPVs	Project Capacity (MW)	DPR O&M cost/MW	Actual O&M cost/MW	Variation in O&M	Breaching value in O&M
Bhesada	Mytrah Vayu (Indravati) Pvt. Ltd.	8.4	1.21	2.84	135%	-166.00%
Pottipadu	Mytrah Vayu (Indravati) Pvt. Ltd.	105	1.21	0.16	-87%	-160.60%
Nidhi	Mytrah Vayu (Som) Pvt. Ltd.	90	0.54	0.47	-13%	-297.50%
Nipaniya	Mytrah Vayu (Som) Pvt. Ltd.	30	1.04	0.90	-13%	-172.00%
Nazeerabad	Mytrah Vayu (Godavari) Pvt. Ltd.	100.8	1.04	0.42	-60%	-168.50%
Burgula-II	Mytrah Vayu (Krishna) Pvt. Ltd.	10.4	0.58	0.63	8%	-309.00%
Aspari	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	148.9	0.50	0.47	-7%	-376.00%

It can be observed from sensitivity table that in various scenarios wherein there are changes in tariff, O&M cost, electricity generation and project's capital cost, the equity IRR does not cross the benchmark. Thus, it can be concluded that revenue from sale of VERs is important to alleviate this gap and hence the project has been considered to be additional.

Moreover, Annex 3 of the EB 22 states that national and/or sectoral policies and circumstances have to be accounted for when considering the baseline scenario. Paragraph 7(a) states that, only those national and/or sectoral policies or regulations under paragraph 6(a), i.e., type E+ policy that increase GHG emissions, that have been implemented before adoption of the Kyoto Protocol by the COP (decision 1/CP.3, 11/12/1997), shall be taken into account when developing a baseline scenario. The Electricity Act of 2003 promoted cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity (Refer Section 86(1) of Electricity Act 2003). Therefore, it could be seen that the provincial and sectoral policies are E- i.e., policies that decrease GHG emissions and are after November 2001. Hence the baseline scenario of electricity generation by grid connected fossil fuel dominated power plants is in accordance with Annex 3 of EB 22.

The baseline mentioned in Section D.8.5 above is in compliance with all the applicable regulatory policies and laws. Additionally, the Project Participant is under no compulsion to opt for any particular technology or even a renewable mode of power generation. There is no governmental body or EB policy which requires a particular kind of fuel to be chosen and there is no legal requirement to which the above alternative does not conform.

The common practice analysis is carried out step by step as per “Methodological tool: Common Practice, version 03.1” para 5. Stepwise approach for common practice is as follows:

Thus common practise analysis is conducted below:

1. Applicable Geographical Area (Para 9): The Madhya Pradesh, Rajasthan, Andhra Pradesh and Telangana state as per the respective project activity has been considered as the applicable geographical area for this project. PP had considered the state of Madhya Pradesh, Rajasthan, Andhra Pradesh and Telangana as per the project geo-graphical area due to regulatory regime since applicable power tariff structure for renewable energy projects is unique for all the states across national boundary of India; which is based on Electricity Act 2003 (EA 2003), section 82 which clearly mentions “*Every State Government shall, within six months from the appointed date, by notification, constitute for the purposes of this Act, a Commission for the State to be known as the (name of the State) Electricity Regulatory Commission*” Appropriateness of the same has been checked and confirmed from EA 2003 (<http://www.cercind.gov.in/08022007/Act-with-amendment.pdf/40/>).

Furthermore, following significant points on the State specific policy & regulatory framework on the renewable energy projects with special emphasis to wind power projects have been validated:

- Electricity Act 2003 (EA 2003) has changed the legal and regulatory framework for the renewable energy sector in India. The EA 2003 mandates policy formulation to promote renewable sources of energy by the federal government, the State governments and the State Electricity Regulatory Commissions (=SERCs) within their jurisdictions.
- The Electricity Act 2003 introduced some enabling provisions conducive to accelerated development of grid connected renewable energy sources. Under Section 61(h), promotion of cogeneration and generation of electricity from renewable sources of energy has been made the explicit responsibility of SERCs, which are bound by law to take these considerations into account while drafting their terms and conditions for tariff regulations. Nearly all SERCs have issued their tariff regulations incorporating suitable clauses, which will enable them to provide a preferential treatment to renewable energy (RE) during the tariff determination process. The SERCs determine the tariff for all renewable energy projects across the States, and the state-owned power Distribution Companies (DISCOMs) ensure grid connectivity to the renewable energy project sites.
- EA 2003 has initiated the adoption of the National Tariff Policy, 2006 as one of the key policies, National Tariff Policy (2006) framed under the Section 3 of the EA 2003. As per the excerpt from National Tariff Policy, 2006; pursuant to provisions of section 86(1)(e) of the EA 2003, the Appropriate Commission shall fix a minimum percentage for purchase of energy from such sources taking into account availability of such resources in the region and its impact on retail tariffs. Such percentage for purchase of energy should be made applicable for the tariffs to be determined by the SERCs latest by April 1, 2006.
- As mandated under section 86(1)(e) of the Electricity Act (2003), by June 2012, 26 SERCs had fixed quotas (in terms of % of electricity being handled by the power utility) to procure power from renewable energy sources. The mandate, which is called a Renewable Purchase Specification

(RPS), varies from 0.5% to 14% in various states over varying time-scales. Few states have come out with technology specific RPSs. Besides, the state regulators determine the tariff for all RE projects in the states and ensure connectivity to the grid through extension of power evacuation from the RE project sites.

- At present thirteen SERCs have declared preferential feed-in tariffs (FITs) for purchase of electricity generated from wind power projects established in respective states, which varies from state to state in India. All the SERCs have adopted a 'cost plus' methodology to fix the feed-in tariff, which varies across the states depending upon the state resources, project cost and more importantly the tariff regulations of SERCs. Wind power related tariff policies in different states also has difference in regulatory and policy incentives. Several states have implemented fiscal and financial incentives for renewable energy generation, including; energy buy back (i.e. a guarantee from an electricity company that they will buy the renewable power produced); preferential grid connection and transportation charges and electricity tax exemptions.

Therefore the investment climate for the renewable energy projects varies from State to State within India due to state specific local policy & regulatory framework as outlined by the State Electricity Regulatory Commissions of the respective state. This difference in investment condition leads to essential distinction among wind energy projects between different States of the host country India

Thus, the specific geographical area i.e. state of Madhya Pradesh, Rajasthan, Andhra Pradesh and Telangana as per the project for the common practice analysis of the proposed project activity is considered and thus the same is acceptable to the assessment team.

2. Measure (Para 10): The project activity reduces greenhouse gas emissions by generating electricity using renewable energy source-wind. Therefore, the project activity falls under the following measure:
 - (b) Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies.
3. Output (Para 11): The project activity produces electricity. Therefore, electricity is considered as output of the project activity.
4. Different Technologies (Para 12): The project activity uses wind energy for producing electricity and hence as per Para 12(a), the technologies which use energy source/ fuel other than wind will be considered as the different technologies for the project activity.

The step wise approach to provide common practice analysis as per the guideline is as follows:

Step (1): calculate applicable capacity or output range as +/-50% of the total design capacity or output of the proposed project activity.

Range	Capacity	Unit

+50%	740.25	MW
Capacity of the proposed project activity	493.5	MW
-50%	246.75	MW

Since the project activity is 493.5MW, the output range of +/- 50% has been considered as 740.25 MW (Higher range for comparison) to 246.75 MW (Lower range for Comparison) which is assessed to be correct.

Step (2): *identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:*

a) Assessment team noted that as the projects are located in Madhya Pradesh, Andhra Pradesh, Rajasthan and Telangana state of India, therefore, projects in the geographical area of Madhya Pradesh, Andhra Pradesh, Rajasthan and Telangana have been chosen for analysis. Each state have different policies regarding renewable energy, hence Rajasthan state is considered as geographical region for common practise analysis. The distinction from choosing the state to entire geographical boundary is already explained above in the report and thus the applied geographical area is acceptable to the assessment team.

b) Assessment team noted that the project activity is a green-field wind power project and uses measure (b) "Switch of technology with or without change of energy source including energy efficiency improvement as well as use of renewable energies". Therefore, projects applying same measure (b) are candidates for similar projects.

c) Assessment team confirms during the site visit that the energy source used by the project activity is Wind. Hence, only Wind energy projects have been considered for analysis.

d) Assessment team confirms during the site visit that the project activity produces electricity; therefore, all power plants that produce electricity are candidates for similar projects.

e) Since the project activity is 493.5MW, the output range of +/- 50% has been considered as 740.25 MW (Higher range for comparison) to 246.75 MW (Lower range for Comparison) which is assessed to be correct.

f) The start date of the project activity is 30/12/2015. Therefore projects, which have started commercial operation before 30/12/2015, have been considered for analysis.

Based on Wind Power Directory data the numbers of similar projects (CDM and non-CDM) identified, which fulfil above-mentioned conditioned are:

Numbers of Similar projects identified, which fulfil above-mentioned conditioned are

$N_{\text{wind}} = 0$ (Assessment team confirms the data presented in the joint PD and MR is correct by the cross check of the sources-both present in the PD and independent search)

Assessment team checked the Indian Wind Power Directory- 2016, 16th Edition was considered to determine the similar projects. The details are checked and found correct by the assessment team.

Step (3): Within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number N_{all} .

CDM project activities, which have got registered or are under validation have been excluded in this step. As per the requirement of step 3, CDM project activities, which have got registered or are under validation have been excluded in this step. After excluding the registered and under validation projects the total number of projects is 0. The source of check for the same is cdm.unfccc.int

$N_{\text{all}} = 0$ (Assessment team confirms the data presented in the joint PD and MR is correct by the cross check of the sources-both present in the PD and independent search)

Step (4): Within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number N_{diff} .

As per the tool on Common Practice, the project activities have been separated from the different technologies on the basis two criteria:

1. Size of Installation – Since project activity is large scale project, small and micro scale projects are considered as different technology project. Based on this criteria, there are no any different technology project out of similar identified projects.

2. Investment climate on the date of the investment decision – For proposed project activity, there are no any different technology project considered out of similar identified projects.

Hence, projects where either of the conditions is satisfied those projects are counted for calculating N_{diff} projects.

$N_{\text{diff}} = 0$ (Assessment team confirms the data presented in the joint PD and MR is correct by the cross check of the sources-both present in the PD and independent search)

Step (5): Calculate factor $F = 1 - N_{\text{diff}}/N_{\text{all}}$ representing the share of similar projects (penetration rate of the measure/technology) using a measure/technology similar to the measure/technology used in the proposed project activity that deliver the same output or capacity as the proposed project activity.

Calculate $F = 1 - N_{diff}/N_{all}$

$$F = 1 - (0/0) = 0$$

As per methodological tool “common practise” version 03.1, the proposed project activity is a “common practice” within a sector in the applicable geographical area if the factor F is greater than 0.2 and $N_{all} - N_{diff}$ is greater than 3.

Thus if both conditions are fulfilled, then project activity will be a common practise otherwise, the project activity is treated as not a common practise.

Outcome of Common Practise analysis:

As,

i. $F = 0$; is less than 0.2

ii. $N_{all} - N_{diff} = 0$; is not greater than 3

Assessment team thus confirms that the project activity does not satisfy any of the above condition. Hence, project activity is not a common practice.

Thus, the proposed project activity is not a “common practice” within a sector in the applicable geographical area.

Assessment team confirms from the above discussions show that wind power development is not a common practice and the project activity is not financially attractive; hence the project activity is additional.

No commercially sensitive information has been excluded from the public version of the project description.

Contribution to sustainable development:

Ministry of Environment and Forests, has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. The project contributes to sustainable development using the following ways.

- **Social well-being:** The project would help in generating employment opportunities during the construction and operation phases. The project activity will lead to development in infrastructure in the region like development of roads and also may promote business with improved power generation.
- **Economic well-being:** The project is a clean technology investment in the region, which would not have been taken place in the absence of the VCS benefits the project activity will also help to reduce the demand supply gap in the state. The project activity will generate power using zero emissions wind based power generation which helps to reduce GHG

emissions and specific pollutants like SO_x, NO_x, and SPM associated with the conventional thermal power generation facilities.

- **Technological well-being:** The successful operation of project activity would lead to promotion of wind based power generation and would encourage other entrepreneurs to participate in similar projects
- **Environmental well-being:** Wind being a renewable source of energy, it reduces the dependence on fossil fuels and conserves natural resources which are on the verge of depletion. Due to its zero emission the project activity also helps in avoiding significant amount of GHG emissions.

During the site visit it was concluded that the project is implemented as per the instruction of the PD. During the current monitoring period it was observed that no unforeseen situation evolved which can impact the operation of the project activity. Scheduled maintenance was carried out as per the instruction of the manufacturer and the same is acceptable to the assessment team. CAR 01 was raised during the validation process. Please refer Appendix 2 of this report for the detail closure of the CAR.

3.2 Participation under Other GHG Programs

During the site visit the Project Proponent confirmed that they have not applied under any other GHG programs to avail revenues from emission reductions achieved from this particular project activity.

For current monitoring period, there is no any claim of GHG emission reductions with other GHG program.

The present project activity is not participating in other Environmental credits, other GHG programs and has not been rejected by other GHG programs.

The project is not involved in any other form of GHG emission program and VERs generated from this verification will not be used for other trading program to avoid any kind of double counting. The same is confirmed by the individual project owners during the verification site visit. Assessment team also conducted independent review regarding the same and found that the statement/declaration of the Project owners is accurate and project is not involved in any other kind of GHG trading for the present verifications/monitoring period. Assessment team also checked other GHG program web site (cdm.unfccc.int, www.v-c-s.org, <https://www.goldstandard.org/>) and confirm that the Project has no intend to generate any other form of GHG-related environmental credit for GHG emission reductions or removals. The project activity are willing to get registered under VCS program. Assessment team also crosschecked that no Project owner is claiming REC; the same can be verified with the Renewable Energy Certificates accreditation body of India⁷. Further, if any Project owner is availing REC benefits in future, the Project owners will claim either VCU or REC and there will not be any double accounting for the same monitoring period. CAR 02 was raised during the validation process. Please refer Appendix 2 of this report for the detail closure of the CAR.

⁷https://recregistryindia.nic.in/index.php/general/publics/accredited_regens_pdf

3.3 Application of Methodology

3.3.1 Title and Reference

The project activity as part of the proposed project activity will be large scale project activity with power generation capacity more than 15 MW. Accordingly the following methodologies is used for each of the project activity instance based on its capacity:

The methodology for large scale project activity will be the approved methodology for large-scale CDM project activities. The details of the methodology are as follows:

Methodology : ACM0002

Project Type : Type-I: Renewable Energy Projects

Title : Grid-connected electricity generation from renewable sources --- Version 17.0, Sectoral Scope: 01,

<https://cdm.unfccc.int/methodologies/DB/8W400U6E7LFHHYH2C4JR1RJWWO4PVN>

Version No : Version 17

Reference : CDM Methodologies:

The project activity also takes reference from following Tools from the tools prescribed by applied methodology:

- **Tool for the demonstration and assessment of additionality** --- Version 07.0.0, EB 70, Annex 8
<https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>
- **Tool to calculate the emission factor for an electricity system** --- Version 06.0
<https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v5.0.pdf>

3.3.2 Applicability

The following steps will show the applicability of the project under this methodology.

The project status is corresponding to the methodology ACM 0002. Applicability of ACM 0002 is discussed below:

ACM 0002 version 17:

Applicability	Project activity vis-à-vis applicability Conditions
This methodology is applicable to grid-connected	Assessment team confirmed during the validation and verification site visit that the

renewable power generation project activities that: • install a Greenfield power plant; • involve a capacity addition to (an) existing plant(s); • involve a retrofit of (an) existing operating plants/units; • involve a rehabilitation of (an) existing plant(s)/unit(s) or • involve a replacement of (an) existing plant(s)/unit(s).	project activity is installation of a new grid connected renewable energy power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant) and hence this criterion is applicable.
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, wind power plant/unit, wave power plant/unit or tidal power plant/unit;	The proposed project activity will be an installation of a new grid connected wind power plant and hence this condition is met. Assessment team checked the same during the onsite visit and found correct.
In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, wind, 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;	The proposed project activity do not involve any capacity additions, retrofits or replacements and therefore this condition is not applicable. Assessment team checked the same during the onsite visit and found correct.
In case of hydro power plants, one of the following conditions shall apply: • The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or • The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3), is greater than 4 W/m²; or • The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m².	The proposed project activity is a grid connected wind power project. This condition is applicable only for hydro power plants and not applicable for wind projects. Hence this criterion is not applicable. Assessment team checked the same during the onsite visit and found correct.
The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m², all of the following	The proposed project is a grid connected wind energy power project. This condition is applicable only for hydro power plants and not applicable for wind projects. Assessment team checked the same during the onsite

conditions shall apply: • The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m²; • Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; • Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be; ✓ Lower than or equal to 15 MW; and ✓ Less than 10 per cent of the total installed capacity of integrated hydro power project.	visit and found correct.
In the case of integrated hydro power projects, project proponent shall: • 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 • Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.	The proposed project activity is a grid connected wind power project. This condition is applicable only for hydro power plants and not applicable for wind projects. Assessment team checked the same during the onsite visit and found correct.
Methodology is not applicable to the following • Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; • Biomass fired power plants/units	The project activity will be installation of a new grid connected wind power project and does not involve switching from fossil fuel to renewable energy and hence this criterion is not relevant to the project activity. This project activity does not involve any biomass based power plants and hence this criterion is not applicable to the project activity. Assessment team checked the same during the onsite visit and found correct.
In the case of retrofits, rehabilitations, replacements, or	The project activity will be a new grid

capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is “the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance”.	connected wind power plant and not a retrofits, replacement or capacity additions and therefore this criterion is not applicable to the project activity. Assessment team checked the same during the onsite visit and found correct.
Applicability conditions of “Tool to calculate the emission factor for an electricity system”	
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).	This condition is applicable. OM, BM and CM are estimated using the tool for calculating baseline emissions. Assessment team checked the same during the onsite visit and found correct.
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, 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.	Since project activity is grid connected, this condition is applicable and the emission factor has been calculated accordingly. Assessment team checked the same during the onsite visit and found correct.
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.	The project activity will be located in India, a non-Annex I country. Therefore, this criterion is not applicable for the project activity. Assessment team checked the same during the onsite visit and found correct.
Under this tool, the value applied to the CO ₂ emission factor of biofuels is zero.	The project activity will be grid connected renewable energy project and CO ₂ emission factor is not considered for biofuels. Assessment team checked the same during

	the onsite visit and found correct.
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3.3.3 Project Boundary

Means of validation	The project boundary as depicted in the PD version 01 is checked during the validation site visit and also during the interview with the plant official.			
Findings	No Findings raised			
Conclusion	The spatial extent of project boundary diagram (including the metering system) referred by the methodology is now mentioned in the PDD as per the requirement of applied methodology (for ACM 0002 version 17) and thus the same is acceptable to the assessment team. The below table mentions the emission source:			
		Sources	GHGs involved	Description
	Baseline Emissions	INDIAN Grid	CO ₂	Carbon Dioxide
	Project Emissions	NA	NA	NA

3.3.4 Baseline Scenario

Means of validation	The baseline scenario as depicted in the PD version 01 is checked during the validation site visit and also during the interview with the plant official.
Findings	No findings were raised.
Conclusion	Assessment team checked as per the applicable methodology, a Greenfield power plant is defined as “a new renewable energy power plant that is constructed and operated at a site where no renewable energy power plant was operated prior to the implementation of the project activity”. As the project activity falls under the definition of a Greenfield power plant, the baseline scenario as per applied methodology (ACM0002) is the following: As per para 23 of ACM0002 version 17.0; If the project activity is the installation of a Greenfield power plant <i>“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”.</i>

Hence, the baseline for the project activity is the equivalent amount of power to the INDIAN grid.

The combined margin ($EF_{grid,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) (having weightage 25%) and build margin (BM) (having weightage 75%). Calculations for this combined margin must be based on data from an official source of CEA database (where available) version 12 and made publically available.

The combined margin of the INDIAN National Grid used for the project activity is as follows:

Parameter	Value	Nomenclature	Source
$EF_{grid,y}$	0.9653 tCO ₂ /MWh	Combined margin CO ₂ emission factor for the project electricity system in year y	Calculated as the weighted average of the operating margin (0.75) & build margin (0.25) values, sourced from Baseline CO ₂ Emission Database, Version 12.0 published by Central Electricity Authority (CEA), Government of India.
$EF_{grid,OM,y}$	0.9843 tCO ₂ /MWh	Operating margin CO ₂ emission factor for the project electricity system in year y	Calculated as per "Tool to calculate the emission factor for an electricity system, version 06.0.0" as 3-year generation weighted average using data for the years 2013-14, 2014-15, 2015-16. The data are obtained from "CO ₂ Baseline Database for Indian Power Sector" version 12.0, published by the Central Electricity Authority, Ministry of Power, and Government of India.
$EF_{grid,BM,y}$	0.9083 tCO ₂ /MWh	Build margin CO ₂ emission factor for the project electricity system in year y	Calculated as per "Tool to calculate the emission factor for an electricity system, version 06.0.0" BM is calculated ex-ante based on the most recent information available at the time of submission of PDD and is fixed for the entire crediting period. The data is obtained from "CO ₂ Baseline Database for Indian Power Sector" version 12.0, published by the Central Electricity Authority, Ministry of Power, and Government of India.

Validation Team, therefore, concludes that the PDD conforms to the guidance given by EB via VVS version 01 for the project activity.

3.3.5 Additionality

Means of validation	The Detailed project report is checked to confirm the capacity and additionality of the project
Findings	CAR 03 was raised during the validation process. Please refer Appendix 2 of the report for the closure of the CAR.
Conclusion	Additionality Assessment for large scale project In line with VCS Standard version 3.5, the additionality of the Project activity is ascertained in line with the applicable guidance from the UNFCCC. The demonstration of additionality for the proposed Project activity is being carried out in accordance with the additionality tool provided by the UNFCCC i.e. “Tool for demonstration and assessment of Additionality” Version 07.0.0,. The tool provides a step-wise approach to demonstrate additionality which is displayed below: Step 0: Demonstration whether the proposed project activity is the first-of-its-kind The proposed project activity is not the first-of-its-kind. Hence not applicable. Step 1: Identification of alternatives to the project activity consistent with current laws and regulations Sub-step 1a: Define alternatives to the project activity: Identify realistic and credible alternative(s) available to the project participants or similar project developers that provide outputs or services comparable with the proposed VCS project activity. The purpose of the project activity is to generate electrical power using wind energy and feed the electricity generated to the grid. Hence, the following alternatives are considered: Alternative 1: The proposed project activity not undertaken as a VCS project activity. The PP could proceed with the implementation of the project without Carbon credit benefits. The electricity produced from the renewable energy project would have been sold to the grid. This is in compliance with all applicable legal and regulatory requirements and can be a part of the baseline. However, the Project activity is not feasible without revenues from sale of Carbon Credits. This argument has been discussed in step 2 of the Additionality section. Alternative 2: No proposed project activity and equivalent amount of energy would have been produced by the grid electricity system through its currently running power plants and by new capacity addition to the grid

	i.e. Continuation of the present situation. The PP would have continued without investment in Project activity with usual business activities. The grid would continue with the fossil fuel based power projects and this would result in GHG emissions. Hence, the new capacity add-on from a fossil fuel based power plant is appropriate, realistic & credible baseline alternative for the project activity. Outcome of Sub-step 1a: All the realistic alternatives for the project activity have been enlisted above. Sub-step 1b: Consistency with mandatory laws and regulations: The alternative(s) shall be in compliance with all applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution. (This sub-step does not consider national and local policies that do not have legally-binding status.). The relevant national laws and regulations pertaining to generation of energy in India are: • Electricity Act 2003 • National Electricity Policy 2005 • Tariff Policy 2006 The Project activity conforms to all the applicable laws and regulations in India: • Power generation using wind energy is not a legal requirement or a mandatory option. • There are state and sectoral policies, framed primarily to encourage wind power projects. These policies have also been drafted realizing the extent of risks involved in the projects and to attract private investments. • The Indian Electricity Act, 2003 (May 2007 Amendment) does not influence the choice of fuel used for power generation. • There is no legal requirement on the choice of a particular technology for power generation. Outcome of Sub-step 1b: Hence, both the alternatives enlisted above are found to comply with the mandatory laws and regulations taking into account the enforcement of the legislations in the region or country and EB decisions on national and/or sectoral policies and regulations. However, Alternative 2 has been selected as the appropriate baseline alternative for this project activity. Step 2: Investment analysis The detail analysis is presented above in the report.
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3.3.6 Quantification of GHG Emission Reductions and Removals

Means of validation	The emission reduction sheet, CEA database and Joint PD and MR version 02 is checked by the assessment team.
Findings	CAR 04 was raised during the validation process. Please refer Appendix 2 for the closure of the report.
Conclusion	The baseline emissions as discussed in section B.6.1 will include emissions that would have occurred in the absence of the project activity. The emission reduction calculation has been done as per the ACM 0002 version 17. <u>Baseline Emission (BE_y):</u> $BE_y = EG_{PJ,y} \times EF_{grid,y} \text{-----}(1)$ Where BE_y = Baseline Emissions in year y; (tCO₂) EG_{pj,y}= Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)- EF_{grid, y} = Grid emission factor (MWh/tCO₂) PROJECT OWNERS has estimated the baseline energy generation considering the capacity of the project activity, yearly generation hour and plant load factor. Validation team assessed the technical specification of the promoters of the project activity, Power purchase agreement and found that installed capacity of this project activity is correct. Baseline emission factor is calculated as combined margin, consisting of a combination of operating margin (OM) and build margin (BM) factors according to the procedure prescribed in the "Tool to calculate the emission factor for an electricity system" version 12.0 which is sourced from CEA, Govt. of India and forms the part of emission reduction calculation. The baseline emission factor calculation is checked by the validation team and found that the calculation is transparent and conservative. For estimating the operating margin emission factor, PROJECT OWNERS calculated ex-ante Simple Operating Margin (OM). As per the "Tool to calculate the emission factor for an electricity system": for grid power plants, use a 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation. Hence, PROJECT OWNERS considered the weighted average of latest net electricity generation and import of electricity and associated emission from CEA version 12. The value of operating margin considered as 0.9843tCO₂ /MWh and the value of build margin as 0.9083tCO₂ /MWh (based on the latest one year data). The weighting for both operating margin is taken as 0.75 and build margin as 0.25 for wind power generation projects. Validation team checked the estimation procedure and considered data and found transparent and conservative. Emission factor of the project considered is mentioned below: EF_{grid, y} = 0.9653tCO₂e/MWh and it is fixed ex ante for the crediting period. Considering this process, combined margin emission factor has been considered

	and same value is confirmed correct. <u>Project Emissions:</u> As Wind technology is a renewable energy source and as per the ACM 0002 version 17 there are no project related emissions associated with it, therefore, $PE_y = 0$. <u>Leakage Emissions:</u> As per ACM 0002 version 17, there is no leakage emission. <u>Emission Reductions:</u> The project activity reduces carbon dioxide emissions through displacement of grid electricity generation with predominantly fossil fuel based power plants⁸ by renewable electricity. The emission reduction (ER_y) due to project activity during a given year y is calculated as the difference between baseline emissions (BE_y), project emissions (PE_y) as per the formulae given below: $ER_y = BE_y - PE_y$: As per ACM 0002 Where, BE_y = Baseline emissions in the year y in tCO_{2e} PE_y = Project emissions in the year y. LE_y = Emissions due to leakage in the year y. As per ACM 0002 $PE_y = 0$ for the project activity as per the methodology Therefore, $ER_y = BE_y$ for the project activity.
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3.3.7 Methodology Deviations

The project activity used ACM 0002 version 17 which is as latest as per UNFCCC website and thus no deviation is sought regarding the methodology. The project complies with all the requirement of the methodology and thus deviation to the methodology is not a requirement for the present project activity.

3.3.8 Monitoring Plan

Means of validation	Assessment team checked the monitoring practice onsite and also checked the guideline of respective State electricity regulatory commission.
Findings	CAR 05 was raised during the validation process. Please refer Appendix 2 of this report for the closure of the CAR.
Conclusion	<u>Parameters determined ex-ante:</u> Baseline emission factor of INDIAN Grid is establish ex-ante based on Tool to

⁸http://www.cea.nic.in/power_sec_reports/general_review/0304/tables.pdf

calculate the grid emission factor version 06, using a combined approach consisting 75 % operating margin and 25 % build margin. The emission coefficient from official data published in Central Electricity Authority (CEA) CO₂ Baseline database version 12 available to the project participant at the time of submission of Joint VCS PD and MR for validation and global stakeholder's consultation process. CEA is an official source of Ministry of Power, Government of India have worked out baseline as CO₂ baseline database. The assumption were verified by the validation team and found to be correct.

Parameters determined ex-post:

The parameters monitored ex-post involves net electricity supplied to the grid (calculated from electricity exported and imported) to the INDIAN grid by the project activity.

As per the Joint MR and PD version 02, Credit note/ JMR/Form B reports/ monthly generation report from respective state electricity board/DISCOM will be the source of data during verification for each of the respective states. The DOE will use the same source for verification of emission reductions As per the ACM 0002 version 17 "Monitoring shall consist of metering the net electricity supplied by the project activity to the grid. Measurement results shall be cross-checked with records of the Invoices".

In accordance with the methodology requirement, net electricity supplied by the project activity is obtained from Credit note/ JMR/Form B reports/ monthly generation report from respective state electricity board/DISCOM which provide input values ($EG_{\text{export},y}$, $EG_{\text{import},y}$), used for calculation of $EG_{\text{pi},y}$ by the project activity and form the basis for emission reduction calculation.

Electricity export to the grid and import from the grid is metered by main and check tri-vector energy meters. The main meter reading is taken jointly on a fixed day of every month for the preceding month at the delivery point and signed by the representatives of state utility and O&M personnel. In the event of failure of main meter, the check meter will be used in monitoring the electricity data. The agency is experienced in the monitoring system and is managing O&M of numerous other wind farm projects. The validation team therefore is of the opinion that the project participant through the O&M agency is capable of implementing the monitoring plan in the context of the project activity.

Calibration of all the meters is done by state electricity board officials as per the industry standards. However, the calibration will be done once in a 5 year⁹ for all the project activity. The meters will be of accuracy class 0.2 for the respective states. The meter accuracy class and calibration interval is under purview of state electricity board and PP do not have any control on it. It is also noted that apportioning procedure is under control of state electricity board and PP do not have any control on it. The Calibration agency follows the national guideline for calibration and the traceability is also established regarding the same. The national guideline is under the purview of National Accreditation Board for Testing and Calibration Laboratories (<http://www.nabl-india.org/>) and all the Calibration agency follows the same. Assessment team found that for the

⁹ http://powermin.nic.in/whats_new/pdf/Metering_Regulations.pdf, page 12

	present project activity the calibration is done by an accredited calibration agency by National Accreditation Board for Testing and Calibration Laboratories and thus the Calibration certificate is found correct. The available parameter to PP is the net electricity supplied to grid and same parameter is mentioned as monitoring parameter. The Net electricity exported to the grid will be cross checked against the invoice raised by the PP towards the DISCOM The energy meter recording the export and import from the grid at substation is under the control and supervision of state electricity board officials. Similarly O&M contractor is responsible for monitoring of the generation data at CMS. It is reported that the data will be kept for 2 years following the end of the crediting period. The responsibilities and authorities of project management, data handling and recording, measurement methods and QA/QC procedure have been systematically established and formalized and the same was verified during the site visit.
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3.4 Non-Permanence Risk Analysis

Not applicable for the present project activity.

4 SAFEGUARDS

4.1 No Net Harm

The bundled project activity promotes environmental and socio-economic well-being as it results in zero GHG emissions due to installation and operation of clean, renewable energy technology for electricity generation. CAR 06 was raised during the validation process. Please refer Appendix 2 in the report for the closure of the CAR.

As project is a renewable energy project hence there is no negative environmental and socio impact effect and the same can be summarized in the below table:

S.No.	Indicator	Assessment team opinion
1	Air quality	The project generates clean energy which replaces the fossil fuel intensive electricity generation. Also report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report clearly mentioned that wind farms operations do not result in direct air pollution. Adequate measures were taken to

		mitigate the envisaged impacts like spraying water on the road side to reduce dust level, etc. This was confirmed by the local stakeholders. Therefore, it is validated that mitigation measures were robustly implemented on ground for air quality issues project will have a positive impact on air quality.
2	Water quality and quantity	The project has no effect on water quality and quantity because it neither generates any waste nor consume any water. It was validated during on-site assessment that there was no requirement of water for operations of Wind turbine and the only usage of water was for drinking and sanitation purpose. The consumption of fresh water during construction was also pretty much limited as confirmed by the local stakeholders. Hence the parameter is indicated as neutral and the same is acceptable to the DOE
3	Soil condition	There are negligible impacts envisaged during operation of the project activity. For mitigating the impacts during construction, various mitigation measures were taken which is validated from the plant records of PP and the interview with local villagers. The top soil excavated during construction, was stockpiled and used for compaction. The roads were not paved and soling was done with excavated earth & rock material, so land disturbance could be minimized. It was also confirmed that, the vegetation done at site helps for soil erosion. The same is confirmed during the stakeholder meetings during onsite visit. Therefore, it can be concluded that

		the project has no effect on soil conditions during its operation because it has no waste coming out.
4	Biodiversity	During the validation site visit it was observed that the condition of ground vegetation will be gradually improved; No rare species has been found in the around area. The project site is not on the migration route of migratory bird. As Such Wind turbine do not have any obstruction in the path of migratory birds. With the implementation of Project, the greening water will be increased significantly; the biodiversity in the vicinity will be improved with the vegetation improvement. NO negative impact envisaged.
5	Employment Generation	The project activity employed local population as skilled workers as well as security guards which were envisaged during the validation site visit. The personnel employed by the project activity are also provided trainings and exposed to various awareness programs therefore a positive indicator has been accepted.
6	Livelihood of the poor	The project is associated with infrastructure development like roads in the nearby areas and promoting economic activities like grants to local school and communities temples etc. Also, project employed local villagers as guards for the security of Wind turbines. Positive impact envisaged. .

4.2 Environmental Impact

Means of validation	The guideline provided by MOEF is checked by the assessment team http://envfor.nic.in/legis/eia/so1533.pdf
Findings	No findings raised
Conclusion	The project activity is expected to have positive impacts and no significant adverse environmental impacts are foreseen. Since, the project activity is an electricity generation from renewable source (i.e. wind energy) therefore no negative impact are envisaged. There is no mandatory legal requirement for carrying out an environmental impact assessment in the host country. The Ministry of Environment and Forests (MoEF), Government of India (GoI) notification ¹⁰ dated September 14, 2006 regarding the requirement of Environment Impact Assessment (EIA) studies states that any project developer in India needs to file an application to the Ministry of Environment and Forests (including a public hearing and an EIA) in case the proposed industry or project is listed in a predefined list. The list includes thirty nine project activities that require EIA studies. The wind power projects are not included in this list and thus an EIA study is not required.

4.3 Local Stakeholder Consultation

Means of validation	The local stakeholder consultation MOM, attendance sheet is checked by the assessment team. During the validation site visit assessment team also interviewed some of the stakeholder present during the meeting with PP.			
Findings	CAR 07 was raised during the validation process. Please refer below Appendix 2 for the closure of the CAR			
Conclusion	As per the VCS requirements, it is necessary to invite the relevant stakeholders, prior of the validation process. The detail of the invitation date and stakeholder meeting date is as below:			
	Sr. No.	Project Activity Name	Notice Date	Stakeholder Consultation date
	1.	Mytrah Vayu (Indravati) Pvt. Ltd.	10/11/2015	21/11/2015
	2.	Mytrah Vayu (Indravati) Pvt. Ltd.	11/08/2015	22/08/2015
	3.	Mytrah Vayu (Som) Pvt. Ltd.	08/02/2016	20/02/2016
	4.	Mytrah Vayu (Som) Pvt. Ltd.	28/01/2016	06/02/2016

¹⁰<http://envfor.nic.in/legis/eia/so1533.pdf>

	5.	Mytrah Vayu (Godavari) Pvt. Ltd.	15/02/2016	22/02/2016
	6.	Mytrah Vayu (Krishna) Pvt. Ltd.	10/01/2017	18/01/2017
	7.	Mytrah Vayu (Tungabhadra) Pvt. Ltd.	12/09/2016	20/09/2016
All the stakeholders have been invited through public notice to attend the stakeholders meeting. The local stakeholders' consultation meeting was attended by local persons including local villagers, local vendors and technology suppliers. The stakeholders identified by the project participant were local villagers who are the major population of the particular area, local communities and gram panchayat (Village head), WTG supplier, project proponent representatives, O&M Team and other people involved in the project. Validation team verified the list of participants who attended the stakeholder meeting and feedback questionnaire and confirms the stakeholders identified are relevant. Validation team verified the list of participants who attended the stakeholder meeting and feedback questionnaire and confirms the stakeholders identified are relevant. The validation team also verified the minutes of meeting to note that no negative comments were received and the same was cross checked with the information obtained during follow up interviews with the stakeholder's. Thus Validation team is of the opinion that the stakeholder meeting was adequate and appropriate. Assessment team also noted during the validation site visit that PP has already put a grievance register onsite in where stakeholders can write there complain if any. The complain if found genuine will be immediately resolve by PP with the best reasonable level of knowledge and satisfaction of the stakeholders. The process is found genuine and thus PP ensured that ongoing process of Stakeholders benefits and complain can be taken care after and during operation of the power plant.				

4.4 Public Comments

Assessment team checked the project was listed on VCS web site on 21/11/2017 (http://www.vcsprojectdatabase.org/#/pipeline_details/PL1728) for 30 days period. CAR 08 was raised during the validation and verification process. Please refer Appendix 2 for the detail closure of the CAR.

Comments received during Stakeholder consultation	Response by the DOE
1. There are many individual project participants	1. Assessment team noted that in the title of the project the word bundle is mentioned. Moreover, the capacity of the project varies from 8.4 MW to 148.9 MW. Thus the scale ranges from small to Large. The additionality for each project is described separately which is acceptable to the assessment team. Since it is not a small scale bundling thus

described, thus I am assuming it's a bundled project, which should have been specified in the PD, but I think it has purposefully not been written. How it is that the contact details of the project proponent have not been described. 2. The communications agreement mentions EKI as the consultant why has that not been mentioned in the other entities involved? 3. Under the Additionality sections it is mentioned "Financial spread sheets for the key assumptions (web links & sources of input parameters) supporting the financial projections would be submitted and updated to the DOE. 4. Common	bundling form is not required. Regarding the 2nd part of the comment the minimum detail required by VCS is provided by PP during the listing. The listed VCS PD has mentioned the PP name, contact person and address and minimum listing requirement is met. Please refer this web link for PP address http://www.mytrah.com/contact-us.php. The VCS PD mentioned the same address as "8001, 8th Floor, Q-City, Nanakramguda, Gachibowli, Hyderabad 500032, Telangana, India" Hence GSC comment can be closed out 2. The project is listed through client VCS account and also communication agreement does not mention any name of EKI. Assessment team checked the details and found the same to be correct. Public comment can be closed out. 3. The financial additionality is checked properly by the assessment team. The details text is provided in the report above regarding Investment analysis. CAR 03 is raised during the Joint Validation and Verification process and closed successfully. Please refer Appendix 2 of this report. Public comment is thus closed. 4. The common practice analysis is checked and detail text is mentioned in the report. CAR 03 is raised during the Joint Validation and Verification process and closed successfully. Please refer Appendix 2 of this report. CAR is closed. Moreover, this is bundled large scale project activity and as per tool of common practise analysis, the project activity capacity need to be considered for the common practise analysis. Assessment team noted below CDM registered projects to confirm the same: UN0968 (https://cdm.unfccc.int/Projects/DB/SGS-UKL1374066912.42/view) UN9735 (https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1378973294.94/view), UN8459 (https://cdm.unfccc.int/Projects/DB/PJR%20CDM1354186685.85/view), UN7560 (https://cdm.unfccc.int/Projects/DB/RWTUV1349092273.88/view), UN7099(https://cdm.unfccc.int/Projects/DB/RWTUV1346067870.82/view), and
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practice analysis, where are the projects what is source, EKI does not this? Since the projects are bundled together each bundle has to be assessed separately as per the CDM guidelines. 5. The LSC meeting details are not provided at all?	UN9534 (https://cdm.unfccc.int/Projects/DB/PJR%20CDM1359094049.33/view) Public comment is thus closed. 5. The Local stakeholder meeting details like Attendance sheets, Minutes of Meeting, site photos are checked by the assessment team and found that the stakeholder consultation took place adequately. Moreover, assessment team interviewed some of the stakeholder during the validation site visit and confirm that no negative comments are envisaged for the project activity as project provide job opportunity to the local people and thus all of them are happy with the implementation of the project. Also, assessment team noted that PP also provided Grievance mechanism register onsite and asked stakeholders to provide any comment during now and operation of the project activity. The comment if found genuine will be taken care by the management of the PP. The method is found correct by the assessment team and is in requirement of VCS. Also please refer detail closure of CAR 07 in Appendix 2 of this report. Public comment thus can be closed out.
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5 VERIFICATION FINDINGS

5.1 Accuracy of GHG Emission Reduction and Removal Calculations

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the Joint VCS PD+ MR. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the monitoring plan of the CDM PDD
Findings	CAR 09 was raised during the verification process. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	The baseline Emissions for a given year is calculated by multiplying the energy baseline (EB) with the regional grid emission factor. The grid in this case would be the 'INDIAN Grid' Formula Used (As per the PD):- $BE_y = EG_{pj,y} * EF_{grid,CM,y}$ Where BE_y = Baseline emission for year 'y' $EG_{pj,y}$ = Energy Baseline; and $EF_{grid,CM,y}$ = Emission factor for INDIAN Grid The verification team has checked the entire monthly Credit note/ JMR/Form B reports/ monthly generation report from respective state electricity board/DISCOM (primary source) and invoices (cross check) applicable for the

	monitoring period as per the project activity applied for verifications and found all the parameters are monitored and recorded as per the monitoring plan in the PD. The verification team has crosschecked the emission reduction sheet and monitoring report data with the Credit note/ JMR/Form B reports/ monthly generation report from respective state electricity board/DISCOM and invoice bills and found all the values are matching.
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5.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the break down log for the monitoring period. During the verification site visit the feeder wise location of the WTGs is also checked. The Calibration details are also checked.
Findings	CAR 10 raised during the verification process which was closed successfully. Please refer Appendix 2 of this report for the detail closure of the CAR.
Conclusion	The metering arrangement is tri-vector bi-directional energy meters (main and check) at the State Electricity Board (SEB) substation. These meters record several parameters including electricity exported & imported. Moreover, the meters are located at the HT side of the transformer and are of accuracy class of 0.2S for each project activity applied for verification. These electricity meters are being used by state electricity board for JMR (Joint Meter Reading) electricity generation statements. The Net electricity supplied to the grid is then calculated from export and import values. The net electricity exported to the grid is also cross checked from the invoices raised to respective state electricity board which is in line with Methodology requirement for large scale project. Hence assessment team confirmed that the value of net electricity exported to the grid as used in emission reduction calculation is correct. Electricity export to the grid and import from the grid is metered by main and check tri-vector energy meters. The main meter reading is taken jointly on a fixed day of every month for the preceding month at the delivery point and signed by the representatives of state utility and O&M personnel. In the event of failure of main meter, the check meter will be used in monitoring the electricity data. The agency is experienced in the monitoring system and is managing O&M of numerous other wind farm projects. The validation team therefore is of the opinion that the project participant through the O&M agency is capable of implementing the monitoring plan in the context of the project activity. Calibration of all the meters is done by state electricity board officials as per the industry standards. However, the calibration is done once in a 5year¹¹. The energy meter recording the export and import from the grid at substation is under the control and supervision of state electricity board officials. Similarly O&M contractor is responsible for monitoring of the generation data at CMS. The Calibration agency follows the national guideline for calibration and the traceability is also established regarding the same. The national guideline is under the purview of National Accreditation Board for Testing and Calibration Laboratories (http://www.nabl-india.org/) and all the Calibration agency follows

¹¹http://powermin.nic.in/whats_new/pdf/Metering_Regulations.pdf, page 12

	the same. Assessment team found that for the present project activity the calibration is done by an accredited calibration agency by National Accreditation Board for Testing and Calibration Laboratories and thus the Calibration certificate is found correct. It is reported that the data will be kept for 2 years following the end of the crediting period. The responsibilities and authorities of project management, data handling and recording, measurement methods and QA/QC procedure have been systematically established and formalized and the same was verified during the site visit. On-site visit and interview with O&M personnel also confirms that the operational and organizational chart as mentioned in Joint PD+MR is as per the site practice and thus assessment team confirms that the details are correct. The break down log is checked and found that the Wind turbine undergone scheduled maintenance and break down. No unforced error observed and feeder wise Wind turbine location is also checked and found correct.
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6 VALIDATION AND VERIFICATION CONCLUSION

Applus+ LGAI has been engaged by Mytrah Energy (India) Pvt. Limited to perform the Joint validation and verification of the “Bundled Wind Power Project by Mytrah Group”

The management of the project participant/owner is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's Monitoring Plan in the Joint PD and MR and the approved methodology ACM 0002 version 17.

Our Validation approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board and VCS board. Our approach is risk-based, drawing on an understanding of the risks associated with estimated GHG emissions data and the controls in place to mitigate these. The validation can confirm that:

- The projects description compliance with, the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline and standard version 3.7
- The project's baseline and additionality is assessed against ACM 0002 version 17 for the project
- The project's monitoring plan is assessed against ACM 0002 version 17 for the project activity.
- A risk based approach has been followed to perform this validation activity. The review of the project description and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews with Project Owner have provided

Applus+LGAI with sufficient evidence for positive validation opinion as per the requirement of VCS.

Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is operated as planned and described in the project document;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Monitoring Report is as per the PD
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately
- the monitoring system is in place and generates GHG emission reductions data;
- The GHG emission reductions are calculated without material misstatements.

The validation and verification report was updated on 05/01/2018 to include an assessment of how the project proponent took comments received during the public comment period into account, which were not forwarded by VCS until 02/01/2018. No changes were necessary to the project documentation, and the comments have no effect on the project or validation opinion. The comment from the Global stakeholder were already taken care by the assessment team via CAR/CL. Please refer Appendix 2 of this report for the detail closure of CAR/CL. Therefore, the official date of this report remains 21/12/2017. The deed of representation for both Validation and Verification as provided dated 22/12/2017 is thus valid for the project activity.

Verification period: From 30/12/2015 to 24/11/2017 (both days included)

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
Year 2015	0	0	0	0
Year 2016	492,610	0	0	492,610
Year 2017	778,418	0	0	778,418

Total	1271,028	0	0	1271,028
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The annual estimation (365 days) of emission reductions are 921,296 tCO₂e based on total capacity of project activity and for 696 days of monitoring period, the estimated emission reductions will be 175,6773 tCO₂. However in actual the emission reductions are 127,1028 tCO₂e which is lower than the estimated emission reductions (i.e. -38.216%). This is due to low PLF factor for few project sites and few projects are commissioned at later stage of current monitoring period.

APPENDIX 1: DOCUMENTS REVIEWED DURING VALIDATION AND VERIFICATION

No.	A u t h o r	Title	References to the document	Provider
1	N A	Commissioning certificates of the wind turbine implemented in the project site.	Commissioning certificates of the respective states.	PROJECT OWNERS
2	N A	Contract of the other entity with the DOE	Contract of the other entity with the DOE	PROJECT OWNERS
3	N A	Technical specifications of Wind Panels generators from manufacturers	Manufacturer technical specifications	PROJECT OWNERS
5	N A	Emission Calculation sheet- Estimated-	16/12/2017	PROJECT OWNERS

		Version 01 Emission Calculation sheet- Actual- Version 01	16/12/2017	
6	N A	The operational lifetime of the project activity from the manufacturer =(Technical specefication s)	Manufacturer technical specifications	PROJECT OWNERS
7	N A	SERC orders: http://mperc.gov.in/ http://www.gercin.org/ http://www.mercindia.org.in/ http://www.aperc.gov.in/ RBI: Reserve Bank of India www.rbi.org.in Ministry of Environment and forest: www.envfor.n	Reference link is provided.	Independent Search

		ic.in UNFCCC www.cdm.unfccc.int CEA: Central electricity authority www.cea.nic.in Income tax act 1961 http://law.incometaxindia.gov.in/DIT/ VCS: Verified Carbon Standard www.v-c-s.org		
08	NA	Tools/ guidelines used in the project activity Tool to determine the remaining lifetime of the project	UNFCCC CDM web site	UNFCCC

		activity in line with Annex 15 EB 50 • Tool to calculate the emission factor for an electricity system version 06 • Glossary of CDM terms version 07 • VCS verification report template version 03		
09	N	JMR records for the	JMR records	PROJECT

	A	complete monitoring period				OWNERS
10	N A	Joint PD+MR version 01 Joint PD+MR version 02 Joint PD + MR version 03	15/12/2017 16/12/2017 20/12/2017			PROJECT OWNERS
11	N A	Invoices for the complete monitoring period	Invoice			PROJECT OWNERS
12	N A	Break down details of the complete monitoring period	Log sheet			PROJECT OWNERS
13	N A	Calibration details of the project undergoing verifications	Please referee Appendix 5 of this report			PROJECT OWNERS
14	N A	Financial Analysis and common practice Analysis sheet.	16/12/2017			PROJECT OWNERS
15	N A	PLF reports for Individual project owners				PROJECT OWNERS
			Name of the SPVs	Location (State)	DPR	
			Mytrah Vayu (Indravati) Pvt. Ltd.	Rajasthan	15/07/2017	
			Mytrah Vayu (Indravati) Pvt. Ltd.	Andhra Pradesh	15/07/2017	
			Mytrah Vayu (Som) Pvt. Ltd.	Rajasthan	15/07/2017	

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			Mytrah Vayu (Som) Pvt. Ltd.	Madhya Pradesh	15/07/2017	
			Mytrah Vayu (Godavari) Pvt. Ltd.	Telangana	15/07/2017	
			Mytrah Vayu (Krishna) Pvt. Ltd.	Andhra Pradesh	15/07/2017	
			Mytrah Vayu (Tungabhadra) Pvt. Ltd.	Andhra Pradesh	15/07/2017	
16	N A	Board decision for individual project	Name of the SPVs	Location (State)	BR	PROJECT OWNERS
			Mytrah Vayu (Indravati) Pvt. Ltd.	Rajasthan	30/07/2015	
			Mytrah Vayu (Indravati) Pvt. Ltd.	Andhra Pradesh	30/07/2015	
			Mytrah Vayu (Som) Pvt. Ltd.	Rajasthan	30/07/2015	
			Mytrah Vayu (Som) Pvt. Ltd.	Madhya Pradesh	30/07/2015	
			Mytrah Vayu (Godavari) Pvt. Ltd.	Telangana	30/07/2015	
			Mytrah Vayu (Krishna) Pvt. Ltd.	Andhra Pradesh	30/07/2015	
			Mytrah Vayu (Tungabhadra) Pvt. Ltd.	Andhra Pradesh	30/07/2015	
17	N A	DPR	Name of the SPVs	Location (State)	DPR	PROJECT OWNERS
			Mytrah Vayu (Indravati) Pvt. Ltd.	Rajasthan	15/07/2015	
			Mytrah Vayu (Indravati) Pvt. Ltd.	Andhra Pradesh	15/07/2015	
			Mytrah Vayu (Som) Pvt. Ltd.	Rajasthan	15/07/2015	
			Mytrah Vayu (Som) Pvt. Ltd.	Madhya	15/07/2015	

				Pradesh	015	
			Mytrah Vayu (Godavari) Pvt. Ltd.	Telangana	15/07/2015	
			Mytrah Vayu (Krishna) Pvt. Ltd.	Andhra Pradesh	15/07/2015	
			Mytrah Vayu (Tungabhadra) Pvt. Ltd.	Andhra Pradesh	15/07/2015	

APPENDIX 2: CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS, FORWARD ACTION REQUEST (CAR/CL/FAR)

FOR VALIDATION:

CAR ID	01	Section no.	1	Date: 09/12/2017
Description of CAR				
During the document review it was observed that following details are missing in section 1.1 of the joint PD+MR version 01: 1. A summary description of the technologies/measures for individual WTGs as per the respective state (e.g., plant, equipment, process, or management or conservation measure) included in the project and the status of their implementation. 2. The relevant implementation dates (e.g., dates of construction, continued operation periods). Supporting regarding Commissions certificate is also missing. 3. The total GHG emission reductions or removals generated in this monitoring period. 4. The Latitude and longitude for the individual WTGs for the respective state is missing in the joint PD and MR. Corrective action is sought for the same.				
Project participant response				Date: 16/12/2017
1. <i>Summary Description of the technologies/ measure for the WTGs has been updated</i> 2. <i>Project start date along with unit wise commissioning dates has been mentioned. The commissioning certificate is being provided with this submission.</i> 3. <i>The total GHG emission reductions achieved during current monitoring period is mentioned in revised Joint PD & MR.</i> 4. <i>The Latitude and longitude for the individual WTGs for the respective state are mentioned in revised Joint PD & MR.</i>				
Documentation provided by project participant				
Commissioning certificates, Joint PD & MR version 2				
DOE assessment				Date: 18/12/2017

Following are the observation of the DOE:

1. Assessment team observed that the Summary Description of the technologies/ measure for the WTGs has been updated in the revised joint PD and MR. CAR is thus closed.
2. Assessment team observed that the project start date along with commissioning details are submitted to the assessment team. The commissioning certificate is checked and found correct by the assessment team. CAR is thus closed.
3. The total GHG emission reduction achieved during the monitoring period is checked and found correct by the assessment team. CAR is thus closed
4. The latitude and longitude for Individual WTGs are now mentioned in the revised joint PD and MR Version 02. CAR is thus closed.

CAR ID	02	Section no.	1.12.3 to 1.12.5	Date:	09/12/2017
Description of CAR					
During the desk review it was observed that the details regarding REC benefits were not provided. Please provide appropriate link for the same and also proper documents to confirm that the PP will not claim other form of environmental credit for the monitoring period concerned. Moreover, PP should also produce documentary evidence that it has not participated in any other form of GHG emission/rejected by any other form of GHG program for the current monitoring period. Corrective action is sought for the same and documents are required to be submitted for further analysis.					
Project participant response				Date:	16/12/2017
<i>This project is not registered under REC registry and the same can be verified from publically available Accredited RE Generators list, REC Registry of the India. Thus project activity does not involve any double counting of emission reductions. The PP declaration regarding not claiming other form of environmental credit for the monitoring period has been submitted to DOE.</i> Weblink: https://recregistryindia.nic.in/index.php/general/publics/accredited_regens <i>The declaration has been provided for the no participation in other GHG programme for current monitoring period. PP will not claim any other form of environmental credits other than VCU claim for current monitoring period. There is no any double accounting of emission reductions for current monitoring period.</i>					
Documentation provided by project participant					

<i>PP Declaration</i>	
DOE assessment	Date: 18/12/2017
The project has not obtained any benefit from the REC. The same is checked by the assessment team and found correct, The declaration regarding no participation in other GHG programme for current monitoring period, PP will not claim any other form of environmental credits other than VCU claim for current monitoring period and there is no any double accounting of emission reductions for current monitoring period is checked and found correct by the assessment team. CAR is thus closed.	

CAR ID	03	Section no.	2.5	Date: 09/12/2017
Description of CAR				
During the desk review of the PDD and onsite visit document verifications, APPLUS team observed following inconsistency in the additionality determination : - Following documents are missing and thus the IRR calculation is reserved: - PLF reports - All the input value (e.g. DPR, Loan sanction if any, Insurance etc) - IRR calculation is reserved as no IRR sheets are provided - Common Practice analysis supporting documents Additionality section of the VCS PD version 01 is reserved till the documents and IRR sheet are submitted.				
Project participant response				Date: 16/12/2017
<i>The DPR by third party having the PLF information along with input assumptions, Common Practice analysis and other supporting documents is being submitted to the DOE.</i> <i>IRR calculation spreadsheets are submitted to DOE.</i>				
Documentation provided by project participant				
<i>Joint PD & MR version 2</i> <i>IRR sheets for each site</i> <i>DPRs</i>				

DOE assessment	Date: 18/12/2017
Following are the observation of the DOE: 1. PLF reports, DPR, Loan sanction, DPRs are now submitted to the assessment team and found correct. CAR is thus closed 2. IRR calculation sheet is now checked and found correct by the assessment team. CAR is thus closed 3. Common practice analysis is now submitted to the DOE. DOE also made independent analysis of the details presented by PP and found correct. CAR is thus closed 4. Additionality section is now rectified in the revised VCS PD version 02. CAR is thus closed.	

CAR ID	04	Section no.	3	Date: 09/12/2017
Description of CAR				
Assessment team found during desk review is that emission reduction sheet is missing for the project activity. Hence estimated ER in section 3 of the Joint PD and MR is thus reserved.				
Project participant response				Date: 16/12/2017
<i>Emission Reduction sheet is being provided to the DOE</i>				
Documentation provided by project participant				
<i>ER estimation Sheet and actual ER sheet</i>				
DOE assessment				Date: 18/12/2017
The Emission reduction sheet is now submitted to the assessment team. CAR is thus closed.				

CAR ID	05	Section no.	4.2	Date: 09/12/2017
Description of CAR				
During the desk review it was observed that the state wise Monitoring practice were not included in Joint PD and MR. Corrective action is sought for the same.				
Project participant response				Date: 16/12/2017

The correction has been made, request you to refer the joint PD and MR version 2. The source for net electricity supplied to grid has been provided in Joint PD & MR.

Documentation provided by project participant

Joint PD & MR Version 2

DOE assessment

Date: 18/12/2017

The state wise monitoring practice is now included in the revised VCS PD. The details as mentioned in the revised VCS PD is as per the onsite practice. CAR is thus closed.

CAR ID	06	Section no.	5.1	Date: 09/12/2017
Description of CAR				
The no Net harm details are missing in the VCS PD. Moreover, as VCS PD claims that there are no negative impacts on air, water, soil quality and ambience are envisaged due to the project activity however supporting and explanation of the same is missing.				
Project participant response				Date: 16/12/2017
<i>The project activity does not involve any major construction activity. It primarily requires the installation of the WTGs, interfacing the generators with the State Electricity Board by setting up HT transmission lines and installation of other accessories.</i> <i>The report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report clearly mentioned that wind project activity operations do not result in direct air pollution, noise pollution. Please refer below web link for the same (http://mnre.gov.in/file-manager/UserFiles/report-on-developmental-impacts-of-RE.pdf).</i> <i>Thus there are no any significant impacts due to implementation of project activity on air, water, soil quality and ambience are envisaged due to the project activity.</i> <i>The same information has been updated to the joint PD and MR.</i>				
Documentation provided by project participant				
<i>MNRE Report on development impact of Renewable Energy</i>				
DOE assessment				Date: 18/12/2017
The detail are now included in the revised VCS PD and MR and found correct. CAR is thus closed.				

CAR ID	07	Section no.	5.3	Date: 09/12/2017
Description of CAR				
During the desk review related to stakeholder consultation following observation is made by the APPLUS project team: 1.The stakeholder documentation is also not provided to the DOE 2. The site photograph of LSHC meeting is not provided to the DOE. Corrective action is this sought for the same.				
Project participant response				Date: 16/12/2017
<i>The stakeholder documentation along with site photographs is being submitted.</i>				
Documentation provided by project participant				
<i>Stakeholder Documentation and Site Photographs</i>				
DOE assessment				Date: 18/12/2017
The MOM, site picture, attendance sheet is submitted to the DOE. The documents are checked and assessed correct by the assessment team. The documents reveals that the stakeholder meeting was conducted as per the requirement of VCS. CAR is thus closed.				

CAR ID	08	Section no.	5.4	Date: 09/12/2017
Description of CAR				
During the desk review it is observed that the section in the VCS PD & MR contains details regarding local stakeholders however the section is for Global stakeholder consultation process. Corrective action is sought for the same.				
Project participant response				Date: 16/12/2017
<i>Local stakeholder consultation is mentioned in section 5.3 and the relevant information has been added to the 5.4 Public comments section.</i>				
Documentation provided by project participant				

<i>Joint PD & MR Version 2</i>	
DOE assessment	Date: 18/12/2017
Assessment team accept the correction in Joint VCS PD and MR. CAR is thus closed.	

FOR VERIFICATION:

CAR ID	09	Section no.	3	Date: 09/12/2017
Description of CAR				
Assessment team found during desk review is that emission reduction sheet is missing for the project activity. JMR sheets and the invoices are missing. The claimed ER is thus reserved till submission of proper documents.				
Project participant response				Date: 16/12/2017
<i>Emission reduction sheet along with respective JMR is being submitted to the DOE.</i>				
Documentation provided by project participant				
<i>Actual ER Sheet and JMR.</i>				
DOE assessment				Date: 18/12/2017
Actual Achieved ER sheet is checked and found correct by the assessment team. CAR is thus closed.				

CAR ID	10	Section no.	Appendix	Date: 09/12/2017
Description of CAR				
The calibration certificates of and details for the individual PP are missing. The assessment is thus reserved until the calibration details are submitted.				
The breakdown details for the complete monitoring period is missing. Corrective action is sought in joint PD and MR and supporting documents are sought for the same.				
Project participant response				Date: 16/12/2017
<i>The calibration certificates and the breakdown details of the individual PP is being submitted.</i>				
Documentation provided by project participant				
<i>Calibration certificate and breakdown details of each PP.</i>				

DOE assessment	Date: 18/12/2017
Assessment team found that the site wise calibration details are found correct by the assessment team. The calibration certificates were also checked and found correct. CAR is thus closed.	

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Verification 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 review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader/Lead Assessor	OR	DAS	SUKANTA	TQC-Outsourced entity	Yes	Yes	Yes	Yes

Technical reviewer and approver of the verification and certification report

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 (TR)	IR	Xue	Denny	Applus+ LGAI
2.	Approver	IR	Sendin	Juan	Applus+ LGAI

Short CVs of the Team:

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 Nine (9) years of working experience at TUV NoRD/ Re-

consult/CRA/APROJECT OWNERSLUS 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 APROJECT OWNERSLUS certification to carry out GHG audit.

2. Hanshen (Denny) Xue (Master Degree in Environmental Engineering, Bachelor Degree in Thermal Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment. He is based on Shanghai. He has 1.5 years of work experiences in CDM project development. Before he joined Applus+ LGAI, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development.

APPENDIX 4: ABBREVIATIONS

Abbreviations	Full texts
APERC	Andhra Pradesh electricity regulatory commission.
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CEA	Central Electricity Authority
CL	Clarification request
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
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GERC	Gujarat Electricity regulatory commission
GWP	Global Warming potential
APERC	Andhra Pradesh Electricity regulatory commission
MPERC	Madhya Pradesh Electricity regulatory commission
JMR	Joint Metering reading
RBI	Reserve Bank Of India
SERC	State Electricity regulatory commission

APPENDIX 5: CALIBRATION DETAILS OF THE PROJECT ACTIVITY (UNDERGONE VERIFICATION)

Assessment team found that being a Green field project activity and commissioned within 2 years, all meters are used for monitoring purpose are pre calibrated before installation as per state electricity board regulations, thus installed pre calibrated meters have validity of calibration till 5 years of commissioning date. The current monitoring period is within 2 years of commissioning date, thus all meters initial calibration is valid for current monitoring period. The meters are tested by state electricity board during commissioning, thus all meters have valid calibration period during current monitoring period.

The below mentioned meter and calibration details are for current monitoring period, and the same will be changed in future.

The Energy Meters details used for commissioned project activity is as below.

The Main and Check meter details of Nazeerabad Site are as follows:

Main Meter		Check Meter	
Make	L & T	Make	L & T
Meter Sl. No	15624894	Meter Sl. No	15624896
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	22/08/2017	Calibration Date	22/08/2017

The Main and Check meter details of Pottipadu Site are as follows:

For- 65.1 MW					
PPD- 06 (21 MW)					
Main Meter		Check Meter		Backup Meter	
Make	Secure	Make	Secure	Make	Secure
Meter Sl. No	XC559930	Meter Sl. No	XC559931	Meter Sl. No	XC559924
Accuracy Class	0.2 s	Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	20/11/2017	Calibration Date	20/11/2017	Calibration Date	20/11/2017

PPD- 40 (23.1 MW)					
Main Meter		Check Meter		Backup Meter	
Make	Secure	Make	Secure	Make	Secure
Meter Sl. No	XC559921	Meter Sl. No	XC559922	Meter Sl. No	XC559923
Accuracy Class	0.2 s	Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	20/11/2017	Calibration Date	20/11/2017	Calibration Date	20/11/2017

PPD- 35 (21 MW)					
Main Meter		Check Meter		Backup Meter	
Make	Secure	Make	Secure	Make	Secure
Meter Sl. No	XC559932	Meter Sl. No	XC559933	Meter Sl. No	XC559934
Accuracy Class	0.2 s	Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	22/11/2017	Calibration Date	22/11/2017	Calibration Date	22/11/2017

For- 39.9 MW					
Feeder- 01					
Main Meter		Check Meter		Backup Meter	
Make	Elster	Make	Elster	Make	Elster
Meter Sl. No	13720861	Meter Sl. No	13720862	Meter Sl. No	13720866
Accuracy Class	0.2 s	Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	21/11/2017	Calibration Date	21/11/2017	Calibration Date	21/11/2017

Feeder- 02					
Main Meter		Check Meter		Backup Meter	
Make	Elster	Make	Elster	Make	Elster

Meter Sl. No	13720867	Meter Sl. No	13720868	Meter Sl. No	13720872
Accuracy Class	0.2 s	Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	21/11/2017	Calibration Date	21/11/2017	Calibration Date	21/11/2017

The Main and Check meter details of Nidhi Site are as follows:

Feeder- 09			
Main Meter		Check Meter	
Make	Genus	Make	Genus
Meter Sl. No	A 3015605	Meter Sl. No	A 3015606
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	29/05/2017	Calibration Date	29/05/2017
Feeder- 10			
Main Meter		Check Meter	
Make	Genus	Make	Genus
Meter Sl. No	A 3015607	Meter Sl. No	A 3015608
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	29/05/2017	Calibration Date	29/05/2017

The Main and Check meter details of Bhesada Site are as follows:

Feeder- 12 (SEL- 197)			
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	RJB 781888	Meter Sl. No	RJB 78189
Accuracy Class	0.2 s	Accuracy Class	0.2 s

Calibration Date	28/04/2016	Calibration Date	28/04/2016
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Feeder- 03 (SEL- 195)			
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	RJB 78194	Meter Sl. No	RJB 78200
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	28/04/2016	Calibration Date	28/04/2016

Feeder- 04 (SEL- 04)			
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	RJB 78201	Meter Sl. No	RJB 78203
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	28/04/2016	Calibration Date	28/04/2016

The Main and Check meter details of Aspari Site are as follows:

Aspari- I			
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	APX01010	Meter Sl. No	APX01011
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	13/10/2017	Calibration Date	13/10/2017

Aspari- II			
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Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	APX01012	Meter Sl. No	APX01013
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	13/10/2017	Calibration Date	13/10/2017

The Main and Check meter details of Burgula Site are as follows:

Burgula- II			
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	APX01021	Meter Sl. No	APX01022
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	30/03/2017	Calibration Date	30/03/2017

The Main and Check meter details of Nipaniya Site are as follows:

Nipaniya			
Main Meter		Check Meter	
Make	Secure	Make	Secure
Meter Sl. No	MPC70479	Meter Sl. No	MPC70480
Accuracy Class	0.2 s	Accuracy Class	0.2 s
Calibration Date	10/01/2016	Calibration Date	10/01/2016

The main meter MPC70479 is replaced by MPC70481 on 09/05/2016 and calibrated on 09/05/2016