



# “51 MW WIND POWER PROJECT AT CHITRADURGA”

Document Prepared By  
M/S. NSL Renewable Power Private Limited”

|                                  |                                                                                                                                                                                                                                          |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project title</b>             | 51 MW Wind Power project at Chitradurga                                                                                                                                                                                                  |
| <b>Project ID</b>                | 706                                                                                                                                                                                                                                      |
| <b>Monitoring period</b>         | 01-January-2023 to 31-December-2023, inclusive of both start and end dates                                                                                                                                                               |
| <b>Original date of issue</b>    | 12-February-2024                                                                                                                                                                                                                         |
| <b>Most recent date of issue</b> | 22-June-2024                                                                                                                                                                                                                             |
| <b>Version</b>                   | 1.2                                                                                                                                                                                                                                      |
| <b>VCS Standard Version</b>      | 4.6                                                                                                                                                                                                                                      |
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# PROJECT DETAILS

## 1.1 Summary Description of the Implementation Status of the Project

The project activity is a Wind Power Generation project of total capacity 50.4 MW, installed and currently operational at Bhimasamudra site in Chikkandavadi and Kallavanagathihalli village, Chitradurga District of Karnataka in India. The project activity has been connected to Indian Grid (previously it was as Southern Grid) through sub-stations owned and maintained by the state electricity utility.

Nuziveedu Seeds Limited had made an application for conversion to private company under section 31(1) of the companies act and received approval from central government for name change as “Nuziveedu Seeds Private Limited” on 26-June-2008. In continuation to that, on 16-June-2010, the central government approved for the name change as “NSL Renewable Power Private Limited” (hereafter referred as NSL) in line with section 21 of the companies act-2013. "On 10-December-2007, NSL had released purchase order to Regen Power Private Limited (RPPL) for 34 nos. of Wind Turbine Generators (WTGs) (1.5 MW each) for a capacity of 51 MW. RPPL had supplied 9 WTGs on time out of the 34 WTGs. From the balance 25 nos. of WTGs, RPPL supplied only 19 WTGs and informed NSL on 12-September-2009 that the balance 6 WTGs could be supplied only later (after June 2010). So, considering the delay in supply of WTGs from RPPL, NSL decided to replace Regen make of 6 nos. WTGs with 4 nos. of WTGs of Suzlon make each having capacity of 2.1 MW. Based on this, NSL released new purchase order to Suzlon Energy Limited (SEL) for 4 no WTGs. Hence the current capacity amounts to 50.4 MW which is lower than the capacity mentioned in the title. PP is also developing the project under CDM<sup>1</sup> and received HCA with the same title. PP is using the same title for consistency between their CDM and VCS project. It's important to highlight that the project's actual installed capacity of 50.4 MW is indeed lower than the originally titled and proposed capacity of 51 MW. However, it's crucial to emphasize that the Project Proponent (PP) has consistently used the accurate actual installed capacity of 50.4 MW in all emissions reduction calculations.

The Project WTGs are currently operational and had successfully completed 10 years of first crediting period under VCS (end date of first crediting period was 05-June-2018). The first machine under the project activity was commissioned on 06-June-2008 and last machine under the project activity was commissioned on 30-September-2011. The expected operational lifetime of the project is minimum of 20 years.

The current monitoring period covered under this document is from 01-January-2023 to 31-December-2023, inclusive of both start and end dates, which falls under the 2<sup>nd</sup> Crediting Period of the project. The electricity generated from the project activity in this current monitoring period corresponds to emission reductions of 71,033 tCO<sub>2e</sub> in this monitoring period.

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<sup>1</sup> <https://cdm.unfccc.int/Projects/Validation/DB/69J8TNRR5CNV4D9LWCAG623YGZQO3F/view.html>

## 1.2 Audit History

| Audit type                                   | Period <sup>2</sup>                      | Program | Validation/verification body name                        | Number of years                   |
|----------------------------------------------|------------------------------------------|---------|----------------------------------------------------------|-----------------------------------|
| Validation                                   | <b>06-June-2008 to 05-June-2018</b>      | VCS     | <b>Perry Johnson Registrars CDM Inc.</b>                 | <b>10 Years</b>                   |
| Verification                                 | 06-June-2008 to 30-June-2010             | VCS     | Perry Johnson Registrars Carbon Emissions Services, Inc. | 02 Years 00 Months 25 Days        |
| Verification                                 | 01-July-2010 to 30-September-2012        | VCS     | Bureau Veritas Certification                             | 02 Years 03 Months 00 Days        |
| Verification                                 | 01-October-2012 to 31-December-2013      | VCS     | Bureau Veritas Certification Holding Sas                 | 01 Years 03 Months 00 Days        |
| Verification                                 | 01-January-2014 to 29-February-2016      | VCS     | LGAi Technological Center, S.A. (Applus+ Certification)  | 02 Years 02 Months 00 Days        |
| Verification                                 | 01-March-2016 to 31-October-2017         | VCS     | LGAi Technological Center, S.A. (Applus+ Certification)  | 01 Years 08 Months 00 Days        |
| Verification                                 | 01-November-2017 to 05-June-2018         | VCS     | Earthood Services Pvt. Ltd.                              | 00 Years 07 Months 05 Days        |
| Joint <sup>3</sup> Validation & Verification | <b>06-June-2018 to 30-September-2018</b> | VCS     | <b>Earthood Services Pvt. Ltd.</b>                       | <b>00 Years 03 Months 25 Days</b> |
| Verification                                 | 01-October-2018 to 31-October-2019       | VCS     | LGAi Technological Center, S.A. (Applus+ Certification)  | 01 Years 01 Months 00 Days        |
| Verification                                 | 01-November-2019 to 31-October-2020      | VCS     | LGAi Technological Center, S.A. (Applus+ Certification)  | 01 Years 00 Months 00 Days        |
| Verification                                 | 01-November-2020 to 31-August-2021       | VCS     | LGAi Technological Center, S.A. (Applus+ Certification)  | 00 Years 10 Months 00 Days        |
| Verification                                 | 01-September-2021 to 30-April-2022       | VCS     | VKU Certification Pvt. Ltd.                              | 00 Years 08 Months 00 Days        |

<sup>2</sup> All these dates stated are inclusive of both start and end dates

<sup>3</sup> This is 2<sup>nd</sup> crediting period's first verification, crediting period spans from 06-June-2018 to 05-June-2028, both days including

|              |                                                  |     |                             |                            |
|--------------|--------------------------------------------------|-----|-----------------------------|----------------------------|
| Verification | 01-May-2022 to 31-December-2022                  | VCS | VKU Certification Pvt. Ltd. | 00 Years 08 Months 00 Days |
| Verification | 01-January-2023 to 31-December-2023 <sup>4</sup> | VCS | VKU Certification Pvt. Ltd. | 01 Year 00 Months 00 Days  |
| Total        | 06-June-2008 to 31-December-2023                 | =   | =                           | 16 Years 06 Months 26 days |

### 1.3 Sectoral Scope and Project Type

|                             |                                                           |
|-----------------------------|-----------------------------------------------------------|
| Sectoral scope <sup>5</sup> | 01, Energy Industries (renewable- /non-renewable sources) |
| Project activity type       | I, Renewable energy projects                              |

|                                     |    |
|-------------------------------------|----|
| Sectoral scope                      | NA |
| AFOLU project category <sup>6</sup> | NA |
| Project activity type               | NA |
|                                     |    |

### 1.4 Project Proponent

|                   |                                                                                    |
|-------------------|------------------------------------------------------------------------------------|
| Organization name | M/s. NSL Renewable Power Private Limited                                           |
| Contact person    | Mr. A. Rajnikant                                                                   |
| Title             | Head – Wind Projects & Operations                                                  |
| Address           | NSL ICON, 4th Floor, Road No.12, Banjara Hills, Hyderabad - 500034, Andhra Pradesh |
| Telephone         | +91 - 40 - 3051 4444                                                               |
| Email             | <a href="mailto:rajnikant.a@nslpower.com">rajnikant.a@nslpower.com</a>             |

### 1.5 Other Entities Involved in the Project

|                     |    |
|---------------------|----|
| Organization name   | NA |
| Role in the project | NA |
| Contact person      | NA |
| Title               | NA |

<sup>4</sup> Current verification i.e., 7<sup>th</sup> verification of the second crediting period and overall periodic 13<sup>th</sup> verification

<sup>5</sup> Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes: <https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes>

<sup>6</sup> See Appendix 1 of the VCS Standard

|           |    |
|-----------|----|
| Address   | NA |
| Telephone | NA |
| Email     | NA |

## 1.6 Project Start Date

|                    |                                                                                                                                                                                                                                                                                                            |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Project start date | 06-June-2008                                                                                                                                                                                                                                                                                               |
| Justification      | <p>The project start date is 06-June-2008 which is the date of commissioning of the first WTG (HK 3).</p> <p>AS per VCS Standard version 4.6, Clause 3.8 The Project start date is the date on which the project began reducing or removing GHG emissions i.e., the commissioning date of the project.</p> |

## 1.7 Project Crediting Period

|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Crediting period                                      | <input type="checkbox"/> Seven years, twice renewable<br><input type="checkbox"/> Ten years, fixed<br><input checked="" type="checkbox"/> Other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Start and end date of first or fixed crediting period | <p>This is the second renewal crediting period for the project activity.</p> <p>Type of crediting period: Renewal<br/> Start date of 2nd crediting period: 06-June-2018<br/> End date of 2nd crediting period : 05-June-2028<br/> 2nd crediting period total number of years: 10 years</p> <p>As per latest VCS standard version 4.6 where Appendix 3 states that “Registered VCS projects and projects that request registration with the VCS Program on or before 31-December-2019 remain eligible under the VCS Program for the entirety of their crediting periods” The Project completed validation before 31-December-2019 i.e. on <u>29-August-2018</u> and chose to use the crediting period requirements under VCS version 3.</p> <p>Details of the first crediting period of the project activity was considered from</p> <ul style="list-style-type: none"> <li>Start Date of 1<sup>st</sup> crediting period: 06-June-2008</li> <li>End date of 1<sup>st</sup> crediting period: 05-June-2018.</li> <li>1<sup>st</sup> crediting period total number of years: 10 Years</li> </ul> <p>This is the 7<sup>th</sup> verification of the second crediting period and overall periodic 13<sup>th</sup> verification</p> |

## 1.8 Project Location

The project site is located at Bhimasamudra site, Chikkandavadi and Kallavanagathihalli village, Chitradurga District of Karnataka in India. Chitradurga is approximately around 200 KM from Bangalore, capital of Karnataka state.

The physical location is provided below:



Geographical location map of project activity

| WTG<br>HT SC<br>No | Location<br>No | Village             | District    | State     | Latitude    | Longitude   |
|--------------------|----------------|---------------------|-------------|-----------|-------------|-------------|
| 1                  | HK 1           | Chikkandavadi       | Chitradurga | Karnataka | N14 11 02.7 | E76 12 32.2 |
| 2                  | HK 2           | Chikkandavadi       | Chitradurga | Karnataka | N14 10 49.7 | E76 12 25.7 |
| 3                  | HK 3           | Chikkandavadi       | Chitradurga | Karnataka | N14 10 42.1 | E76 12 26.8 |
| 4                  | HK 4           | Chikkandavadi       | Chitradurga | Karnataka | N14 10 33.7 | E76 12 26.6 |
| 5                  | HK 5           | Chikkandavadi       | Chitradurga | Karnataka | N14 10 23.2 | E76 12 26.0 |
| 6                  | HK 6           | Chikkandavadi       | Chitradurga | Karnataka | N14 10 08.8 | E76 12 25.6 |
| 7                  | HK 7           | Chikkandavadi       | Chitradurga | Karnataka | N14 10 00.7 | E76 12 25.0 |
| 8                  | HK 8           | Chikkandavadi       | Chitradurga | Karnataka | N14 09 53.1 | E76 12 23.3 |
| 9                  | HK 9           | Chikkandavadi       | Chitradurga | Karnataka | N14 09 45.3 | E76 12 22.1 |
| 10                 | HK 10          | Kallavanagathihalli | Chitradurga | Karnataka | N14 13 10.6 | E76 08 43.7 |
| 11                 | HK 11          | Kallavanagathihalli | Chitradurga | Karnataka | N14 12 43.4 | E76 08 39.2 |
| 12                 | HK 12          | Kallavanagathihalli | Chitradurga | Karnataka | N14 12 23.0 | E76 08 58.2 |
| 13                 | HK 13          | Kallavanagathihalli | Chitradurga | Karnataka | N14 12 18.9 | E76 09 02.5 |
| 14                 | HK 14          | Kallavanagathihalli | Chitradurga | Karnataka | N14 12 12.5 | E76 09 07.5 |
| 15                 | HK 15          | Kallavanagathihalli | Chitradurga | Karnataka | N14 12 06.4 | E76 09 11.9 |
| 16                 | HK 16          | Kallavanagathihalli | Chitradurga | Karnataka | N14 11 59.5 | E76 09 16.8 |
| 17                 | HK 17          | Kallavanagathihalli | Chitradurga | Karnataka | N14 11 37.0 | E76 09 38.3 |
| 18                 | HK 18          | Kallavanagathihalli | Chitradurga | Karnataka | N14 11 30.3 | E76 09 43.3 |
| 19                 | HK 19          | Kallavanagathihalli | Chitradurga | Karnataka | N14 11 24.4 | E76 09 48.0 |
| 20                 | HK 20          | Kallavanagathihalli | Chitradurga | Karnataka | N14 11 16.6 | E76 09 50.9 |
| 21                 | HK 21          | Kallavanagathihalli | Chitradurga | Karnataka | N14 11 10.9 | E76 09 56.4 |
| 22                 | HK 22          | Kallavanagathihalli | Chitradurga | Karnataka | N14 11 04.4 | E76 09 59.9 |

|    |       |                     |             |           |             |             |
|----|-------|---------------------|-------------|-----------|-------------|-------------|
| 23 | HK 23 | Kallavanagathihalli | Chitradurga | Karnataka | N14 10 57.8 | E76 10 03.4 |
| 24 | HK 24 | Kallavanagathihalli | Chitradurga | Karnataka | N14 10 41.1 | E76 10 39.9 |
| 25 | HK 25 | Kallavanagathihalli | Chitradurga | Karnataka | N14 10 34.0 | E76 10 44.3 |
| 26 | HK 26 | Kallavanagathihalli | Chitradurga | Karnataka | N14 10 26.9 | E76 10 47.8 |
| 27 | HK 27 | Kallavanagathihalli | Chitradurga | Karnataka | N14 10 19.8 | E76 10 51.3 |
| 28 | HK 29 | Kallavanagathihalli | Chitradurga | Karnataka | N14 10 02.1 | E76 11 14.3 |
| 29 | HK 30 | Kallavanagathihalli | Chitradurga | Karnataka | N14 09 55.0 | E76 11 18.0 |
| 30 | HK 31 | Kallavanagathihalli | Chitradurga | Karnataka | N14 09 48.9 | E76 11 23.0 |
| 31 | HK 32 | Kallavanagathihalli | Chitradurga | Karnataka | N14 09 42.0 | E76 11 26.8 |
| 32 | HK 33 | Kallavanagathihalli | Chitradurga | Karnataka | N14 09 35.0 | E76 11 30.4 |

## 1.9 Title and Reference of Methodology

| Type (methodology, tool or module). | Reference ID, if applicable | Title                                                                                                | Version                     |
|-------------------------------------|-----------------------------|------------------------------------------------------------------------------------------------------|-----------------------------|
| I – Renewable Energy Projects       | ACM0002                     | Consolidated baseline methodology for grid connected electricity generation from renewable sources”. | 19, EB 62.                  |
| Tool                                | ...                         | Tool to calculate the emission factor for an electricity system --                                   | Version 07. <sup>07</sup>   |
| Tool                                | ...                         | Tool for the demonstration and assessment of additionality                                           | Version 07.0. <sup>08</sup> |

## 1.10 Double Counting and Participation under Other GHG Programs

### 1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes ☒ No

### 1.10.2 Registration in Other GHG Programs

Is the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

PP is also developing the project under CDM<sup>9</sup> and received HCA with the same title. PP is using the same title for consistency between their CDM and VCS project. The project is only claiming

<sup>7</sup> [cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf](https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf)

<sup>8</sup> [am-tool-01-v7.0.0.pdf \(unfccc.int\)](https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf)

<sup>9</sup> <https://cdm.unfccc.int/Projects/Validation/DB/69J8TNRR5CNV4D9LWCAG623YGZQO3F/view.html>

carbon credits for this monitoring period in VCS only, the project was webhosted in CDM but not proceeded for any further developments. It's important to highlight that the project's actual installed capacity of 50.4 MW is indeed lower than the originally titled and proposed capacity of 51 MW. PP has not claimed any credits for the same project activity in CDM or any other program yet since the time of its registration till current monitoring period.

## 1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

### 1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the *VCS Program Definitions* for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

### 1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the *VCS Program Definitions* for definition of GHG-related environmental credit system.

☐ Yes ☒ No

### 1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

If yes:

Is the project proponent(s) or authorized representative a buyer or seller of the product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

If yes:

Has the project proponent(s) or authorized representative posted a public statement on their website saying, "Carbon credits may be issued through the Verified Carbon Standard project [project ID] for the greenhouse gas emission reductions or removals associated with [project proponent or authorized representative organization name(s)] [name of product(s) whose emissions footprint is changed by the project activities]."

☐ Yes ☒ No

## 1.12 Sustainable Development Contributions

The project contributes in achieving nationally stated sustainable development priorities like providing direct & indirect employment generation during construction & operation phase. Also, helps in country energy security by generating electricity from renewable source etc. Since the project is continuation of activity as per the registered PD, it is a regulatory surplus activity. The green energy target of the Govt of India does not include green energy generated from wind turbines from private parties.

- **Social well-being:** The project helped in generating employment opportunities during the construction and operation phases. The project activity leads 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 generates power using zero emissions wind-based power generation which helps to reduce GHG emissions and specific pollutants like SO<sub>x</sub>, NO<sub>x</sub>, and SPM associated with the conventional thermal power generation facilities.
- **Technological well-being:** The successful operation of project activity led to promotion of wind-based power generation i.e., Wind Turbine Generators 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.
- **Note:** As per the VCS Standard Version 4.6<sup>10</sup> Page no 79, Appendix 03: Document History and Effective dates, For V4.2, serial number 04 states that “it is required by project proponents to demonstrate contributions to a minimum of three SDGs in all monitoring reports verified after the effective date. Effective immediately for all projects that request registration on or after 20-January-2023. Projects that request registration before 20-January-2023 shall demonstrate contributions to at least three SDGs by 20-January-2025”. This is project's 7<sup>th</sup> periodic verification of second crediting period for the Monitoring Period 01-January-2023 to 31-December-2023 (Inclusive of both start and end dates), Since this project is registered before 20-January-2023, so the Project Proponent (PP) must demonstrate contributions to sustainable development, as defined by and tracked against the United National Sustainable Development Goals (SDGs) at least three SDGs by 20-January-2025
- In continuation, the project has achieved various SDGs during the current monitoring period which fulfills the requirement of minimum three SDG indicators.

<sup>10</sup> <https://verra.org/documents/vcs-standard-v4-6/>

Table 1: Sustainable Development Contributions

| Row number | SDG Target | SDG Indicator                                                      | Net Impact on SDG Indicator                                                                                   | Current Project Contributions                                                                                      | Contributions Over Project Lifetime                                                                                                                                                                           |
|------------|------------|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7          | 7.2        | 7.2.1 Renewable energy share in the total final energy consumption | Implemented Renewable Energy grid connected Project to increase the Renewable energy share in total grid mix. | 33,333.20 MWh delivered to the Indian grid during the current monitoring period.                                   | About (10,725.355 + 29,438.64 <sup>11</sup> + 33,333.20= 73,497.195) MWh renewable electricity has supplied to Indian grid that helps to increase the renewable energy share in the energy mix. <sup>12</sup> |
| 8          | 8.5        | 8.5.1: Employment Generation from the project Activity             | Implemented Renewable Energy power generation project activity has generated direct & Indirect employment     | More than 10 numbers of people got direct/indirect employment through the implementation of this project activity. | Project is eligible to generate this SDG benefits. However, project is not claiming this SDG benefit. Hence, not quantifying the same here.                                                                   |

<sup>11</sup> Contribution to the previous 6<sup>th</sup> monitoring period 01-May-2022 to 31-December-2022 (Inclusive of both the days)  
[https://registry.terra.org/myModule/ProjectDoc/Project\\_ViewFile.asp?FileID=97082&IDKEY=f98klasmf8jflkasf8098afnasfkj98f0a9sfsakjflsakj8dk133876078](https://registry.terra.org/myModule/ProjectDoc/Project_ViewFile.asp?FileID=97082&IDKEY=f98klasmf8jflkasf8098afnasfkj98f0a9sfsakjflsakj8dk133876078)

<sup>12</sup> As per VERRA's guidelines to claim SDGs for contributions Over Project Lifetime "The cumulative impact should be calculated by summing the current project contributions with all impacts included in previously approved VCS monitoring reports or Sustainable Development Contribution Reports, PP has only claimed the SDGs in last 5<sup>th</sup> & 6<sup>th</sup> verification of 2<sup>nd</sup> Crediting period, hence in this Monitoring period, PP is only applying values of last 5<sup>th</sup> & 6<sup>th</sup> verifications along with current 7<sup>th</sup> monitoring period.

|    |      |                                                               |                                                            |                                                                                                          |                                                                                                                                                                     |
|----|------|---------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13 | 13.2 | 13.2.1: Tonnes of greenhouse gas emissions avoided or removed | Implemented activities to decrease Greenhouse Gas emission | 32,589 tCO <sub>2</sub> has been prevented by the project activity during the current Monitoring Period. | Prevented the release of (10,485 + 28,782 <sup>13</sup> + 32,589 = 71,856) tCO <sub>2</sub> into the atmosphere during the current monitoring period. <sup>14</sup> |
|----|------|---------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

<sup>13</sup> Contribution to the previous 6<sup>th</sup> monitoring period 01-May-2022 to 31-December-2022 (Inclusive of both the days)  
[https://registry.terra.org/mymodule/ProjectDoc/Project\\_ViewFile.asp?FileID=97082&IDKEY=f98klasmf8jflkasf8098afnasfkj98f0a9sfsakjflsakjf8dk133876078](https://registry.terra.org/mymodule/ProjectDoc/Project_ViewFile.asp?FileID=97082&IDKEY=f98klasmf8jflkasf8098afnasfkj98f0a9sfsakjflsakjf8dk133876078)

<sup>14</sup> As per VERRA's guidelines to claim SDGs for contributions Over Project Lifetime "The cumulative impact should be calculated by summing the current project contributions with all impacts included in previously approved VCS monitoring reports or Sustainable Development Contribution Reports, PP has only claimed the SDGs in last 5<sup>th</sup> & 6<sup>th</sup> verification of 2<sup>nd</sup> Crediting period hence in this Monitoring period, PP is only applying values of last 5<sup>th</sup> & 6<sup>th</sup> verifications along with current 7<sup>th</sup> monitoring period.

## 1.13 Commercially Sensitive Information

There is no commercially sensitive information applicable for the current monitoring period.

# 2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

## 2.1 Stakeholder Engagement and Consultation

### 2.1.1 Stakeholder Identification

|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Stakeholder Identification</b>                  | At the time of validation, the stakeholders were identified. NSL identified the following local stakeholders to be associated with the project activities, directly or indirectly. The typical groups of the stakeholders identified are <ul style="list-style-type: none"> <li>• Karnataka State Pollution Control Board</li> <li>• Employees of the KPTCL</li> <li>• Local people</li> <li>• Farmers</li> <li>• WEG Contractors</li> </ul> |
| <b>Legal or customary tenure/access rights</b>     | There is not any legal or customary tenure/access rights to territories and resources, including collective and conflicting rights, held by stakeholders, indigenous people (IPs), local communities (LCs), and customary rights holders.                                                                                                                                                                                                    |
| <b>Stakeholder diversity and changes over time</b> | The social, economic, and cultural diversity within stakeholder groups remained stable over time. Interactions between groups were consistent, and there were no significant changes in the composition of each group observed during the monitoring period.                                                                                                                                                                                 |
| <b>Expected changes in well-being</b>              | In the baseline scenario, there are no alterations to the well-being or other characteristics of stakeholders. This includes the preservation of ecosystem services that stakeholders deem important.                                                                                                                                                                                                                                        |
| <b>Location of stakeholders</b>                    | Stakeholders, which include local communities, indigenous peoples, and customary rights holders, are primarily located within the project area and its immediate vicinity. Areas                                                                                                                                                                                                                                                             |

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              | beyond the project boundary that do not experience indirect impacts, such as environmental changes or socio-economic shifts, are not considered due to the nature of the wind project.                                                                                                                                                                                                                                                                                                            |
| <b>Location of resources</b> | Since wind projects usually occupy small physical footprints, stakeholders' territories and resources typically do not directly overlap with the project area. However, stakeholders may have customary access to land or resources located in nearby regions. These territories might encompass agricultural lands, grazing areas, or culturally significant sites. Recognizing and respecting these territories are crucial for ensuring effective stakeholder engagement and project planning. |

## 2.1.2 Stakeholder Consultation and Ongoing Communication

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ongoing consultation</b>                | <p>The project proponent has organized Local Stakeholder Consultation (LSC) meetings at the time of validation in accordance with the approved communication plan. This meeting served as a forum for stakeholders to express their concerns, stay informed about project developments, and offer feedback. During this monitoring period no LSC was organized however grievance record book has been kept at the plant site to record any concerns from the nearby stakeholders.</p> <p>Additionally, stakeholders have the opportunity to submit their comments and grievances through a dedicated grievance register.</p> |
| <b>Date(s) of stakeholder consultation</b> | The stakeholder meeting was conducted on 14-November-2008 at the project site located near Bhimasamudra in Chitradurga district, Karnataka. All the stakeholders were informed about the agenda, venue and date of the meeting through notices issued 15 days prior to the meeting. Further, a project concept note, which gives a clear idea on the project activity including the measures taken under the project and the benefits achieved by the project, was also issued along with the notices as information to the concern stakeholder.                                                                             |

|                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                    | <p>The consultation meeting was conducted by NSL at the wind farm site office. The stakeholder consultation meeting was attended by participants representing various groups of the stakeholder (as mentioned above), details on the participants has been recorded. This consultation was conducted at the time of validation, NO LSC was performed for current monitoring period.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Communication of monitored results | <p>For ongoing communication, PP maintains a grievance register and a complaint box for stakeholder feedback and utilizes stakeholder engagement platforms to ensure transparency and accountability.</p> <p>The results of stakeholder consultations were documented using a variety of methods, including meeting minutes, reports, surveys, and feedback forms.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Consultation records               | <p>The results of stakeholder consultations conducted at the time of validation were documented using a variety of methods, including meeting minutes, reports, surveys, and feedback forms.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Stakeholder input                  | <p>Concerns and responses as recorded during the meeting at the sites of the wind farm area:</p> <p>All the stakeholders were happy in knowing that the project activity in their locality is contributing to a global cause and they commended the NSL management for their initiatives in the areas of climate change and sustainable development. In particular, the stakeholders lauded the project promoters for the environment friendly power generation using wind.</p> <p>The stakeholder meeting was conducted at NSL's plant site at the time of validation and was attended by the residents of the nearby villages, the employees of NSL and representative of relevant ESCOM. Summary of the comments received from the stakeholders:</p> <p>Local Population: The villagers expressed their pleasure with the setting up of the power project as it had provided the rural population with permanent employment opportunities. Indirect employment generated as result of the project activity was highlighted by the villagers. The</p> |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>increase in the land prices subsequent to the setting up of the project was a welcome boon for the villagers.</p> <p>Representative of KPTCL: Stated the setting up of the power project has helped in reducing the transmission &amp; distribution losses.</p> <p>Employees: The local population hired for the project activity are pleased with the employment opportunity available to them which was absent in the region prior to the commissioning of the plant.</p> <p>During current monitoring period any input received during the consultation will be thoroughly reviewed and analyzed to ensure that stakeholders' perspectives are duly considered. However, no inputs were received during the current monitoring period.</p> |
|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 2.1.3 Free, Prior, and Informed Consent

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Consent         | <p>At the time of LSC conducted at validation of the project activity. Consent from concerned parties, including Indigenous Peoples (IPs), local communities (LCs), and customary rights holders, was obtained through a transparent and inclusive process. This involved engaging in meaningful dialogue, providing relevant information in accessible formats, and addressing any concerns or questions raised. Agreements were reached through consensus-building, ensuring that all parties had the opportunity to express their views and negotiate terms. Transparency was maintained by documenting the process and agreements reached, and ensuring that all stakeholders understood the implications of their consent. There are no ongoing or unresolved conflicts, demonstrating that the project does not exacerbate or influence the outcomes of unresolved conflicts.</p> |
| Outcome of FPIC | <p>The Free, Prior, and Informed Consent (FPIC) process culminated in a transparent agreement between the project proponent and all concerned parties, including Indigenous Peoples (IPs), local communities (LCs), and customary rights holders. Before finalizing this agreement, the project provided comprehensive information about its scope, potential impacts, and mitigation measures in accessible</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

formats and local languages during Local Stakeholder Consultation (LSC) at the time of validation. PP hereby declares that the project has not encroached on any land, and does not relocate people, or forced physical or economic displacement. All activities have been conducted in accordance with the regulatory norms and terms outlined in the transparent agreement, ensuring the protection of rights and interests of all stakeholders involved

## 2.1.4 Grievance Redress Procedure

| Grievances received                                         | Resolution and outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No Grievance was recorded during current monitoring period, | To maintain ongoing communication with stakeholders, a grievance register mechanism has been established, known as the "Grievance Register," located at the project site office and accessible to all stakeholders. Community members can visit the project site to share their complaints, feedback, or comments in this register. If the comments are deemed genuine, immediate action will be taken. A copy of the grievance register is retained at the project site. However, no feedback or grievances have been reported during this monitoring period, resulting in no applicable or relevant outcomes from this ongoing communication with local stakeholders. |

## 2.1.5 Public Comments

| Summary of comments received                           | Actions taken                                                                                                                                                  |
|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Provide a summary of each comment received in each row | No comments were found on-site. The grievance register has been provided for feedback collection, ensuring effective communication and resolution of concerns. |

## 2.2 Risks to Stakeholders and the Environment

|                                    | Risk identified    | Mitigation or preventative measure taken                             |
|------------------------------------|--------------------|----------------------------------------------------------------------|
| Risks to stakeholder participation | No risk identified | Stakeholder participation in wind projects poses minimal risk due to |

|                                                                |                    |                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                |                    | the clean nature of wind energy production, which does not emit pollutants. This fosters positive community relationships and reduces potential health and environmental concerns, ensuring smoother project implementation and garnering support from the community.                                                                                                 |
| Working conditions                                             | No risk identified | Stakeholder participation in wind projects poses negligible risks when the systems are operational. Wind technology typically operates reliably with minimal maintenance requirements, ensuring consistent energy generation and stakeholder satisfaction.                                                                                                            |
| Safety of women and girls                                      | No risk identified | Ensuring the safety of women and girls in the project involves comprehensive risk assessment and mitigation strategies. Measures such as well-lit areas, security patrols, gender-sensitive policies, and training on harassment prevention help mitigate risks, fostering a safe environment for all stakeholders and workers.                                       |
| Safety of minority and marginalized groups, including children | No risk identified | While wind projects generally entail minimal or no risks to minority and marginalized groups, comprehensive safety measures have been implemented. This includes ensuring safe access to project sites, implementing child protection policies, and addressing any potential social or economic impacts on marginalized communities, thereby safeguarding their well- |

|                                                                                                   |                    |                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                   |                    | being throughout project development and operation.                                                                                                                                                                                                                                                                                                                                           |
| Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials) | No risk identified | The projects' lack of pollutants substantially reduces risks to stakeholders, including potential health hazards or environmental contamination. This inherent cleanliness fosters a safer environment for communities, minimizing concerns related to air and water quality, noise pollution, waste generation, and exposure to hazardous materials, ensuring overall safety and well-being. |

## 2.3 Respect for Human Rights and Equity

### 2.3.1 Labor and Work

|                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discrimination and sexual harassment             | No instances of discrimination or sexual harassment have been reported or identified within the project. This is ensured through the implementation of comprehensive policies and training aimed at preventing and promptly addressing such issues.                                                                                                                                                                                                                                         |
| Management experience                            | No new entities are involved in in project design or implementation. The initially engaged management is experienced enough to handle the implementation of the project activity.                                                                                                                                                                                                                                                                                                           |
| Gender equity in labor and work                  | Equal opportunities for gender equity and fair pay are guaranteed through transparent hiring practices, non-discriminatory policies, and regular pay scale reviews to rectify any disparities. Ongoing training programs also foster gender inclusivity and address unconscious biases in the workforce. The Project Proponent ensures equal wage pay to its employees keeping them in line with the minimum wage criteria as per state labor laws.                                         |
| Human trafficking, forced labor, and child labor | The project has implemented stringent ethical sourcing policies, which include the comprehensive vetting of suppliers and contractors to ensure compliance with labor laws and human rights standards. Regular audits and inspections are carried out to verify that the project's supply chain and workforce are free from human trafficking, forced labor, or child labor. The company policy restricts hiring of any such employee involved in such practices. The project remains under |

strict surveillance of the project proponent & the state DISCOM, any malpractice at the project implemented site will be immediately reported and strict actions will be taken. Since the date of project start date, PP has not encountered any such activity at the project site.

### 2.3.2 Human Rights

The project maintains a commitment to upholding the rights of IPs, LCs, and customary rights holders, aligning with international human rights standards, including the UN Declaration on the Rights of Indigenous Peoples and ILO Convention Indigenous Peoples and Cultural Heritage

### 2.3.3 Indigenous Peoples and Cultural Heritage

The project's comprehensive assessments confirm no harm to indigenous people or cultural heritage. Additionally, project activities explicitly avoid conservation or preservation areas, ensuring no interference with cultural heritage sites. Although there are no indigenous people (IPs), local communities (LCs), and customary rights holders identified, the project proponent (PP) remains steadfast in its commitment to recognizing, respecting, and promoting the protection of human rights. The PP actively engages with stakeholders through ongoing communication and interaction, seeking their feedback and input throughout the project lifecycle.

Additionally, the project incorporates mechanisms for grievance redressal, providing a platform for stakeholders to voice their concerns and lodge grievances. Moreover, there is a comment/feedback box in place to facilitate open communication and ensure that stakeholders' voices are heard and considered.

### 2.3.4 Property Rights

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disputes over rights to territories and resources | N/A                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Respect for property rights                       | Ongoing measures to protect property rights include upholding agreements made before land acquisition, respecting customary rights, and ensuring transparent and equitable compensation processes. Regular consultations and grievance mechanisms are maintained to address any concerns promptly. No such incident was reported at the time of validation, in last verifications or during current monitoring period. |

### 2.3.5 Benefit Sharing

|                                              |    |
|----------------------------------------------|----|
| Summary of the benefit sharing plan          | NA |
| Benefit sharing during the monitoring period | NA |

## 2.4 Ecosystem Health

| Risk identified                        |                    | Mitigation or preventative measure taken during the monitoring period                                                                                                                                                                                               |
|----------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Impacts on biodiversity and ecosystems | No risk Identified | Throughout the monitoring period, no adverse effects on biodiversity or ecosystems were observed in the project. Wind projects are generally recognized as environmentally benign, with minimal impact on surrounding ecosystems.                                   |
| Soil degradation and soil erosion      | No risk Identified | Throughout the monitoring period, no instances of soil degradation or erosion were identified in the project area. Wind projects typically employ land management practices that minimize soil disturbance, ensuring the preservation of soil health and stability. |
| Water consumption and stress           | No risk Identified | Throughout the monitoring period, no concerns regarding water consumption or stress were identified within the project. Wind installations generally have minimal water requirements, reducing strain on local water resources and ecosystems.                      |
| Usage of fertilizers                   |                    |                                                                                                                                                                                                                                                                     |

### 2.4.1 Rare, Threatened, and Endangered species

|                    |                                                                                                                                                                           |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Species or habitat | The Project is located at Village: Chikkandavadi and Kallavanagathihalli; District: Chitradurga, State Karnataka, Country: India and there is no endangered species found |
|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

[REDACTED] during the monitoring period, neither reported at the time of project registration.

## 2.4.2 Introduction of species

| Species introduced | Classification | Justification for use | Adverse effects and mitigation |
|--------------------|----------------|-----------------------|--------------------------------|
| N/A                | N/A            | N/A                   | N/A                            |

| Existing invasive species | Mitigation measures to prevent spread or continued existence of invasive species |
|---------------------------|----------------------------------------------------------------------------------|
| N/A                       | N/A                                                                              |

## 2.4.3 Ecosystem conversion

Ecosystem conversion in wind projects is justified by the transition to renewable energy sources, mitigating climate change, reducing reliance on fossil fuels, and fostering sustainable development for future generations.

# 3 IMPLEMENTATION STATUS

## 3.1 Implementation Status of the Project Activity

The project activity is a Wind Power Generation project of total capacity 50.4 MW, installed and currently operational at Bhimasamudra site in Chikkandavadi and Kallavanagathihalli village, Chitradurga District of Karnataka in India. The project activity has been connected to Unified Indian Grid (previously it was as Southern Grid) through sub-stations owned and maintained by the state electricity utility. The project activity has been in operation since its date of commissioning that was 06-June-2008. There are no changes related to the project. Project is implemented and operational as per the VCS Project description submitted. NSL had released purchase order to Regen Power Private Limited (RPPL) for 34 nos. of Wind Turbine Generators (WTGs) (1.5 MW each) for a capacity of 51 MW. RPPL had supplied 9 WTGs on time out of the 34 WTGs. From the balance 25 nos. of WTGs, RPPL supplied only 19 WTGs and informed NSL on 12-September-2009 that the balance 6 WTGs could be supplied only later (after June 2010). So, considering the delay in supply of WTGs from RPPL, NSL decided to replace Regen make of 6 nos. WTGs with 4 nos. of WTGs of Suzlon make each having capacity of 2.1 MW. Based on this, NSL released new purchase order to Suzlon Energy Limited (SEL) for 4 no WTGs. Hence the current capacity amounts to 50.4 MW which is lower than the capacity mentioned in the title. It is to note that however the project actual installed capacity (50.4 MW) is lower than the titled 51 MW (proposed) and for emission reductions calculation only 50.4 capacity has been considered.

The Project WTGs are currently operational and had successfully completed 10 years of first crediting period under VCS (end date of first crediting period was 05-June-2018). The first machine under the project activity was commissioned on 06-June-2008 and last machine under the project activity was commissioned on 30-September-2011. The expected operational lifetime of the project is minimum of 20 years.

### Wind Power Project Technology Details

The technology employed, converts Kinetic energy to mechanical energy and then converts it into electrical energy. The technology is an environment friendly technology since there are no GHG emissions associated with the electricity generation. There is no transfer of technology involved in the project activity. Technical specification of the project are as follows:

#### ReGen Turbines technical Specifications:

| Parameters                           | Units                                                                   |
|--------------------------------------|-------------------------------------------------------------------------|
| Rated power                          | 1500 kW                                                                 |
| Cut-in wind speed<br>(10 min. mean)  | 3 m/s                                                                   |
| Rated Wind Speed<br>(10 min. mean)   | approx. 13 m/s                                                          |
| Cut-out wind speed<br>(10 min. mean) | 22 m/s                                                                  |
| Survival wind speed                  | 52.5 m/s                                                                |
| Generator                            | Variable Speed, Multi-pole Synchronous with Permanent Magnet Excitation |
| <b>ROTOR</b>                         |                                                                         |
| Diameter                             | 77                                                                      |
| Swept area                           | 4637 sq.m                                                               |
| Speed range (variable)               | 9 to 17.3 rpm                                                           |
| Number of blades:                    | 3                                                                       |
| Power control                        | Pitch                                                                   |
| <b>TOWER AND FOUNDATION</b>          |                                                                         |
| Hub height                           | 85 m                                                                    |
| Design                               | Tubular, Four sections                                                  |
| Foundation type                      | Floating foundation                                                     |
| <b>CONTROL AND SAFETY SYSTEMS</b>    |                                                                         |
| Control of output                    | Pitch Regulation                                                        |
| Speed control                        | Variable, Micro-controller based                                        |
| Low Voltage Ride Through (LVRT)      | 3 seconds                                                               |
| Primary brake system                 | Aerodynamic Brake, Single Pitch Control/triple redundant                |

|                                   |                                                                      |
|-----------------------------------|----------------------------------------------------------------------|
| Pitch System                      | Electromechanical, Maintenance Free<br>Toothed Belt Drive (Patented) |
| Remote Monitoring                 | VPN, Visualization via web-browser                                   |
| <b>TYPE CLASSES</b>               |                                                                      |
| Wind turbine type class           | GL III A                                                             |
| ReGen Turbine DP yard transformer | 1800KVA/690V                                                         |

### Suzlon 2.1 MW technical Data

| Power                 |                        |
|-----------------------|------------------------|
| Rated power:          | 2,100.0 kW             |
| Cut-in wind speed:    | 4.0 m/s                |
| Rated wind speed:     | 14.0 m/s               |
| Cut-out wind speed:   | 25.0 m/s               |
| Survival wind speed:  | 59.5 m/s               |
| Rotor                 |                        |
| Diameter:             | 88.0 m                 |
| Swept area:           | 6,082.0 m <sup>2</sup> |
| Number of blades:     | 3                      |
| Rotor speed, max:     | 15.5 U/min             |
| Tipspeed:             | 71 m/s                 |
| Material:             | GFK / Epoxy            |
| Power density 1:      | 345.3 W/m <sup>2</sup> |
| Power density 2:      | 2.9 m <sup>2</sup> /kW |
| Gear box              |                        |
| Type:                 | spur/planetary         |
| Stages:               | 3                      |
| Ratio:                | 0.110416667            |
| Manufacturer:         | Winergy                |
| Generator             |                        |
| Type:                 | Asynchronus            |
| Speed, max:           | 1,830.0 U/min          |
| Voltage:              | 690.0 V                |
| Grid connection:      | Flexi slip             |
| Grid frequency:       | 50.0 Hz                |
| Tower                 |                        |
| Hub height:           | 80.0 m                 |
| Type:                 | Steel tube             |
| Shape:                | conical                |
| Corrosion protection: | painted                |

|                                     |              |
|-------------------------------------|--------------|
| Suzlon Turbine DP yard Transformer: | 2500KVA/620V |
|-------------------------------------|--------------|

### Emission Reductions from anthropogenic sources:

Since, wind power is Green House Gas (GHG) emissions free, the power generated will prevent the anthropogenic GHG emissions generated by the fossil fuel based thermal power stations comprising coal, diesel, furnace oil and gas. The estimation of GHG reductions by this project is limited to carbon dioxide (CO<sub>2</sub>) only.

The project activity has been in operation since its date of commissioning. No events have happened that may impact the GHG emission reductions or removals and monitoring during this monitoring period. There are no changes related to the project proponent or project observed. Project is implemented and operational as per the VCS Project description submitted. During the current monitoring period, all the WTGs were operational. However, breakdown along with lull hours contributes a total of **66592.10 (Breakdown Hours: 59,634.43 // Lull Hours: 6957.67 Hours)** hours in this monitoring period due to non-availability of wind and some scheduled shutdown for the maintenance. This downtime is approx. **21.27%** of total available hours of operation of the WTGs, during the current monitoring period. The PP has provided in appendix 2 of MR and evidences for the same to VVB. The project shall result in replacing anthropogenic emissions of greenhouse gases (GHGs) estimated to be approximately **127,993 tCO<sub>2</sub>e** per year, thereon displacing **135,084 MWh/year** amount of electricity from the grid over the 10 years crediting period. During current monitoring period the project has generated **74,969.772 MWh** of electricity thereby reduced **71,033 tCO<sub>2</sub>e** of GHG emissions from the environment which is approximately - **44.50%** lower than the estimated **127,993 tCO<sub>2</sub>e** emission reductions. There has been downtime of equipment's, overhaul times or exchange of equipment's in the project activity during the current monitoring period. The details have been clearly described in the Appendix 2 of the monitoring report. This variation is majorly due to low plant load factor (PLF<sup>15</sup>). Some other reasons for this are the variations in the wind flow pattern, grid availability, shutdown due to various reasons, and other parameters which are not in the control of the project proponent.

## 3.2 Deviations

### 3.2.1 Methodology Deviations

The project did not apply any methodology deviation under the current monitoring period. Further, no methodology deviations were applied during the previous verification and validation.

### 3.2.2 Project Description Deviations

No project description deviation applied to the project activity during the current monitoring period. Also, during the previous monitoring periods no project description related deviation was occurred. The same can be referred from the previous approved monitoring reports.

<sup>15</sup> The estimated PLF as per registered PD is 30.60% whereas actual PLF achieved during this MP is 16.98%. Calculation can be referred under the ER sheet.

### 3.3 Grouped Projects

Not applicable as this is not a grouped project.

### 3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

## 4 DATA AND PARAMETERS

### 4.1 Data and Parameters Available at Validation

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | EF <sub>OM,y</sub>                                                                                                                                                                                                                                                                                                                                         |
| Data unit                                                                                    | tCO <sub>2</sub> e/MWh                                                                                                                                                                                                                                                                                                                                     |
| Description                                                                                  | Operating Margin Emission Factor of Indian Grid                                                                                                                                                                                                                                                                                                            |
| Source of data                                                                               | “CO <sub>2</sub> Baseline Database for Indian Power Sector” version 13 published by the Central Electricity Authority, Ministry of Power, Government of India.<br>The “CO <sub>2</sub> Baseline Database for Indian Power Sector” is available at <a href="http://www.cea.nic.in/tpeandce.html">http://www.cea.nic.in/tpeandce.html</a>                    |
| Value applied                                                                                | 0.9726                                                                                                                                                                                                                                                                                                                                                     |
| Justification of choice of data or description of measurement methods and procedures applied | Calculated by using 3 years vintage (2014-2015, 2015-2016 and 2016-17) data obtained from “CO <sub>2</sub> Baseline Database for Indian Power Sector” version 13.0, published by the Central Electricity Authority, Ministry of Power, Government of India, which is based on the tool “Tool to calculate the emission factors for an electricity system”. |
| Purpose of Data                                                                              | Baseline emission calculations                                                                                                                                                                                                                                                                                                                             |
| Comments                                                                                     | Value is fixed ex-ante for entire crediting period.                                                                                                                                                                                                                                                                                                        |

|                  |                                                                                                                                                                |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter | EF <sub>BM,y</sub>                                                                                                                                             |
| Data unit        | tCO <sub>2</sub> e/MWh                                                                                                                                         |
| Description      | Build Margin Emission Factor of Southern Regional Electricity Grid                                                                                             |
| Source of data   | “CO <sub>2</sub> Baseline Database for Indian Power Sector” version 13 published by the Central Electricity Authority, Ministry of Power, Government of India. |

|                                                                                              |                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                              | The “CO <sub>2</sub> Baseline Database for Indian Power Sector” is available at <a href="http://www.cea.nic.in/tpeandce.html">http://www.cea.nic.in/tpeandce.html</a>                                                                                                                       |
| Value applied                                                                                | 0.8723                                                                                                                                                                                                                                                                                      |
| Justification of choice of data or description of measurement methods and procedures applied | 2016-17 data obtained from “CO <sub>2</sub> Baseline Database for Indian Power Sector” version 13.0, published by the Central Electricity Authority, Ministry of Power, Government of India, which is based on the tool “Tool to calculate the emission factors for an electricity system”. |
| Purpose of Data                                                                              | Baseline emission calculations                                                                                                                                                                                                                                                              |
| Comments                                                                                     | Value is fixed ex-ante for entire crediting period.                                                                                                                                                                                                                                         |

|                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                          |        |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|--------|
| Data / Parameter                                                                             | EF <sub>CO<sub>2</sub>,grid,y</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                          |        |
| Data unit                                                                                    | tCO <sub>2</sub> e/MWh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                          |        |
| Description                                                                                  | Combined Margin Emission Factor of Southern Regional Electricity Grid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                          |        |
| Source of data                                                                               | <p>Combined Margin Emission Factor (EF<sub>CM,y</sub>) is calculated as the weighted average of Operating Margin Emission Factor (EF<sub>OM,y</sub>) and Build Margin Emission Factor (EF<sub>BM,y</sub>).</p> <p>The “CO<sub>2</sub> Baseline Database for Indian Power Sector” Version 13 published by the Central Electricity Authority, Ministry of Power, Government of India.</p> <p>The “CO<sub>2</sub> Baseline Database for Indian Power Sector” is available at <a href="http://www.cea.nic.in/tpeandce.html">http://www.cea.nic.in/tpeandce.html</a></p> |                                                                          |        |
| Value applied                                                                                | <p>In case of wind power projects default weights of 0.75 for EF<sub>OM</sub> and 0.25 for EF<sub>BM</sub> are applicable as per ACM0002.</p> <table border="1"> <tr> <td>Combined Margin Emission Factor (EF<sub>y</sub> or EF<sub>CM,y</sub>)</td><td>0.9475</td></tr> </table> <p>Refer ER calculation sheet for detailed calculation sheet.</p>                                                                                                                                                                                                                 | Combined Margin Emission Factor (EF <sub>y</sub> or EF <sub>CM,y</sub> ) | 0.9475 |
| Combined Margin Emission Factor (EF <sub>y</sub> or EF <sub>CM,y</sub> )                     | 0.9475                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                          |        |
| Justification of choice of data or description of measurement methods and procedures applied | Combined Margin Emission Factor has been calculated by the Central Electricity Authority in accordance with CDM methodologies: ACM0002, and Tool to Calculate the emission Factor for an Electricity System.                                                                                                                                                                                                                                                                                                                                                        |                                                                          |        |
| Purpose of Data                                                                              | Baseline emission calculations                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                          |        |
| Comments                                                                                     | Value is fixed ex-ante for entire crediting period                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                          |        |

## 4.2 Data and Parameters Monitored

For the project activity, the following parameters are being monitored on continuous basis:

|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                | EG <sub>y</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Data unit                                                       | kWh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Description                                                     | Electricity supplied by the plant to the grid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Source of data                                                  | Tariff invoices submitted to KPTCL for the electricity supplied to the grid                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Description of measurement methods and procedures to be applied | <p>The metering points NSLC III, NSLC IV, NSLC V are connected to bulk metering point NSLC I and NSLC II till 30-September-2011. From 30-September-2011 onwards, the metering points NSLC III, NSLC IV are connected to bulk metering point NSLC I and metering point NSLC V, NSLC VI are connected to bulk metering point NSLC II.</p> <p>The WTGs of capacity load 13.5 MW (9X1.5 MW) are connected to metering point NSLC III, and WTGs of capacity load 12 MW (8X1.5 MW) are connected to metering point NSLC IV and WTGs of capacity load 12.6 MW (7X1.5 MW, 1X2.1 MW) are connected to the metering point NSLC V and WTGs of capacity load 12.3 MW (4X1.5 MW, 3X2.1 MW) are connected to metering point at NSLC VI located at group controller station, Hirekandavadi. Energy is fed to grid from NSLC III, NSLC IV, NSLC V, NSLC VI through bulk metering points NSLC I, NSLC II located at 66 kV substation, KN Halli.</p> <p>Actual power generated by WTGs of project activity is measured using energy meters (Main &amp; Check) located at group controller station, Hirekandavadi. The main meter and check meter are installed at group controller station, Hirekandavadi. The energy meters are 0.2s accuracy class and regularly calibrated. The details of calibration along with respective energy meter are provided in Appendix-I of this monitoring report.</p> <p>Net electricity exported to grid by the wind farm is measured using KPTCL meters installed at HT end of the 33/66 KV substation at KN Hali. The main meter and check meter are installed at the substation.</p> <p>Both of these are joint meter readings and are taken on monthly basis in the presence of KPTCL/BESCOM and representative of the project proponent.</p> <p>KPTCL &amp; BESCOM is issued a certificate for the share of electricity generated every month. Monthly share of electricity certificate is prorated by KPTCL/BESCOM based on actual generation of WTGs and the net total electricity supplied by the Wind Farm. Reading recorded in this certificate for the WTGs in the project activity is used for actual estimations.</p> |

| Frequency of monitoring/recording | Measuring frequency – Continuous<br>recording Frequency - Monthly                                                                                                                                                                                                                                                                                                                        |              |                |                        |      |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|------------------------|------|
| Value monitored                   | 74,969.772                                                                                                                                                                                                                                                                                                                                                                               |              |                |                        |      |
| Monitoring equipment              | <table border="1"> <thead> <tr> <th>Energy Meter</th><th>Accuracy Class</th></tr> </thead> <tbody> <tr> <td>Trivector energy meter</td><td>0.2s</td></tr> </tbody> </table> <p>The billing meters are located at HT end of the 33/66 KV substation at KN Halli &amp; details of calibration along with respective energy meter are provided in Appendix-I of this monitoring report.</p> | Energy Meter | Accuracy Class | Trivector energy meter | 0.2s |
| Energy Meter                      | Accuracy Class                                                                                                                                                                                                                                                                                                                                                                           |              |                |                        |      |
| Trivector energy meter            | 0.2s                                                                                                                                                                                                                                                                                                                                                                                     |              |                |                        |      |
| QA/QC procedures to be applied    | The main and check energy meters are of 0.2s accuracy class. Calibration of energy meters at group controller end and substation end are carried out by BSECOM/KPTCL annually. The invoices raised to BSECOM/ KPTCL by NSL can be used for cross checking the electricity readings.                                                                                                      |              |                |                        |      |
| Purpose of the data               | Calculation of baseline emissions                                                                                                                                                                                                                                                                                                                                                        |              |                |                        |      |
| Calculation method                | Not applicable                                                                                                                                                                                                                                                                                                                                                                           |              |                |                        |      |
| Comments                          | The data will be archived for the crediting period plus two years in electronic format.                                                                                                                                                                                                                                                                                                  |              |                |                        |      |

|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                | TEG <sub>y</sub>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Data unit                                                       | kWh                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Description                                                     | Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Source of data                                                  | Form B certificate issued by KPTCL/BSECOM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Description of measurement methods and procedures to be applied | <p>The metering points NSLC III, NSLC IV, NSLC V are connected to bulk metering point NSLC I and NSLC II till 30<sup>th</sup> Sep 2011. From 30<sup>th</sup> Sep 2011 onwards, the metering points NSLC III, NSLC IV are connected to bulk metering point NSLC I and metering point NSLC V, NSLC VI are connected to bulk metering point NSLC II.</p> <p>The WTGs of capacity load 13.5 MW (9X1.5 MW) are connected to metering point NSLC III, and WTGs of capacity load 12 MW (8X1.5 MW) are connected to metering point NSLC IV and WTGs of capacity load 12.6 MW (7X1.5 MW, 1X2.1 MW) are connected to the metering point NSLC V and WTGs of capacity load 12.3 MW (4X1.5 MW, 3X2.1 MW) are connected to metering point at NSLC VI located at group controller station, Hirekandavadi. Energy is fed to grid from NSLC III, NSLC IV, NSLC V, NSLC VI through bulk metering points NSLC I, NSLC II located at 66 KV substation, KN Halli.</p> |

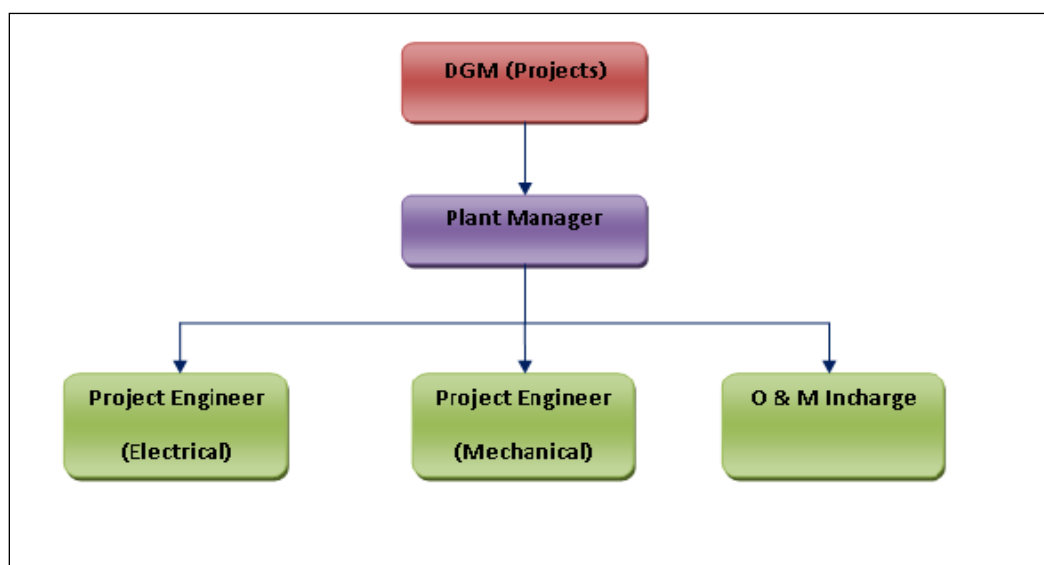
|                                   | <p>Actual power generated by WTGs of project activity is measured using energy meters (Main &amp; Check) located at group controller station, Hirekandavadi. The main meter and check meter are installed at group controller station, Hirekandavadi.</p> <p>Net electricity exported to grid by the wind farm is measured using KPTCL meters installed at HT end of the 33/66 KV substation at KN Hali. The main meter and check meter are installed at the substation.</p> <p>Both of these are joint meter readings and are taken on monthly basis in the presence of KPTCL/BESCOM and representative of the project proponent.</p> <p>KPTCL &amp; BESCOM is issued a certificate for the share of electricity generated every month. Monthly share of electricity certificate is prorated by KPTCL/BESCOM based on actual generation of WTGs and the net total electricity supplied by the Wind Farm. Reading recorded in this certificate for the WTGs in the project activity is used for actual estimations.</p> |              |                |                 |      |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|-----------------|------|
| Frequency of monitoring/recording | <p>Measuring frequency – Continuous</p> <p>Recording frequency – Monthly</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |                |                 |      |
| Value monitored                   | 80,371,620                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                |                 |      |
| Monitoring equipment              | <table border="1"> <thead> <tr> <th>Energy Meter</th><th>Accuracy Class</th></tr> </thead> <tbody> <tr> <td>Trivector meter</td><td>0.2s</td></tr> </tbody> </table> <p>The details of calibration along with respective energy meter are provided in Appendix-I of this monitoring report.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Energy Meter | Accuracy Class | Trivector meter | 0.2s |
| Energy Meter                      | Accuracy Class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |                |                 |      |
| Trivector meter                   | 0.2s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |              |                |                 |      |
| QA/QC procedures to be applied    | <p>The main and check energy meters are of 0.2s accuracy class. Calibration of energy meters at group controller end and substation end are carried out by BESCOM/KPTCL annually. The invoices raised to BESCOM/ KPTCL by NSL can be used for cross checking the electricity readings.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |              |                |                 |      |
| Purpose of the data               | Calculation of baseline emissions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |                |                 |      |
| Calculation method                | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |              |                |                 |      |
| Comments                          | The data will be archived for the crediting period plus two years in electronic format                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |              |                |                 |      |

### 4.3 Monitoring Plan

Monitoring Plan has been proposed as prescribed under the registered PD version 03 dated 05-February-2019. Also, as the renewal crediting period applies the latest version of the Methodology (i.e., ACM0002 Version 19), hence monitoring of emission reductions are also

comply with the requirements of the methodology. The operational and management structure implemented by NSL at the project site is as follows:

**Organizational chart for data collection of Bhimasamudra Wind farm:**



**Roles and Responsibilities:**

| Designation                        | Responsibilities                                            |
|------------------------------------|-------------------------------------------------------------|
| DGM (Projects)                     | Certifying official (Authorized for signing invoice)        |
| Plant Manager                      | Verification of correctness of data                         |
| Project Engineer / O & M In-charge | Staff who present during collection of data by BESCOM/KPTCL |

**Metering arrangements:**

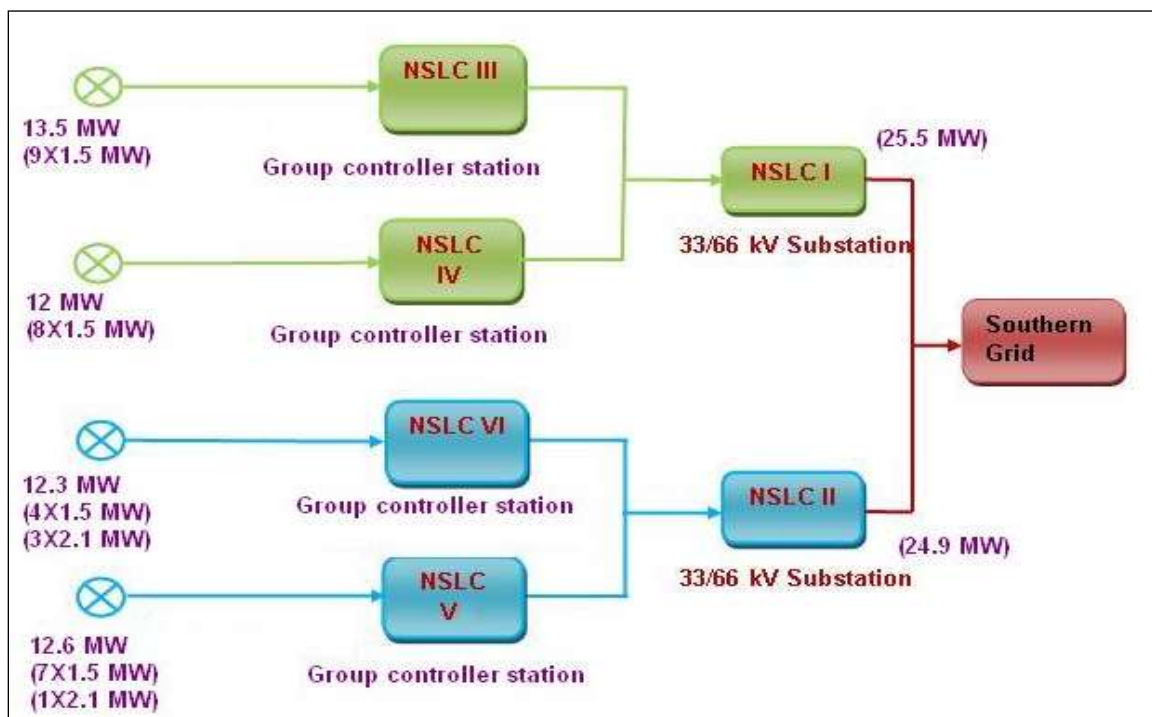
The metering points NSLC III, NSLC IV, NSLC V are connected to bulk metering point NSLC I and NSLC II till 30th Sep 2011. From 30th Sep 2011 onwards, the metering points NSLC III, NSLC IV

are connected to bulk metering point NSLC I and metering point NSLC V, NSLC VI are connected to bulk metering point NSLC II.

The WTGs of capacity load 13.5 MW (9X1.5 MW) are connected to metering point NSLC III, and WTGs of capacity load 12 MW (8X1.5 MW) are connected to metering point NSCL IV and WTGs of capacity load 12.6 MW (7X1.5 MW, 1X2.1 MW) are connected to the metering point NSLC V and WTGs of capacity load 12.3 MW (4X1.5 MW, 3X2.1 MW) are connected to metering point at NSLC VI located at Group Control Station, Hirekandavadi. Energy is fed to grid from NSLC III, NSLC IV, NSLC V, NSLC VI through bulk metering points NSLC I, NSLC II located at 66 KV substation, KN Halli.

| Metering points | WTGs No | Capacity of WTGs (MW) | Commissioning date |
|-----------------|---------|-----------------------|--------------------|
| NSLC III        | HK 1    | 1.5                   | 29-September-2008  |
|                 | HK 2    | 1.5                   | 01-July-2008       |
|                 | HK 3    | 1.5                   | 06-June-2008       |
|                 | HK 4    | 1.5                   | 09-September-2008  |
|                 | HK 5    | 1.5                   | 09-September-2008  |
|                 | HK 6    | 1.5                   | 29-September-2008  |
|                 | HK 7    | 1.5                   | 08-December-2009   |
|                 | HK 8    | 1.5                   | 08-December-2009   |
|                 | HK 9    | 1.5                   | 08-December-2009   |
| NSLC IV         | HK 10   | 1.5                   | 15-December-2009   |
|                 | HK 11   | 1.5                   | 15-December-2009   |
|                 | HK 12   | 1.5                   | 21-January-2010    |
|                 | HK 13   | 1.5                   | 15-December-2009   |
|                 | HK 14   | 1.5                   | 21-January-2010    |
|                 | HK 15   | 1.5                   | 15-December-2009   |
|                 | HK 22   | 1.5                   | 21-January-2010    |
|                 | HK 23   | 1.5                   | 21-January-2010    |
| NSLC V          | HK 25   | 1.5                   | 30-September-2011  |
|                 | HK 27   | 1.5                   | 30-September-2011  |
|                 | HK 29   | 1.5                   | 30-September-2011  |
|                 | HK 30   | 1.5                   | 30-September-2011  |
|                 | HK 31   | 1.5                   | 30-September-2011  |
|                 | HK 32   | 1.5                   | 30-September-2011  |
|                 | HK 33   | 1.5                   | 30-September-2011  |
|                 | HK 26   | 2.1                   | 30-September-2011  |
| NSLC VI         | HK 16   | 1.5                   | 30-September-2011  |
|                 | HK 17   | 1.5                   | 30-September-2011  |
|                 | HK 18   | 1.5                   | 30-September-2011  |
|                 | HK 24   | 1.5                   | 30-September-2011  |
|                 | HK 19   | 2.1                   | 30-September-2011  |
|                 | HK 20   | 2.1                   | 30-September-2011  |
|                 | HK 21   | 2.1                   | 30-September-2011  |

### Current Metering arrangements:



Actual power generated by WTGs of project activity is measured using energy meters located at Group Control Station, Hirekandavadi. The main and check meter of the WTGs are installed at Group Control Station, Hirekandavadi.

Net electricity exported to grid by the wind farm is measured using KPTCL meters installed at HT end of the 33/66 KV substation at KN Halli. The main meter and check meter of the net electricity exported to the grid is installed at the substation. Both of these are joint meter readings and are taken on monthly basis in the presence of KPTCL/BESCOM and representative of the project proponent.

Power is generated & directly sent to substation through 33kV line, Billing meters are installed in between substation and GCS towards generators.

- Voltage Transformation is taking place as:
- Substation to WTG DP Yard: 33kV/1800KVA.
- WTG DP Yard to WTG Input ACB: 1800/690V
- WTG Input ACB to Converter panel: 690V/420V
- Converter Panel to Hub: 420V/420V

KPTCL & BESCOM is issued a certificate for the share of electricity generated every month. Monthly share of electricity certificate is prorated by KPTCL/BESCOM based on actual generation of WTGs and the net total electricity supplied by the Wind Farm. Reading recorded in this certificate for the WTGs in the project activity is used for actual estimations. The calibration details of the energy meter are given in the Appendix-I of the report.

#### **QA/QC procedures & Data collection and archiving:**

The reading can be cross verified with the actual invoices presented to BESCOM/KTPCL by NSL. The daily data at the site is collected in electronic form. Monthly data is also collected and maintained in plant log books. The project proponent shall keep complete and accurate records of all the data as a part of monitoring for at least a period of 2 years after the end of the crediting period or the last issuance of ERs for the project activity, whichever occurs later.

#### **Internal Audit & Emergency preparedness:**

In case Main meter or Check meter is found to be outside the acceptable limits of accuracy or faulty or not functioning properly, it will be repaired, recalibrated or replaced as soon as possible. In the event that the Main meter will not be in service as a result of maintenance, repairs or testing, the Check meter will be used for readings. In case both the main and check meter are found to be outside the acceptable limits of accuracy or faulty or not functioning properly, both the meters will be calibrated immediately, and the error percentage found in the main meter during its calibration will be applied to its metered energy data for the entire period since its last calibration to obtain the corrected value of net electricity exported to the grid. Also, there is installed AMR & SCADA software for billing and forecast of any calamities or weather change. The primary responsibility of the operational team is to closely monitor the day-to-day operations of wind turbines. In the event of unfavorable grid conditions or a grid failure, the turbines will automatically cease operation and restart once conditions stabilize. However, there may be instances where faults require a thorough machine check before restarting. Additionally, the operational team is tasked with documenting downtime, operational hours for each turbine, and the reasons for any downtime. On a monthly basis, the operational team compiles this logbook data and submits it to the head office. To ensure minimal breakdowns of the machines, ReGen/Suzlon, the O&M service provider(s), deploys maintenance staff at the plant. They also guarantee the availability of critical spare parts and essential consumables, which are kept in

stock at the project site to minimize machine repair downtime. The O&M service provider maintains a comprehensive set of tools and equipment at the site, which is accessible to the project site staff.

The site in-charge and the staff collaborate to perform regular maintenance checks on major components such as gearboxes, generators, rotor blades, control panels, transformers, and more. This proactive approach ensures the smooth and efficient operation of the wind turbines.

#### Personnel training:

In order to ensure the proper functioning of the project activity and proper monitoring of emission reductions, the staff are trained. The Shift In-charge and Plant In-charge are trained in equipment operation, data recording, reports writing, operation and maintenance, and emergency procedures in compliance with the monitoring plan.

## 5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

### 5.1 Baseline Emissions

Baseline emissions include only CO<sub>2</sub> emissions from electricity generation in fossil fuel fired power plants connected to the Unified Indian Grid that are displaced by the project activity. The Baseline Emissions would be calculated using the formulas:

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

Where,

$EG_{PJ,y}$  = is considered as  $EG_y$  in the registered VCS PD version 03 dated 05-February-2019.

$EF_{grid,CM,y}$  = is the emission factor (0.9475 tCO<sub>2</sub>e/MWh fixed ex-ante).

$$\begin{aligned} BE_y &= 74,969.772 \text{ MWh} \times 0.9475 \text{ tCO}_2\text{e} \\ &= 71,033 \text{ tCO}_2\text{e} \text{ (round down value).} \end{aligned}$$

### 5.2 Project Emissions

As per section 5.4 of para 34 of methodology i.e., ACM0002 Version 19, his project activity is grid connected wind power generation (renewable energy power generation project activities). Hence there is no project emission from the project activity.

$$PE_y = 0 \text{ tCO}_2\text{e}$$

### 5.3 Leakage Emissions

As per section 5.6 of para 56 of methodology i.e., ACM0002, Version 19, no leakage emissions are considered.

LEy = 0 tCO<sub>2</sub>e.

## 5.4 GHG Emission Reductions and Carbon Dioxide Removals

| Vintage period                                     | Baseline emissions (tCO <sub>2</sub> e) | Project emissions (tCO <sub>2</sub> e) | Leakage emissions (tCO <sub>2</sub> e) | Reduction VCU (tCO <sub>2</sub> e) | Removal VCU (tCO <sub>2</sub> e) | Total VCUs (tCO <sub>2</sub> e) |
|----------------------------------------------------|-----------------------------------------|----------------------------------------|----------------------------------------|------------------------------------|----------------------------------|---------------------------------|
| Year 2023<br>(01-January-2023 to 31-December-2023) | 71,033                                  | 0                                      | 0                                      | 71,033                             | 0                                | 71,033                          |
| Total                                              | 71,033                                  | 0                                      | 0                                      | 71,033                             | 0                                | 71,033                          |

For projects required to assess permanence risk: Since the project activity does not fall under the AFOLU (Agriculture, Forestry, and Other Land Use) or Geologic Carbon Storage (GCS) project categories, it is not required to assess the permanence risk. Therefore, the following tables are not applicable.

i) Provide the requested information using the table below:

|                                                                                                       |                                                                     |
|-------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| State the non-permanence risk rating (%)                                                              | NA                                                                  |
| Has the non-permanence risk report been attached as either an appendix or a separate document?        | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| For ARR and IFM projects with harvesting, state, in tCO <sub>2</sub> e, the Long-term Average (LTA).  | NA                                                                  |
| Has the LTA been updated based on monitored data, if applicable?                                      | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| State, in tCO <sub>2</sub> e, the expected total GHG benefit to date.                                 | NA                                                                  |
| If a loss occurred (including a loss event or reversal), state the amount of tCO <sub>2</sub> e lost: | NA                                                                  |

| Vintage period | Baseline emissions (tCO <sub>2</sub> e) | Project emissions (tCO <sub>2</sub> e) | Leakage emissions (tCO <sub>2</sub> e) | Buffer pool allocation (tCO <sub>2</sub> e) | Reductions VCU (tCO <sub>2</sub> e) | Removals VCU (tCO <sub>2</sub> e) | Total VCU issuance (tCO <sub>2</sub> e) |
|----------------|-----------------------------------------|----------------------------------------|----------------------------------------|---------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------|
|----------------|-----------------------------------------|----------------------------------------|----------------------------------------|---------------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------------|

|                                    |    |    |    |    |    |    |    |
|------------------------------------|----|----|----|----|----|----|----|
| DD-MMM-<br>YYYY to 31-<br>Dec-YYYY | NA | NA | NA | NA | NA | NA | NA |
| <b>Total</b>                       | NA | NA | NA | NA | NA | NA | NA |

| Vintage period                                                 | Ex-ante<br>estimated<br>reductions/<br>removals | Achieved<br>reductions/<br>removals | Percent<br>difference | Explanation for the difference                                                                                                                                                                                                                                                                         |
|----------------------------------------------------------------|-------------------------------------------------|-------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Year 2023<br>(01-January-<br>2023 to 31-<br>December-<br>2023) | 127,993                                         | <b>71,033</b>                       | <b>-44.50%</b>        | The actual ER achieved is lower than the PD estimated ER for the comparable period. This is mainly due to low PLF during the current monitoring period. There was unexpected downtime/breakdown ( <i>reported in Appendix 02</i> ) due to wind unavailability and also due to routine maintenance etc. |
| Total                                                          | 127,993                                         | <b>71,033</b>                       | <b>-44.50%</b>        |                                                                                                                                                                                                                                                                                                        |

# APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

No commercially sensitive information has been provided in the monitoring report.

## APPENDIX A: METER CALIBRATION DETAILS

| Metering Points | Meter Details              |       |      |                | Previous Calibration Date | Previous Calibration Validity Date | Previous Calibration Date | Previous Calibration Validity Date | Latest Calibration Date | Validity Date | Test Result                            |
|-----------------|----------------------------|-------|------|----------------|---------------------------|------------------------------------|---------------------------|------------------------------------|-------------------------|---------------|----------------------------------------|
|                 | Serial no                  | Make  | Type | Accuracy class |                           |                                    |                           |                                    |                         |               |                                        |
| NSLC I          | Old Main meter – 11071857  | L & T | 3P4W | 0.2s           | 11-Feb-22                 | 10-Feb-23                          | 23-Nov-22                 | 22-Nov-23                          | NA                      | NA            | Metes has been Replaced on 07-Nov-2023 |
|                 | Old Check meter – 15195281 |       |      |                |                           |                                    |                           |                                    |                         |               |                                        |
|                 | New Main meter – 23011553  | L & T | 3P4W | 0.2s           | NA                        | NA                                 | NA                        | NA                                 | 07-Nov-23               | 06-Nov-24     | Satisfactory                           |
|                 | New Check meter – 23011578 |       |      |                |                           |                                    |                           |                                    |                         |               |                                        |
| NSLC II         | Main meter – 21004960      | L & T | 3P4W | 0.2s           | 11-Feb-22                 | 10-Feb-23                          | 23-Nov-22                 | 22-Nov-23                          | 11-Jul-23               | 10-Jul-24     | Satisfactory                           |
|                 | Check meter – 21005001     |       |      |                |                           |                                    |                           |                                    |                         |               |                                        |
| NSLC III        |                            | L & T | 3P4W | 0.2s           | 11-Feb-22                 | 10-Feb-23                          | NA                        | NA                                 | NA                      | NA            |                                        |

|         |                            |       |      |      |           |           |           |           |           |           |                                        |
|---------|----------------------------|-------|------|------|-----------|-----------|-----------|-----------|-----------|-----------|----------------------------------------|
|         | Old Main meter – 07022896  |       |      |      |           |           |           |           |           |           | Metes has been Replaced on 03-Dec-2023 |
|         | Old Check meter – 07022921 |       |      |      |           |           |           |           |           |           |                                        |
|         | Old Main meter – 19000010  | L & T | 3P4W | 0.2s | NA        | NA        | 03-Dec-22 | 02-Dec-23 | NA        | NA        | Metes has been Replaced on 07-Nov-2023 |
|         | Old Check meter – 19000236 |       |      |      |           |           |           |           |           |           |                                        |
|         | New Main meter – 23007020  | L & T | 3P4W | 0.2s | NA        | NA        | NA        | NA        | 07-Nov-23 | 06-Nov-24 | Satisfactory                           |
|         | New Check meter – 23007040 |       |      |      |           |           |           |           |           |           |                                        |
| NSLC IV | Old Main meter – 07022985  | L & T | 3P4W | 0.2s | 11-Feb-22 | 10-Feb-23 | 23-Nov-22 | 22-Nov-23 | NA        | NA        | Metes has been Replaced on 07-Nov-2023 |
|         | New Check meter – 07022986 |       |      |      |           |           |           |           |           |           |                                        |
|         | Main meter – 07022985      | L & T | 3P4W | 0.2s | NA        | NA        | NA        | NA        | 07-Nov-23 | 06-Nov-24 | Satisfactory                           |

|         |                            |       |      |      |           |           |           |           |           |           |                                        |
|---------|----------------------------|-------|------|------|-----------|-----------|-----------|-----------|-----------|-----------|----------------------------------------|
|         | Check meter – 07022986     |       |      |      |           |           |           |           |           |           |                                        |
| NSLC V  | Old Main meter – 09142342  | L & T | 3P4W | 0.2s | 11-Feb-22 | 10-Feb-23 | 23-Nov-22 | 22-Nov-23 | NA        | NA        | Metes has been Replaced on 07-Nov-2023 |
|         | Old Check meter – 13191365 |       |      |      |           |           |           |           |           |           |                                        |
|         | New Main meter – 23006909  | L & T | 3P4W | 0.2s | NA        | NA        | NA        | NA        | 07-Nov-23 | 06-Nov-24 | Satisfactory                           |
|         | New Check meter – 23006910 |       |      |      |           |           |           |           |           |           |                                        |
| NSLC VI | Old Main meter – 11071865  | L & T | 3P4W | 0.2s | 11-Feb-22 | 10-Feb-23 | 23-Nov-22 | 22-Nov-23 | NA        | NA        | Metes has been Replaced on 07-Nov-2023 |
|         | Old Check meter – 11071863 |       |      |      |           |           |           |           |           |           |                                        |
|         | New Main meter – 23013561  | L & T | 3P4W | 0.2s | NA        | NA        | NA        | NA        | 07-Nov-23 | 06-Nov-24 | Satisfactory                           |
|         | New Check meter – 23013561 |       |      |      |           |           |           |           |           |           |                                        |

## APPENDIX B: BREAKDOWN DETAILS

| MONITORING PERIOD<br>01-January-2023 to 31-December-2023 | TOTAL HOURS FOR THE MONTH | TOTAL HOURS | PRODUCTION HOURS | PERCENTAGE OF PRODUCTION HOURS | BREAKDOWN HOURS | PERCENTAGE OF BREAKDOWN HOURS | LULL HOURS | PERCENTAGE OF LULL HOURS |
|----------------------------------------------------------|---------------------------|-------------|------------------|--------------------------------|-----------------|-------------------------------|------------|--------------------------|
| Jan-23                                                   | 744                       | 23808       | 13329.29         | 55.99%                         | 10220.01        | 42.93%                        | 258.7      | 1.09%                    |
| Feb-23                                                   | 672                       | 21504       | 13554.29         | 63.03%                         | 7678.61         | 35.71%                        | 271.1      | 1.26%                    |
| Mar-23                                                   | 744                       | 23808       | 16269.95         | 68.34%                         | 6569.75         | 27.59%                        | 968.3      | 4.07%                    |
| Apr-23                                                   | 720                       | 23040       | 14725.14         | 63.91%                         | 7047.36         | 30.59%                        | 1268       | 5.50%                    |
| May-23                                                   | 744                       | 23808       | 17722.76         | 74.44%                         | 4931.14         | 20.71%                        | 1154.1     | 4.85%                    |
| Jun-23                                                   | 720                       | 23040       | 19001.87         | 82.47%                         | 3918.73         | 17.01%                        | 119.4      | 0.52%                    |
| Jul-23                                                   | 744                       | 23808       | 20767.37         | 87.23%                         | 3038.64         | 12.76%                        | 2          | 0.01%                    |
| Aug-23                                                   | 744                       | 23808       | 18179.06         | 76.36%                         | 5616.05         | 23.59%                        | 12.81      | 0.05%                    |
| Sep-23                                                   | 720                       | 23040       | 20041.46         | 86.99%                         | 2934.07         | 12.73%                        | 64.36      | 0.28%                    |
| Oct-23                                                   | 744                       | 23808       | 18927.62         | 79.50%                         | 2902.98         | 12.19%                        | 1977.38    | 8.31%                    |
| Nov-23                                                   | 720                       | 23040       | 20303.16         | 88.12%                         | 2338.82         | 10.15%                        | 397.72     | 1.73%                    |
| Dec-23                                                   | 744                       | 23808       | 20905.75         | 87.81%                         | 2438.28         | 10.24%                        | 463.8      | 1.95%                    |
| TOTAL                                                    | 8760                      | 280320      | 213727.73        | 76.24%                         | 59634.43        | 21.27%                        | 6957.67    | 2.48%                    |