

**MONITORING REPORT FORM (F-CDM-MR)**  
**Version 02.0****MONITORING REPORT**

|  |   |
|--|---|
| <b>Title of the project activity</b>   | Enercon Wind Farm (Hindustan) Ltd in Karnataka                                    |
| <b>Reference number of the project activity</b>  | 1259  |
| <b>Version number of the monitoring report</b>   | 01  |
| <b>Completion date of the monitoring report</b>  | 13/07/2012  |
| <b>Registration date of the project activity</b>   | 27/10/2008  |
| <b>Monitoring period number and duration of this monitoring period</b>   | 03 (01/09/2011 – 30/06/2012; including first and last days of monitoring period.) |
| <b>Project participant(s)</b>  | 1) M/s Enercon (India) Limited<br>2) Rabobank International                       |
| <b>Host Party(ies)</b>   | India   |
| <b>Sectoral scope(s) and applied methodology(ies)</b>  | Sectoral Scope: 1<br>ACM0002, version 06  |
| <b>Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD</b> | 124,048   |
| <b>Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period</b>                            | 77,278  |

**SECTION A. Description of project activity****A.1. Purpose and general description of project activity**

&gt;&gt;

The project activity is installation of 68.8 MW wind power project (“Project”) by Enercon Wind Farm (Hindustan) Ltd. in Karnataka state of India to provide reliable, renewable power to the Karnataka state electricity grid which is part of the Southern regional electricity grid. The Project will lead to reduced greenhouse gas emissions because it displaces electricity from grid connected fossil fuel based electricity generation plants.

The project activity consists of 86 WEGs of Enercon make E-48 and each machine capacity is of 800 kW (E-48) totalling to the capacity of 68.8 MW. The WEGs generates 3-phase power at 400V, which is stepped up to 33 kV. The Project can operate in the frequency range of 47.5–51.5 Hz and in the voltage range of 400 V  $\pm$  12.5%.

The first machine under the project activity was commissioned on 29 September 2006 and last machine under the project activity was commissioned on 28 December 2006. The expected operational lifetime of the project is for 20 years.

The total emission reductions achieved under current monitoring period (01/09/2011 to 30/06/2012) is 77,278 tCO<sub>2</sub>.

**A.2. Location of project activity**

&gt;&gt;

Project activity is located in Karnataka state of India. The turbines are uniquely identified as EWHPL-01 to EWHPL-86. The details of the physical location are as follows:

| S.No. | District    | Taluka              | Village           | No. of WEG's |
|-------|-------------|---------------------|-------------------|--------------|
| 1     | Tumkur      | Chikkanayakanahalli | Dasudi            | 20           |
|       |             | Chikkanayakanahalli | Nelenuru          | 5            |
|       |             | Chikkanayakanahalli | Ganadu            | 6            |
|       |             | Gubbi               | Annenhalli        | 6            |
|       |             | Gubbi               | Siddapura         | 9            |
| 2     | Chitradurga | Hosadurga           | Chikkabyaledakere | 16           |
|       |             | Hosadurga           | Kanubehalli       | 11           |
|       |             | Hosadurga           | Arasinagundi      | 8            |
|       |             | Hosadurga           | Elladakere        | 5            |
|       |             |                     | <b>Total</b>      | <b>86</b>    |

Individual WEG location numbers and coordinates are detailed out in below table:-

| S.No. | WEG Unique Identification Number | Location No. | Latitude (N) |         |         | Longitude (E) |         |         |
|-------|----------------------------------|--------------|--------------|---------|---------|---------------|---------|---------|
|       |                                  |              | Degree       | Minutes | Seconds | Degree        | Minutes | Seconds |
| 1     | EWHPL 01                         | 1            | 13           | 43      | 20.9    | 76            | 31      | 3.9     |
| 2     | EWHPL 02                         | 2            | 13           | 43      | 25.4    | 76            | 31      | 1.5     |
| 3     | EWHPL 03                         | 3            | 13           | 43      | 30.0    | 76            | 30      | 59.0    |
| 4     | EWHPL 04                         | 4            | 13           | 43      | 34.6    | 76            | 30      | 57.2    |
| 5     | EWHPL 05                         | 5            | 13           | 43      | 39.3    | 76            | 30      | 55.6    |
| 6     | EWHPL 06                         | 6            | 13           | 43      | 43.8    | 76            | 30      | 53.1    |
| 7     | EWHPL 07                         | 7            | 13           | 43      | 50.0    | 76            | 30      | 50.5    |



|    |          |    |    |    |      |    |    |      |
|----|----------|----|----|----|------|----|----|------|
| 8  | EWHPL 08 | 8  | 13 | 43 | 54.5 | 76 | 30 | 48.0 |
| 9  | EWHPL 09 | 9  | 13 | 44 | 3.9  | 76 | 30 | 44.9 |
| 10 | EWHPL 10 | 10 | 13 | 45 | 33.0 | 76 | 31 | 5.9  |
| 11 | EWHPL 11 | 11 | 13 | 45 | 28.2 | 76 | 31 | 6.4  |
| 12 | EWHPL 12 | 12 | 13 | 45 | 23.4 | 76 | 31 | 7.0  |
| 13 | EWHPL 13 | 13 | 13 | 45 | 18.9 | 76 | 31 | 7.7  |
| 14 | EWHPL 14 | 14 | 13 | 45 | 14.3 | 76 | 31 | 8.3  |
| 15 | EWHPL 15 | 15 | 13 | 45 | 10.2 | 76 | 31 | 9.5  |
| 16 | EWHPL 16 | 16 | 13 | 44 | 54.0 | 76 | 31 | 12.3 |
| 17 | EWHPL 17 | 17 | 13 | 44 | 49.2 | 76 | 31 | 13.1 |
| 18 | EWHPL 18 | 18 | 13 | 44 | 44.5 | 76 | 31 | 14.7 |
| 19 | EWHPL 19 | 19 | 13 | 44 | 39.8 | 76 | 31 | 16.7 |
| 20 | EWHPL 20 | 20 | 13 | 44 | 35.4 | 76 | 31 | 19.9 |
| 21 | EWHPL 21 | 21 | 13 | 44 | 30.5 | 76 | 31 | 19.8 |
| 22 | EWHPL 22 | 22 | 13 | 44 | 25.6 | 76 | 31 | 20.2 |
| 23 | EWHPL 23 | 23 | 13 | 44 | 21.7 | 76 | 31 | 26.4 |
| 24 | EWHPL 24 | 24 | 13 | 44 | 16.9 | 76 | 31 | 27.7 |
| 25 | EWHPL 25 | 25 | 13 | 44 | 12.0 | 76 | 31 | 28.2 |
| 26 | EWHPL 26 | 26 | 13 | 44 | 8.0  | 76 | 31 | 29.8 |
| 27 | EWHPL 27 | 27 | 13 | 43 | 57.6 | 76 | 31 | 53.8 |
| 28 | EWHPL 28 | 28 | 13 | 43 | 54.1 | 76 | 31 | 55.1 |
| 29 | EWHPL 29 | 29 | 13 | 43 | 49.5 | 76 | 31 | 57.1 |
| 30 | EWHPL 30 | 30 | 13 | 43 | 44.8 | 76 | 31 | 58.6 |
| 31 | EWHPL 31 | 31 | 13 | 43 | 40.0 | 76 | 31 | 59.5 |
| 32 | EWHPL 32 | 32 | 13 | 43 | 35.4 | 76 | 32 | 1.9  |
| 33 | EWHPL 33 | 33 | 13 | 43 | 30.6 | 76 | 32 | 4.8  |
| 34 | EWHPL 34 | 34 | 13 | 43 | 0.6  | 76 | 32 | 22.1 |
| 35 | EWHPL 35 | 35 | 13 | 42 | 54.7 | 76 | 32 | 19.9 |
| 36 | EWHPL 36 | 36 | 13 | 42 | 50.3 | 76 | 32 | 23.0 |
| 37 | EWHPL 37 | 37 | 13 | 42 | 45.6 | 76 | 32 | 24.7 |
| 38 | EWHPL 38 | 38 | 13 | 42 | 40.9 | 76 | 32 | 26.3 |
| 39 | EWHPL 39 | 39 | 13 | 42 | 36.3 | 76 | 32 | 28.5 |
| 40 | EWHPL 40 | 40 | 13 | 42 | 31.1 | 76 | 32 | 31.4 |
| 41 | EWHPL 41 | 41 | 13 | 40 | 57.2 | 76 | 35 | 58.1 |
| 42 | EWHPL 42 | 42 | 13 | 40 | 52.4 | 76 | 35 | 59.4 |
| 43 | EWHPL 43 | 43 | 13 | 40 | 47.7 | 76 | 36 | 0.9  |
| 44 | EWHPL 44 | 44 | 13 | 40 | 43.1 | 76 | 36 | 2.6  |
| 45 | EWHPL 45 | 45 | 13 | 40 | 38.4 | 76 | 36 | 4.2  |
| 46 | EWHPL 46 | 46 | 13 | 40 | 33.7 | 76 | 36 | 5.8  |
| 47 | EWHPL 47 | 47 | 13 | 40 | 13.7 | 76 | 36 | 10.7 |
| 48 | EWHPL 48 | 48 | 13 | 40 | 9.1  | 76 | 36 | 12.6 |
| 49 | EWHPL 49 | 49 | 13 | 40 | 4.7  | 76 | 36 | 15.7 |
| 50 | EWHPL 50 | 50 | 13 | 39 | 2.8  | 76 | 36 | 34.8 |
| 51 | EWHPL 51 | 51 | 13 | 38 | 58.7 | 76 | 36 | 36.8 |
| 52 | EWHPL 52 | 52 | 13 | 38 | 54.1 | 76 | 36 | 38.9 |
| 53 | EWHPL 53 | 53 | 13 | 38 | 49.5 | 76 | 36 | 41.3 |
| 54 | EWHPL 54 | 54 | 13 | 38 | 44.9 | 76 | 36 | 43.1 |
| 55 | EWHPL 55 | 55 | 13 | 38 | 40.2 | 76 | 36 | 44.9 |
| 56 | EWHPL 56 | 56 | 13 | 38 | 35.6 | 76 | 36 | 46.9 |
| 57 | EWHPL 57 | 57 | 13 | 38 | 30.9 | 76 | 36 | 48.7 |
| 58 | EWHPL 58 | 58 | 13 | 38 | 26.4 | 76 | 36 | 50.9 |



|    |         |    |    |    |      |    |    |      |
|----|---------|----|----|----|------|----|----|------|
| 59 | EWHP 59 | 59 | 13 | 38 | 22.3 | 76 | 36 | 56.3 |
| 60 | EWHP 60 | 60 | 13 | 38 | 17.8 | 76 | 36 | 58.8 |
| 61 | EWHP 61 | 61 | 13 | 38 | 11.8 | 76 | 37 | 2.5  |
| 62 | EWHP 62 | 62 | 13 | 38 | 7.2  | 76 | 37 | 4.6  |
| 63 | EWHP 63 | 63 | 13 | 38 | 2.6  | 76 | 37 | 6.8  |
| 64 | EWHP 64 | 64 | 13 | 37 | 58.0 | 76 | 37 | 9.2  |
| 65 | EWHP 65 | 65 | 13 | 37 | 53.5 | 76 | 37 | 11.5 |
| 66 | EWHP 66 | 66 | 13 | 37 | 48.9 | 76 | 37 | 13.7 |
| 67 | EWHP 67 | 67 | 13 | 37 | 44.3 | 76 | 37 | 16.0 |
| 68 | EWHP 68 | 68 | 13 | 37 | 39.8 | 76 | 37 | 18.4 |
| 69 | EWHP 69 | 69 | 13 | 37 | 35.1 | 76 | 37 | 20.3 |
| 70 | EWHP 70 | 70 | 13 | 37 | 30.5 | 76 | 37 | 22.3 |
| 71 | EWHP 71 | 71 | 13 | 37 | 25.9 | 76 | 37 | 24.7 |
| 72 | EWHP 72 | 72 | 13 | 32 | 25.1 | 76 | 43 | 45.2 |
| 73 | EWHP 73 | 73 | 13 | 32 | 30.0 | 76 | 43 | 44.4 |
| 74 | EWHP 74 | 74 | 13 | 32 | 34.8 | 76 | 43 | 44.7 |
| 75 | EWHP 75 | 75 | 13 | 32 | 39.7 | 76 | 43 | 44.5 |
| 76 | EWHP 76 | 76 | 13 | 32 | 44.6 | 76 | 43 | 43.9 |
| 77 | EWHP 77 | 77 | 13 | 32 | 49.5 | 76 | 43 | 42.5 |
| 78 | EWHP 78 | 78 | 13 | 32 | 54.4 | 76 | 43 | 42.1 |
| 79 | EWHP 79 | 79 | 13 | 33 | 6.1  | 76 | 43 | 33.2 |
| 80 | EWHP 80 | 80 | 13 | 33 | 11.0 | 76 | 43 | 34.1 |
| 81 | EWHP 81 | 81 | 13 | 33 | 15.9 | 76 | 43 | 34.6 |
| 82 | EWHP 82 | 82 | 13 | 33 | 20.8 | 76 | 43 | 34.5 |
| 83 | EWHP 83 | 83 | 13 | 34 | 19.9 | 76 | 44 | 0.8  |
| 84 | EWHP 84 | 84 | 13 | 34 | 27.5 | 76 | 44 | 2.3  |
| 85 | EWHP 85 | 85 | 13 | 34 | 50.5 | 76 | 44 | 14.8 |
| 86 | EWHP 86 | 86 | 13 | 34 | 54.9 | 76 | 44 | 14.8 |

**A.3. Parties and project participant(s)**

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| Party involved<br>(host) indicates a host Party)        | Private and/or public<br>entity(ies) project participants<br>(as applicable) | Indicate if the Party involved<br>wishes to be considered as<br>project participant (Yes/No) |
|---|--|--|
| India (host)  | M/s Enercon (India) Ltd.<br>(Private entity)                                 | No   |
| United Kingdom of Great<br>Britain and Northern Ireland | Rabobank International (Private<br>entity )                                  | No   |

**A.4. Reference of applied methodology**

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**Title:** Consolidated methodology for grid-connected electricity generation from renewable sources**Reference:** Approved consolidated baseline methodology ACM0002 (Version 06, EB 24)

UNFCCC web reference of methodology:

[http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF\\_AM\\_BW759ID58ST5YEEV6WUCN5744MN763](http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_BW759ID58ST5YEEV6WUCN5744MN763); Refer page no. 1 & 14 for of baseline & monitoring methodology)



Baseline Methodology: Consolidate baseline methodology for grid-connected electricity generation from renewable sources,

Monitoring Methodology: “Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources”

**Tool:** Tool for the demonstration and assessment of additionality, version 3.0 (weblink: <http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v3.pdf> )

#### A.5. Crediting period of project activity

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Type of crediting period : Fixed  
Start date of crediting period : 27/10/2008  
Length of crediting period : 10 years

### SECTION B. Implementation of project activity

#### B.1. Description of implemented registered project activity

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The project activity consists of 86 machines (800 kW) of Enercon make E-48. The first machine under the project activity was commissioned on 29 September 2006 and last machine under the project activity was commissioned on 28 December 2006. Project activity WEGs were commissioned in three phases between 29 September 2006 & 28 December 2006. 56 WEGs under phase-I were commissioned on 29 Sep 2006, 9 WEGs under phase-II were commissioned on 26 Oct 2006 & 21 WEGs under phase-III were commissioned on 28 Dec 2006. The commissioning dates for all the machines include in the project activity are given in the table below.

| Loc. no. | Unique Identification Number | Date of Commissioning |
|----------|------------------------------|-----------------------|
| 1        | EWHPL 01                     | 26-Oct-06             |
| 2        | EWHPL 02                     | 26-Oct-06             |
| 3        | EWHPL 03                     | 26-Oct-06             |
| 4        | EWHPL 04                     | 28-Dec-06             |
| 5        | EWHPL 05                     | 28-Dec-06             |
| 6        | EWHPL 06                     | 28-Dec-06             |
| 7        | EWHPL 07                     | 28-Dec-06             |
| 8        | EWHPL 08                     | 28-Dec-06             |
| 9        | EWHPL 09                     | 28-Dec-06             |
| 10       | EWHPL 10                     | 29-Sep-06             |
| 11       | EWHPL 11                     | 29-Sep-06             |
| 12       | EWHPL 12                     | 29-Sep-06             |
| 13       | EWHPL 13                     | 29-Sep-06             |
| 14       | EWHPL 14                     | 29-Sep-06             |
| 15       | EWHPL 15                     | 29-Sep-06             |
| 16       | EWHPL 16                     | 29-Sep-06             |
| 17       | EWHPL 17                     | 29-Sep-06             |
| 18       | EWHPL 18                     | 29-Sep-06             |
| 19       | EWHPL 19                     | 29-Sep-06             |
| 20       | EWHPL 20                     | 29-Sep-06             |
| 21       | EWHPL 21                     | 29-Sep-06             |
| 22       | EWHPL 22                     | 29-Sep-06             |
| 23       | EWHPL 23                     | 29-Sep-06             |



|    |          |           |
|----|----------|-----------|
| 24 | EWHPL 24 | 29-Sep-06 |
| 25 | EWHPL 25 | 29-Sep-06 |
| 26 | EWHPL 26 | 26-Oct-06 |
| 27 | EWHPL 27 | 29-Sep-06 |
| 28 | EWHPL 28 | 29-Sep-06 |
| 29 | EWHPL 29 | 29-Sep-06 |
| 30 | EWHPL 30 | 29-Sep-06 |
| 31 | EWHPL 31 | 29-Sep-06 |
| 32 | EWHPL 32 | 29-Sep-06 |
| 33 | EWHPL 33 | 29-Sep-06 |
| 34 | EWHPL 34 | 29-Sep-06 |
| 35 | EWHPL 35 | 29-Sep-06 |
| 36 | EWHPL 36 | 29-Sep-06 |
| 37 | EWHPL 37 | 29-Sep-06 |
| 38 | EWHPL 38 | 29-Sep-06 |
| 39 | EWHPL 39 | 29-Sep-06 |
| 40 | EWHPL 40 | 29-Sep-06 |
| 41 | EWHPL 41 | 29-Sep-06 |
| 42 | EWHPL 42 | 29-Sep-06 |
| 43 | EWHPL 43 | 29-Sep-06 |
| 44 | EWHPL 44 | 29-Sep-06 |
| 45 | EWHPL 45 | 29-Sep-06 |
| 46 | EWHPL 46 | 29-Sep-06 |
| 47 | EWHPL 47 | 29-Sep-06 |
| 48 | EWHPL 48 | 29-Sep-06 |
| 49 | EWHPL 49 | 29-Sep-06 |
| 50 | EWHPL 50 | 26-Oct-06 |
| 51 | EWHPL 51 | 26-Oct-06 |
| 52 | EWHPL 52 | 29-Sep-06 |
| 53 | EWHPL 53 | 29-Sep-06 |
| 54 | EWHPL 54 | 29-Sep-06 |
| 55 | EWHPL 55 | 29-Sep-06 |
| 56 | EWHPL 56 | 29-Sep-06 |
| 57 | EWHPL 57 | 29-Sep-06 |
| 58 | EWHPL 58 | 29-Sep-06 |
| 59 | EWHPL 59 | 26-Oct-06 |
| 60 | EWHPL 60 | 26-Oct-06 |
| 61 | EWHPL 61 | 26-Oct-06 |
| 62 | EWHPL 62 | 29-Sep-06 |
| 63 | EWHPL 63 | 29-Sep-06 |
| 64 | EWHPL 64 | 29-Sep-06 |
| 65 | EWHPL 65 | 29-Sep-06 |
| 66 | EWHPL 66 | 29-Sep-06 |
| 67 | EWHPL 67 | 29-Sep-06 |
| 68 | EWHPL 68 | 29-Sep-06 |
| 69 | EWHPL 69 | 29-Sep-06 |
| 70 | EWHPL 70 | 29-Sep-06 |
| 71 | EWHPL 71 | 29-Sep-06 |
| 72 | EWHPL 72 | 28-Dec-06 |
| 73 | EWHPL 73 | 28-Dec-06 |
| 74 | EWHPL 74 | 28-Dec-06 |



|    |          |           |
|----|----------|-----------|
| 75 | EWHPL 75 | 28-Dec-06 |
| 76 | EWHPL 76 | 28-Dec-06 |
| 77 | EWHPL 77 | 28-Dec-06 |
| 78 | EWHPL 78 | 28-Dec-06 |
| 79 | EWHPL 79 | 28-Dec-06 |
| 80 | EWHPL 80 | 28-Dec-06 |
| 81 | EWHPL 81 | 28-Dec-06 |
| 82 | EWHPL 82 | 28-Dec-06 |
| 83 | EWHPL 83 | 28-Dec-06 |
| 84 | EWHPL 84 | 28-Dec-06 |
| 85 | EWHPL 85 | 28-Dec-06 |
| 86 | EWHPL 86 | 28-Dec-06 |

Enercon operation and maintenance activities are ISO certified and all the events are recorded in the log book available at the project site. Referring to the data available it can be inferred that there have not been any major special events for any of the machines that are included in the project activity. As a part of regular maintenance the machines are stopped for mechanical and electrical maintenance for 16 to 18 hours annually and for visual inspection for 6 to 7 hours quarterly. Further the performance report of project WEGs during the monitoring period including the down time, machine availability, grid availability, etc. has been added in Appendix 2. During the monitoring period there were no events or situations occurred, which may impact the applicability of the methodology

The project activity consists 86 WEGs of Enercon make E-48 and each machine capacity is of 800 kW (E-48) totalling to the capacity of 68.8 MW. The WEGs generates 3-phase power at 400V, which is stepped up to 33 kV. The Project can operate in the frequency range of 47.5–51.5 Hz and in the voltage range of 400 V  $\pm$  12.5%. The other salient features of the state-of-art-technology are:-

- Gearless Construction - Rotor & Generator Mounted on same shaft eliminating the Gearbox.
- Variable speed function – has the speed range of 18 to 33 RPM thereby ensuring optimum efficiency at all times.
- Variable Pitch functions ensuring maximum energy capture.
- Near Unity Power Factor at all times.
- Minimum drawal (less than 1% of kWh generated) of Reactive Power from the grid.
- No voltage peaks at any time.
- Operating range of the WEG with voltage fluctuation of -20 to +20%.
- Less Wear & Tear since the system eliminates mechanical brake, which are not needed due to low speed generator which runs at maximum speed of 33 rpm and uses Air Brakes.
- Three Independent Braking System.
- Generator achieving rated output at only 33 rpm.
- Incorporates lightning protection system, which includes blades.
- Starts generation of power at wind speed of 3 m/s

Enercon (India) Ltd has secured and facilitated the technology transfer for wind based renewable energy generation from Enercon GmbH, has established a manufacturing plant at Daman in India, where along with other components the "Synchronous Generators" using "Vacuum Impregnation" technology are manufactured. Diagram of main component of Enercon make E-48 is shown in below picture:-

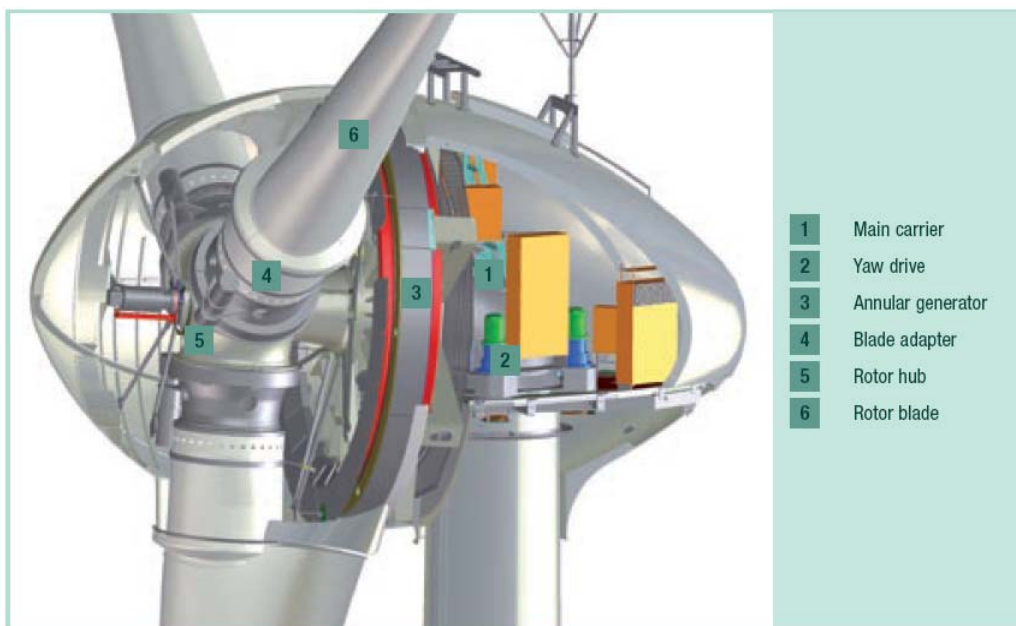


Figure: Enercon make E-48 Diagram.

## **B.2. Post registration changes**

### **B.2.1. Temporary deviations from registered monitoring plan or applied methodology**

>>

Not applicable

### **B.2.2. Corrections**

>>

Not applicable

### **B.2.3. Permanent changes from registered monitoring plan or applied methodology**

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There is a revision<sup>1</sup> in Monitoring Plan which has been approved on date 15th March 2011 by UNFCCC.

### **B.2.4. Changes to project design of registered project activity**

>>

Not applicable

### **B.2.5. Changes to start date of crediting period**

>>

Not applicable

### **B.2.6. Types of changes specific to afforestation or reforestation project activity**

>>

Not applicable

## **SECTION C. Description of monitoring system**

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<sup>1</sup> <http://cdm.unfccc.int/Projects/DB/DNV-CUK1185356859.49/view>



Approved monitoring methodology ACM0002 / Version 06 Sectoral Scope: 1, “Consolidated methodology for grid-connected electricity generation from renewable sources --- Version 6”, by CDM - Meth Panel is proposed to be used to monitor the emission reductions.

This approved monitoring methodology requires monitoring of the following:

- Electricity generation from the project activity; and
- Operating margin emission factor and build margin emission factor of the grid, where ex post determination of grid emission factor has been chosen

Since the baseline methodology is based on ex ante determination of the baseline, the monitoring of operating margin emission factor and build margin emission factor is not required. There are two main and check meters dedicated to project activity at 33 kV metering point for the project activity. The one set of main and check meter is connected to 56.8 MW and other set of the main and check meter is connected to 12 MW of the project activity. In addition to this there is one set of main and check meter (bulk meter) at 220 kV metering point at the Enercon substation is connected to the machines of the project activity and the machines commissioned by the other project developers. Therefore in order to determine the net electricity supplied to the grid by the project at 220 kV at the Enercon substation, the state utility applies the transmission loss to the meter reading recorded at the 33 kV metering point.

The transmission loss calculated by the state utility is endorsed / confirmed jointly by the representatives of Enercon and the state utility. The transmission loss applied to the project activity by the state utility is reflected in the joint meter readings (Form B) recorded at 33kV metering point. Net electricity supplied to the grid is calculated by applying transmission loss to the meter readings taken at 33 kV metering location of the project activity.

The procedure for calculation of transmission loss as given in the PPA is set-out below:-

$$Z = \frac{(X1 + X2+ X3+ X4+....+ Xn) - Y}{(X1 + X2+ X3+ X4+....+ Xn)} \times 100$$

Where,

Z = Percentage transmission loss for export incurred in transmission line between the meters located at 33 kV metering point (including the machines of the project activity and other project developers) and the meters located at 220kV metering point (bulk meter: main and check) at high voltage side of receiving sub-station. **Refer Appendix 1 for schematic of the flow diagram.**

Summation of meter readings at 33 kV metering points for all the project developers connected to receiving substation (including the machines of the project activity and other project developers)

$$= (X1 + X2+ X3+ X4+....+ Xn)$$

$X_i$  = Energy Export Reading ( $X_i$ ) noted at energy meter installed at 33kV metering point where  $i$  vary from 1 to  $n$  which represents the meters connected to project activity and other project developers.  $X_1, X_2, X_3, \dots, X_n$  are the meters that are installed at 33kV metering point (including the machines of the project activity and other project developers) and further connected to the receiving substation at 220 kV by internally connected lines. **Refer Appendix 1 for schematic of the flow diagram**

Y = Energy Export Reading at bulk meter installed at high voltage side of transformer of the receiving sub-station at 220 kV connecting machines of the project activity and other project developers. **Refer Appendix 1 for schematic of the flow diagram.**

Energy Export by the project activity at 33 kV metering point is as follows:

$$EG_{\text{export}} = X1 + X2$$

Where, X1 & X2 is the export reading recording at 33kV metering points for project activity.

$$\text{Transmission Loss in Export (T}_E\text{)} = \text{Transmission Loss (Z)} * \text{Energy Export at 33kV metering point (EG}_{\text{export}}\text{)}$$

#### **Empirical Formula for Energy Export after adjustment of transmission loss (Equation 1)**

$$\text{Net Energy Export after adjustment of transmission loss} = \text{EG}_{\text{export}} - \text{Transmission Loss (T}_E\text{)}$$

The transmission loss in export is generally less than 5%. However in case of Energy Import, the state utility conservatively applies adjustment of 15% to the import values noted at 33 kV metering point.

$$\text{Transmission Loss in Import (T}_I\text{)} = 15\% * \text{Energy Import at 33kV metering point (EG}_{\text{import}}\text{)}$$

#### **Empirical Formula for Energy Import after adjustment of transmission loss (Equation 2)**

$$\begin{aligned} \text{Net Energy Import after adjustment of transmission loss} &= \text{EG}_{\text{import}} + 15\% * \text{EG}_{\text{import}} \\ &= 115\% * \text{EG}_{\text{import}} \end{aligned}$$

Therefore Energy Supplied to Grid after adjustment of transmission loss is difference of equation 1 and 2 as given in the joint meter readings (Form B) signed jointly by Enercon and the state utility.

$$EG_y = EG_{\text{export}} - 115\% * EG_{\text{import}} - \text{Transmission Loss (T}_E\text{)}$$

The Joint meter reading noted at 33 kV metering location contains the following data:-

1. Electricity Export (EG<sub>export</sub>)
2. Electricity Import (EG<sub>import</sub>)
3. Transmission Loss (TE) between 33 kV metering point and 220 kV metering point at Enercon substation
4. Net Electricity supplied to the Grid [EG<sub>export</sub>-115%\*EG<sub>import</sub>-T<sub>E</sub>]

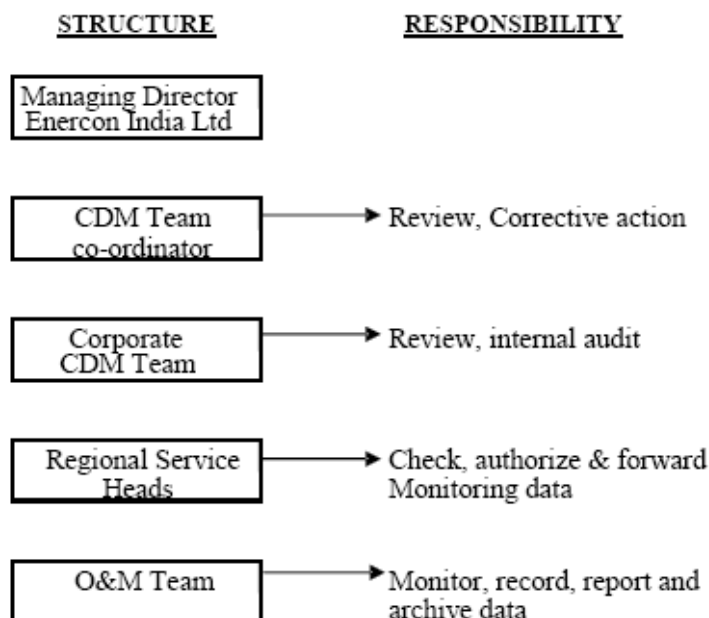
Joint meter reading (Form B) is signed by the representatives of Enercon and the state utility. The meter readings (both export and import), transmission loss and net electricity supplied to the grid are recorded in the joint meter readings (Form B) (33 kV metering point). Hence all these values will be reproduced from the joint meter readings (Form B) for calculation of emission reductions.

In addition to the joint meter readings (Form B) at 33kV metering location for the project activity, the following documents will also be provided to the DoE for verification:

1. Joint Meter Readings (Form B) at 220kV metering point (bulk meters: main and check) at Enercon substation
2. Transmission loss calculation endorsed / confirmed jointly by the representatives of Enercon and the state utility.

The net electricity supplied to the grid can be cross checked from the invoices raised on the state utility for supply of net electricity supplied to the grid. Refer Annex – 2 for an illustration of the provisions for measurement methods.

The Project is operated and managed by Enercon (India) Ltd. The operational and management structure implemented by Enercon is as follows:



#### Calibrations Details of Meters:

The metering equipments were inspected & calibrated by State Utility. Meter details for the all the main and check meters are as follows:-

| Parameter             | Meter description | Meter Serial No. | Make | Accuracy class | Meter Type  |
|-----------------------|-------------------|------------------|------|----------------|---|
| KBCWP-01<br>(88.0 MW) | Main Meter        | 6605121          | L&T  | 0.2            | All the meters are two-way Tri-vector meters capable of recording import and export of electricity. |
|                       | Check Meter       | 6605122          | L&T  | 0.2            |   |
| KBCWP-02<br>(56.8 MW) | Main Meter        | 5389967          | L&T  | 0.2            |   |
|                       | Check Meter       | 5389970          | L&T  | 0.2            |   |
| KBCWP-03<br>(12 MW)   | Main Meter        | 5463844          | L&T  | 0.2            |   |
|                       | Check Meter       | 5463845          | L&T  | 0.2            |   |



Calibration details of meter during monitoring period are as follows:-

| Parameter             | Meter description | Meter Serial No. | Calibration Frequency | Last dates of calibration before monitoring period | Calibration date during Monitoring Period | Due Date of calibration |
|-----------------------|-------------------|------------------|-----------------------|--|---|-------------------------|
| KBCWP-01<br>(88.0 MW) | Main Meter        | 6605121          | Annual                | 10 June 11   | 01 June 12                                | 31 May 2013             |
|                       | Check Meter       | 6605122          |                       |  |   |                         |
| KBCWP-02<br>(56.8 MW) | Main Meter        | 5389967          |                       | 13-Apr-11  | 10-Apr-12                                 | 09 Apr 2012             |
|                       | Check Meter       | 5389970          |                       |  |   |                         |
| KBCWP-03<br>(12 MW)   | Main Meter        | 5463844          |                       | 13-Apr-11  | 10-Apr-12                                 | 09 Apr 2012             |
|                       | Check Meter       | 5463845          |                       |  |   |                         |

The main and check meters are tested and in case of error, are calibrated by state utility.

The line diagram showing all relevant monitoring points for the project activity has been given in Appendix 1.

## SECTION D. Data and parameters

### D.1. Data and parameters fixed ex ante or at renewal of crediting period

>>

|                           |  |
|---------------------------|--|
| <b>Data/Parameter</b>     | <b><math>EF_{CM,y}</math></b>  |
| <b>Unit</b>               | tCO <sub>2</sub> e/MWh   |
| <b>Description</b>        | Combined Margin Emission Factor of Southern Regional Electricity Grid.   |
| <b>Source of data</b>     | “CO <sub>2</sub> Baseline Database for Indian Power Sector”, version 1.1, published by the Central Electricity Authority, Ministry of Power, Government of India.<br><br>The “CO <sub>2</sub> Baseline Database for Indian Power Sector” is available at <a href="http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm">http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm</a> |
| <b>Value(s) applied</b>   | = 0.93204  |
| <b>Purpose of data</b>    | Calculation of Baseline Emissions  |
| <b>Additional comment</b> | None   |



|                    |  |           |            |           |            |           |            |  |  |
|--------------------|--|-----------|------------|-----------|------------|-----------|------------|--|--|
| Data/Parameter     | EF <sub>OM,y</sub>   |           |            |           |            |           |            |  |  |
| Unit               | tCO2e/MWh  |           |            |           |            |           |            |  |  |
| Description        | Operating Margin Emission Factor of Southern Regional Electricity Grid   |           |            |           |            |           |            |  |  |
| Source of data     | “CO2 Baseline Database for Indian Power Sector”, version 1.1, published by the Central Electricity Authority, Ministry of Power, Government of India.<br><br>The “CO2 Baseline Database for Indian Power Sector” is available at <a href="http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm">http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm</a> |           |            |           |            |           |            |  |  |
| Value(s) applied   | <table><tr><td>2002 – 03</td><td>0.997<br/>0</td></tr><tr><td>2003 – 04</td><td>1.009<br/>4</td></tr><tr><td>2004 – 05</td><td>1.003<br/>8</td></tr></table>   | 2002 – 03 | 0.997<br>0 | 2003 – 04 | 1.009<br>4 | 2004 – 05 | 1.003<br>8 |  |  |
| 2002 – 03          | 0.997<br>0   |           |            |           |            |           |            |  |  |
| 2003 – 04          | 1.009<br>4   |           |            |           |            |           |            |  |  |
| 2004 – 05          | 1.003<br>8   |           |            |           |            |           |            |  |  |
| Purpose of data    | Calculation of Baseline Emissions  |           |            |           |            |           |            |  |  |
| Additional comment | None   |           |            |           |            |           |            |  |  |

|                    |  |       |
|--------------------|--|-------|
| Data/Parameter     | EF <sub>BM,y</sub>   |       |
| Unit               | tCO2e/MWh  |       |
| Description        | Build Margin Emission Factor of Southern Regional Electricity Grid Grid  |       |
| Source of data     | “CO2 Baseline Database for Indian Power Sector”, version 1.1, published by the Central Electricity Authority, Ministry of Power, Government of India.<br><br>The “CO2 Baseline Database for Indian Power Sector” is available at <a href="http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm">http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm</a> |       |
| Value(s) applied   | 2004 – 05  | 0.718 |
| Purpose of data    | Calculation of Baseline Emissions  |       |
| Additional comment | None   |       |

Please refer Annex 1 for combined margin calculation.

**D.2. Data and parameters monitored**

&gt;&gt;

|  |   |
|--|---|
| <b>Data/Parameter</b>                        | <b>EGy</b>  |
| <b>Unit</b>                                  | MWh (Mega-Watt hour)  |
| <b>Description</b>                           | Net electricity supplied to the grid by the Project   |
| <b>Measured/Calculated /Default</b>          | Calculated  |
| <b>Source of data</b>                        | Electricity supplied to the grid as per two joint meter readings (Form B) taken at 33 kV metering point.  |
| <b>Value(s) of monitored parameter</b>       | Annual electricity supplied to the grid by the Project<br>= 82919.707 MWh   |
| <b>Monitoring equipment</b>                  | Please refer section ‘C’ (Description of monitoring system) for the details of meter type, accuracy class, serial number, calibration frequency, date of last calibration and validity under the heading ‘Calibrations Details of Meters’   |
| <b>Measuring/Reading/Recording frequency</b> | Frequency of recording data: Monthly<br><br>Refer section C and Annex – 2 for an illustration of the provisions for measurement methods.  |
| <b>Calculation method (if applicable)</b>    | The procedures for calculation of net electricity supplied to grid will be as per the provisions of the power purchase agreement and details of calculation method has been explained in monitoring plan under section C of monitoring report.  |
| <b>QA/QC procedures</b>                      | QA/QC procedures will be as implemented by state utility pursuant to the provisions of the power purchase agreement except or otherwise explicitly stated in the PDD. The values of net electricity supplied to the grid mentioned in the two joint meter readings (Form B) of the project for 56.8 MW and 12 MW at 33kV metering point can be cross checked with values mentioned in the invoice raised on the state utility. All main & check meters connected at metering points with RR. No. KBCWP 01 (220kV metering point), KBCWP 02 (33kVmetering point) & KBCWP03 (33kV metering point) (please refer project layout Appendix 1) will be tested / calibrated for accuracy annually by either of KPTCL or BESCOM<br>Refer Annex – 2 for an illustration of the provisions for QA/QC procedures. Refer Appendix 1 for location of metering points at 33kV and 220 kV. |
| <b>Purpose of data</b>                       | To calculate emission reduction achieved by project activity  |
| <b>Additional comment</b>                    | The data will be archived on electronic media as well as on paper. The archive will be kept for the period up to two years after the completion of the crediting period   |



|   |   |
|---|---|
| <b>Data/Parameter</b>                         | <b>EGexport</b>   |
| <b>Unit</b>                                   | MWh (Mega-Watt hour)  |
| <b>Description</b>                            | Summation of electricity Export recorded at meters (two main and two check) connecting 86 machines of the project activity and can be sourced from two joint meter readings (Form B) issued by BESCO for 56.8 MW and 12 MW at 33 kV metering point. |
| <b>Measured/Calculated /Default</b>           | Measured  |
| <b>Source of data</b>                         | Electricity export to the grid as per two joint meter readings (Form B) taken at 33 kV metering point.  |
| <b>Value(s) of monitored parameter</b>        | =83983.095 MWh<br>(This value is taken from joint meter readings (Form B) )   |
| <b>Monitoring equipment</b>                   | Please refer section ‘C’ (Description of monitoring system) for the details of meter type, accuracy class, serial number, calibration frequency, date of last calibration and validity under the heading ‘Calibrations Details of Meters’           |
| <b>Measuring/Reading/ Recording frequency</b> | Frequency of recording data: Monthly<br><br>Refer section C and Annex – 2 for an illustration of the provisions for measurement methods.  |
| <b>Calculation method (if applicable)</b>     | -   |
| <b>QA/QC procedures</b>                       | QA/QC procedures will be as implemented by state utility and the PP except or otherwise explicitly stated in the PDD. Refer Annex – 2 for an illustration of the provisions for QA/QC procedures.   |
| <b>Purpose of data</b>                        | To calculate emission reduction achieved by project activity  |
| <b>Additional comment</b>                     | The data will be archived on electronic media as well as on paper. The archive will be kept for the period up to two years after the completion of the crediting period.  |



|   |   |
|---|---|
| <b>Data/Parameter</b>                         | <b>EGimport</b>   |
| <b>Unit</b>                                   | MWh (Mega-Watt hour)  |
| <b>Description</b>                            | Summation of electricity Import recorded at the meters (two main and two check) connecting 86 machines of the project activity and can be sourced from two joint meter readings (Form B) issued by BESCO for 56.8 MW and 12 MW at 33 kV metering point. |
| <b>Measured/Calculated /Default</b>           | Measured  |
| <b>Source of data</b>                         | Electricity import from the grid as per two joint meter reading (Form B) taken at 33kV metering point.  |
| <b>Value(s) of monitored parameter</b>        | =31.500 MWh<br>(This value is taken from joint meter readings (Form B))   |
| <b>Monitoring equipment</b>                   | Please refer section ‘C’ (Description of monitoring system) for the details of meter type, accuracy class, serial number, calibration frequency, date of last calibration and validity under the heading ‘Calibrations Details of Meters’               |
| <b>Measuring/Reading/ Recording frequency</b> | Frequency of recording data: Monthly<br><br>Refer section C and Annex – 2 for an illustration of the provisions for measurement methods.  |
| <b>Calculation method (if applicable)</b>     | -   |
| <b>QA/QC procedures</b>                       | QA/QC procedures will be as implemented by state utility and the PP except or otherwise explicitly stated in the PDD. Refer Annex – 2 for an illustration of the provisions for QA/QC procedures.   |
| <b>Purpose of data</b>                        | To calculate emission reduction achieved by project activity  |
| <b>Additional comment</b>                     | The data will be archived on electronic media as well as on paper. The archive will be kept for the period up to two years after the completion of the crediting period.  |





|  |  |
|--|--|
| <b>Data/Parameter</b>                        | <b>T<sub>E</sub></b>   |
| <b>Unit</b>                                  | MWh (Mega-Watt hour)   |
| <b>Description</b>                           | Transmission loss for export between the metering location at 33 kV point and the metering location at 220 kV at the Enercon substation.   |
| <b>Measured/Calculated/Default</b>           | Calculated   |
| <b>Source of data</b>                        | Transmission Loss for export will be sourced from the joint meter reading (Form B) taken at 33kV metering point for the project activity   |
| <b>Value(s) of monitored parameter</b>       | =1027.161 MWh<br>(This value is taken from joint meter readings (Form B))  |
| <b>Monitoring equipment</b>                  | Please refer section ‘C’ (Description of monitoring system) for the details of meter type, accuracy class, serial number, calibration frequency, date of last calibration and validity under the heading ‘Calibrations Details of Meters’  |
| <b>Measuring/Reading/Recording frequency</b> | Frequency of recording data: Monthly<br><br>Refer section C and Annex – 2 for an illustration of the provisions for measurement methods.   |
| <b>Calculation method (if applicable)</b>    | Transmission loss calculation has been done exclusively by officials of electricity board (EB) and PP has no role in calculation of transmission loss. Transmission loss value has been sourced directly from certified joint meter reading (Form B) recorded at 33kV metering point. Please refer section C of monitoring report for calculation method of transmission loss applied by EB officials as per the provision of PPA. |
| <b>QA/QC procedures</b>                      | QA/QC procedures will be as implemented by state utility and the PP except or otherwise explicitly stated in the PDD. Refer Annex – 2 for an illustration of the provisions for QA/QC procedures.  |
| <b>Purpose of data</b>                       | To calculate emission reduction achieved by project activity   |
| <b>Additional comment</b>                    | The data will be archived on electronic media as well as on paper. The archive will be kept for the period up to two years after the completion of the crediting period.   |

### D.3. Implementation of sampling plan

>>

Not applicable

## SECTION E. Calculation of emission reductions or GHG removals by sinks

### E.1. Calculation of baseline emissions or baseline net GHG removals by sinks

>>

“The baseline is the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kg CO<sub>2</sub>e/kWh) calculated in a transparent and conservative manner as the weighted average emissions (in kg CO<sub>2</sub>e/kWh) as described in registered PDD.

$$BE_y = EG_y * EF_y$$

Where,

BE<sub>y</sub> is baseline emissions in year y, tCO<sub>2</sub>e

**EG<sub>y</sub>** is the net electricity supplied to the grid in year y and is applied directly from joint meter readings (Form B) certified by state utility. This value can also be cross checked from the invoice.

**EF<sub>y</sub>** is the CO<sub>2</sub> emission factor of the grid (0.93204 tCO<sub>2</sub>e/MWh fixed ex-ante).

### 1) Generation details for meter KBCWP-02 (56.8 MW)

| Months                | Export (kWh)            | Import (kWh)            | Transmission loss (kWh) | Net Export to grid as per joint meter readings (Form B) (kWh) |
|-----------------------|-------------------------|-------------------------|-------------------------|---|
|                       | [EG <sub>export</sub> ] | [EG <sub>import</sub> ] | [T <sub>E</sub> ]       | [EG <sub>y</sub> ]  |
| 1-Sep-11 to 30-Sep-11 | 10361250                | 0                       | 115528                  | 10245722  |
| 1-Oct-11 to 31-Oct-11 | 3311250                 | 3750                    | 53112                   | 3253825   |
| 1-Nov-11 to 30-Nov-11 | 6615000                 | 3750                    | 69788                   | 6540899   |
| 1-Dec-11 to 31-Dec-11 | 6183750                 | 0                       | 70309                   | 6113441   |
| 1-Jan-12 to 31-Jan-12 | 3397500                 | 3750                    | 51506                   | 3341681   |
| 1-Feb-12 to 29-Feb-12 | 5332500                 | 0                       | 64790                   | 5267710   |
| 1-Mar-12 to 31-Mar-12 | 5070000                 | 3750                    | 65656                   | 5000031   |
| 1-Apr-12 to 30-Apr-12 | 3712500                 | 7500                    | 51641                   | 3652234   |
| 1-May-12 to 31-May-12 | 10192500                | 0                       | 121291                  | 10071209  |
| 1-Jun-12 to 30-Jun-12 | 15450000                | 0                       | 186018                  | 15263982  |

### 2) Generation details for meter KBCWP-03 (12 MW)

| Months                | Export (kWh)            | Import (kWh)            | Transmission loss (kWh) | Net Export to grid as per joint meter readings (Form B) (kWh) |
|-----------------------|-------------------------|-------------------------|-------------------------|---|
|                       | [EG <sub>export</sub> ] | [EG <sub>import</sub> ] | [T <sub>E</sub> ]       | [EG <sub>y</sub> ]  |
| 1-Sep-11 to 30-Sep-11 | 1935900                 | 0                       | 21585                   | 1914315   |
| 1-Oct-11 to 31-Oct-11 | 701100                  | 2700                    | 11246                   | 686749  |
| 1-Nov-11 to 30-Nov-11 | 1292400                 | 0                       | 13635                   | 1278765   |
| 1-Dec-11 to 31-Dec-11 | 1244700                 | 0                       | 14152                   | 1230548   |
| 1-Jan-12 to 31-Jan-12 | 1179900                 | 1800                    | 17887                   | 1159943   |
| 1-Feb-12 to 29-Feb-12 | 1482300                 | 900                     | 18010                   | 1463255   |
| 1-Mar-12 to 31-Mar-12 | 1316700                 | 900                     | 17051                   | 1298614   |
| 1-Apr-12 to 30-Apr-12 | 830700                  | 1800                    | 11555                   | 817075  |
| 1-May-12 to 31-May-12 | 1798200                 | 900                     | 21399                   | 1775766   |
| 1-Jun-12 to 30-Jun-12 | 2574945                 | 0                       | 31002                   | 2543943   |

**Baseline Emission Reductions calculation for project activity:-**

| Months                | Net electricity supplied to the grid by the Project 68.8 [MWh] * | Baseline Emission Factor (tCO <sub>2</sub> e/MWh) | Baseline Emissions (tCO <sub>2</sub> e) |
|-----------------------|--|---|---|
|                       | [EGy]  | [EFy]   | [BEy]                                   |
| 1-Sep-11 to 30-Sep-11 | 12160.04   | 0.93204   | 11333                                   |
| 1-Oct-11 to 31-Oct-11 | 3940.57  | 0.93204   | 3672                                    |
| 1-Nov-11 to 30-Nov-11 | 7819.66  | 0.93204   | 7288                                    |
| 1-Dec-11 to 31-Dec-11 | 7343.99  | 0.93204   | 6844                                    |
| 1-Jan-12 to 31-Jan-12 | 4501.62  | 0.93204   | 4195                                    |
| 1-Feb-12 to 29-Feb-12 | 6730.97  | 0.93204   | 6273                                    |
| 1-Mar-12 to 31-Mar-12 | 6298.65  | 0.93204   | 5870                                    |
| 1-Apr-12 to 30-Apr-12 | 4469.31  | 0.93204   | 4165                                    |
| 1-May-12 to 31-May-12 | 11846.98   | 0.93204   | 11041                                   |
| 1-Jun-12 to 30-Jun-12 | 17807.93   | 0.93204   | 16597                                   |
|                       | <b>82919.707</b>   | <b>Total</b>                                      | <b>77,278</b>                           |

\* Summation of Net Export to grid as per joint meter readings (Form B) recorded at meters KBCWP 02 & KBCWP 03.

**E.2. Calculation of project emissions or actual net GHG removals by sinks**

&gt;&gt;

Since the project activity is a renewable energy project which generates electricity using wind power and hence does not result in project emissions.

**E.3. Calculation of leakage**

&gt;&gt;

No leakage is considered from the project activity as per approved methodology ACM0002.

**E.4. Summary of calculation of emission reductions or net anthropogenic GHG removals by sinks**

| Time Period           | Baseline emissions or baseline net GHG removals by sinks (tCO <sub>2</sub> e) | Project emissions or actual net GHG removals by sinks (tCO <sub>2</sub> e) | Leakage (tCO <sub>2</sub> e) | Emission reductions or net anthropogenic GHG removals by sinks (tCO <sub>2</sub> e) |
|-----------------------|---|--|------------------------------|---|
| 1-Sep-11 to 30-Sep-11 | 11333   | 0  | 0                            | 11333   |
| 1-Oct-11 to 31-Oct-11 | 3672  | 0  | 0                            | 3672  |
| 1-Nov-11 to 30-Nov-11 | 7288  | 0  | 0                            | 7288  |
| 1-Dec-11 to 31-Dec-11 | 6844  | 0  | 0                            | 6844  |
| 1-Jan-12 to 31-Jan-12 | 4195  | 0  | 0                            | 4195  |
| 1-Feb-12 to 29-Feb-12 | 6273  | 0  | 0                            | 6273  |
| 1-Mar-12 to 31-Mar-12 | 5870  | 0  | 0                            | 5870  |



|                       |               |          |          |               |
|-----------------------|---------------|----------|----------|---------------|
| 1-Apr-12 to 30-Apr-12 | 4165          | 0        | 0        | 4165          |
| 1-May-12 to 31-May-12 | 11041         | 0        | 0        | 11041         |
| 1-Jun-12 to 30-Jun-12 | 16597         | 0        | 0        | 16597         |
| <b>Total</b>          | <b>77,278</b> | <b>0</b> | <b>0</b> | <b>77,278</b> |

#### E.5. Comparison of actual emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

| Item   | Values estimated in ex-ante calculation of registered PDD   | Actual values achieved during this monitoring period |
|--|---|--|
| <b>Emission reductions or GHG removals by sinks (tCO<sub>2</sub>e)</b> | <b>124048</b> (10 months equivalent of annually <b>148,858</b> emission reductions estimated in the registered PDD) | <b>77,278</b>  |

#### E.6. Remarks on difference from estimated value in registered PDD

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There is change of 37.70% (downside) in the expected and annual emission reductions. The difference in the total CERs is due to low wind availability leading to low plant load factor.

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#### History of the document

| Version   | Date                           | Nature of revision   |
|---|--------------------------------|--|
| 02.0  | EB 66<br>13 March 2012         | Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20). |
| 01  | EB 54, Annex 34<br>28 May 2010 | Initial adoption.  |
| <b>Decision Class:</b> Regulatory<br><b>Document Type:</b> Form<br><b>Business Function:</b> Issuance |                                |  |

**Annex 1****BASELINE INFORMATION**

The Operating Margin data for the most recent three years and the Build Margin data for the Southern Region Electricity Grid as published in the CEA database version 1.1<sup>2</sup> are as follows:

**Simple Operating Margin**

|  | <b>tCO<sub>2</sub>e/GWh</b> |
|--|-----------------------------|
| Simple Operating Margin - 2002-03            | 997.02                      |
| Simple Operating Margin - 2003-04            | 1,009.37                    |
| Simple Operating Margin - 2004-05            | 1,003.76                    |
| Average Operating Margin of last three years | 1,003.38                    |

**Build Margin**

|                       | <b>tCO<sub>2</sub>e/GWh</b> |
|-----------------------|-----------------------------|
| Build Margin- 2004-05 | 717.99                      |

**Combined Margin calculations**

|                        | <b>Weights</b> | <b>tCO<sub>2</sub>e/GWh</b> |
|------------------------|----------------|-----------------------------|
| Operating Margin       | 0.75           | 1003.38                     |
| Build Margin           | 0.25           | 717.99                      |
| <b>Combined Margin</b> |                | <b>932.04</b>               |

Detailed information on calculation of Operating Margin Emission Factor and Build Margin Emission Factor is available at [http://www.cea.nic.in/reports/planning/cdm\\_co2/cdm\\_co2.htm](http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm).

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<sup>2</sup> [http://www.cea.nic.in/reports/planning/cdm\\_co2/cdm\\_co2.htm](http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)

## Annex 2

### MONITORING INFORMATION

- **Metering:** Net electricity supplied to the grid is metered jointly by state utility and Enercon through two sets of main and check meters at 33 kV metering point connecting exclusively the machines of project activity after adjusting for transmission loss.

In addition to this there is one set of main and check meter (Bulk meter) at 220 KV metering point at Enercon substation covering machines of the project activity and machines of other project developers. The schematic diagram indicating location of meters at 33 kV and 220 kV metering points for the project activity is attached as Appendix 1.

- **Metering Equipment:** Metering system for the project activity consists of two sets of main and checks meters at 33kV metering point and one set of main and check meters at 220 kV metering point. All the meters are **two-way Trivector meters capable of recording import and export of electricity**. The meters installed are capable of recording and storing half hourly readings of all electrical parameters for a minimum period of 35 days with digital output.
- **Meter Readings:** The electricity supplied to the grid is recorded by taking two joint meter readings (Form B) at 56.8 MW and 33 MW at 33kV metering point in the presence of representatives of state utility and Enercon. The joint meter readings (Form B) at 33kV metering point contains the value of energy exported, energy imported, transmission loss and net electricity supplied to the grid during the recording period. This joint meter readings (Form B) is certified by the Executive Engineer of the state utility and Enercon. These certified readings are then used to prepare the invoices to be raised on Discom. Thus the net electricity supplied to the grid as mentioned in the joint meter readings (Form B) can be crosschecked with the value mentioned in the invoices.
- **Inspection of Energy Meters:** All main and check energy meters and all associated instruments, transformers installed at the Project are of 0.2% accuracy class. Each meter is jointly inspected and sealed on behalf of the Parties and is not to be interfered with by either Party except in the presence of the other Party or its authorized representatives.

**Meter Test Checking:** All main and check meters are tested for accuracy with reference to a portable standard meter. The portable standard meter is owned by state utility. The main and check meters shall be deemed to be working satisfactorily if the errors are within specifications for meters of 0.2 accuracy class. The consumption registered by the main meters alone will hold good for the purpose of metering electricity supplied to the grid as long as the error in the main meters is within the permissible limits. All main & check meters connected at metering points with RR. No. KBCWP 01 (220kV metering point), KBCWP 02 (33kV metering point) & KBCWP03 (33kV metering point) (please refer project layout Appendix 1) will be tested / calibrated for accuracy annually by either of KPTCL or BESCOM based on the availability of EB officials. KPTCL is a transmission utility and BESCOM is distribution licensee in the state of Karnataka.

If during the meter test checking,

- The main meter is found to be within the permissible limit of error and the corresponding check meter is beyond the permissible limits, then the meter reading will be as per the main meter as usual. The check meter shall, however, be calibrated immediately.
- The main meter is found to be beyond permissible limits of error, but the corresponding check meter is found to be within permissible of error, then the meter reading for the month up to the date and time of such test shall be as per the check meter. There will be a revision in the meter reading for the period from the previous calibration test up to the current test based on the readings of the



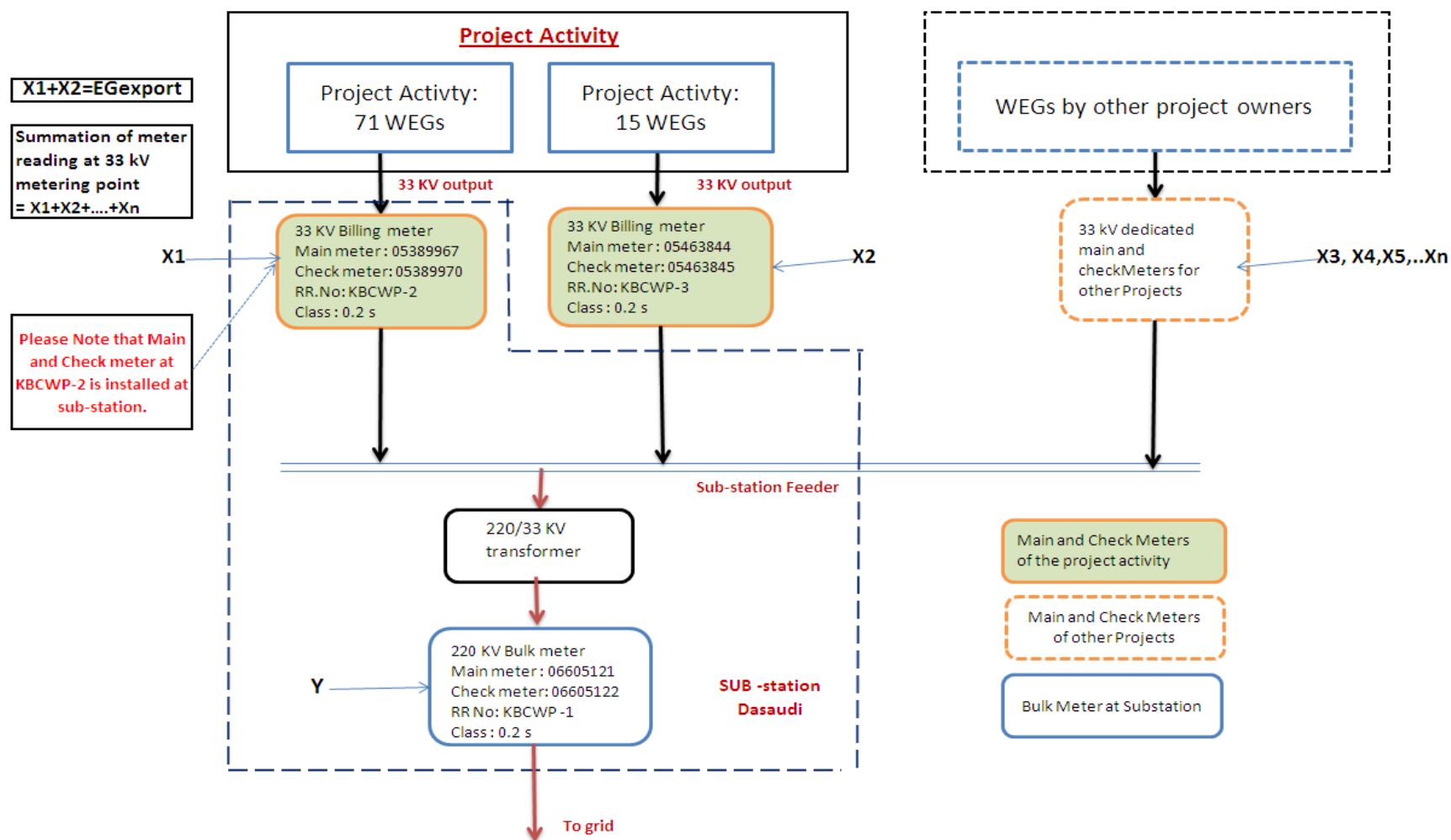
check meter. The main meter shall be calibrated immediately and meter reading for the period thereafter till the next monthly meter reading shall be as per the calibrated main meter.

- Both the main meters and the corresponding check meters are found to be beyond the permissible limits of error, both the main meters shall be immediately calibrated and the correction applied to the reading registered by the main meter to arrive the correct reading of energy supplied for metering electricity supplied to the grid for the period from the last month's meter reading up to the current test. Meter reading for the period thereafter till the next monthly reading shall be as per the calibrated main meter.

The schematic showing the location of meters for the project activity is given in Appendix 1:



Appendix 1: Schematic for location of meters at 33kV metering points and the bulk meter at 220 kV at Enercon sub-station.





Appendix 2: WEG Performance Report<sup>3</sup>

| State                  | KARNATAKA  |                |   | WEG Monthly Performance Report |           |            |           | Date:01/09/2011-30/06/2012 |                     |                      |
|------------------------|------------|----------------|---|--------------------------------|-----------|------------|-----------|----------------------------|---------------------|----------------------|
| WEG No.                | Generation |                | Lack Of Wind<br>(hh:mm:ss)                | Down Time (hh:mm:ss)           |           |            |           | Machine Availabilty (%)    | Capacity Factor (%) | Grid Availabilty (%) |
|                        | KWh        | Hrs (hh:mm:ss) |   | Machine                        |           | Grid       |           |                            |                     |                      |
|                        |            |                |   | Fault                          | Shutdown  | Fault      | Shutdown  |                            |                     |                      |
| Site: CK 6,KARNATAKA   |            |                | ENERCON WINDFARMS (HINDUSTAN) PVT LIMITED |                                |           |            |           |                            | Total WEC : 15      |                      |
| EWHPL-72               | 909259     | 6425:00:00     | 702:07:00                                 | 21:07                          | 27:59:00  | 108:40:00  | 11:27     | 99.33                      | 15.58               | 98.35                |
| EWHPL-73               | 1098174    | 6558:00:00     | 568:40:00                                 | 16:11                          | 31:05:00  | 108:40:00  | 13:34     | 99.35                      | 18.81               | 98.32                |
| EWHPL-74               | 1102616    | 6602:00:00     | 533:37:00                                 | 06:30                          | 33:53:00  | 108:40:00  | 11:27     | 99.45                      | 18.89               | 98.35                |
| EWHPL-75               | 1019555    | 6516:00:00     | 613:46:00                                 | 15:09                          | 31:23:00  | 108:40:00  | 11:27     | 99.36                      | 17.47               | 98.35                |
| EWHPL-76               | 1019301    | 6536:00:00     | 594:43:00                                 | 10:23                          | 34:59:00  | 108:40:00  | 11:27     | 99.38                      | 17.46               | 98.35                |
| EWHPL-77               | 881832     | 6402:00:00     | 718:06:00                                 | 11:28                          | 45:49:00  | 108:40:00  | 11:27     | 99.21                      | 15.11               | 98.35                |
| EWHPL-78               | 843689     | 6255:00:00     | 853:49:00                                 | 31:30:00                       | 35:44:00  | 108:40:00  | 11:27     | 99.08                      | 14.45               | 98.35                |
| EWHPL-79               | 979623     | 6502:00:00     | 612:00:00                                 | 12:57                          | 50:29:00  | 108:40:00  | 11:27     | 99.13                      | 16.78               | 98.35                |
| EWHPL-80               | 1131163    | 6601:00:00     | 542:29:00                                 | 01:20                          | 31:46:00  | 108:40:00  | 11:27     | 99.55                      | 19.38               | 98.35                |
| EWHPL-81               | 1152283    | 6605:00:00     | 534:09:00                                 | 05:15                          | 32:55:00  | 108:40:00  | 11:27     | 99.48                      | 19.74               | 98.35                |
| EWHPL-82               | 1103230    | 6516:00:00     | 581:48:00                                 | 47:45:00                       | 30:20:00  | 108:40:00  | 11:27     | 98.93                      | 18.9                | 98.35                |
| EWHPL-83               | 816067     | 6438:00:00     | 687:31:00                                 | 15:37                          | 33:45:00  | 108:40:00  | 12:47     | 99.32                      | 13.98               | 98.34                |
| EWHPL-84               | 803599     | 6429:00:00     | 697:32:00                                 | 07:55                          | 42:44:00  | 108:40:00  | 12:47     | 99.31                      | 13.77               | 98.34                |
| EWHPL-85               | 886472     | 6353:00:00     | 724:19:00                                 | 61:13:00                       | 36:01:00  | 108:40:00  | 12:47     | 98.67                      | 15.19               | 98.34                |
| EWHPL-86               | 901973     | 6372:00:00     | 729:52:00                                 | 41:05:00                       | 31:36:00  | 108:40:00  | 12:47     | 99                         | 15.45               | 98.34                |
| Total                  | 14648836   | 97110:00       | 9694:28:00                                | 305:25:00                      | 530:28:00 | 1630:00:00 | 179:12:00 | 99.24                      | 16.73               | 98.35                |
| Site: CK 1-4,KARNATAKA |            |                | ENERCON WINDFARMS (HINDUSTAN) PVT LIMITED |                                |           |            |           |                            | Total WEC : 71      |                      |
| EWHPL-01               | 1008222    | 6552:00:00     | 579:28:00                                 | 07:45                          | 28:32:00  | 104:17:00  | 25:26:00  | 99.5                       | 17.27               | 98.22                |
| EWHPL-02               | 1014707    | 6485:00:00     | 630:31:00                                 | 21:17                          | 30:34:00  | 104:17:00  | 25:37:00  | 99.29                      | 17.38               | 98.22                |
| EWHPL-03               | 956507     | 6423:00:00     | 709:57:00                                 | 06:29                          | 30:30:00  | 104:17:00  | 25:31:00  | 99.49                      | 16.39               | 98.22                |
| EWHPL-04               | 1005105    | 6339:00:00     | 768:42:00                                 | 22:25                          | 37:24:00  | 104:17:00  | 25:22:00  | 99.18                      | 17.22               | 98.22                |

<sup>3</sup> WEG Performance report is provided by O & M contract ("Enercon").



|          |         |            |           |          |           |           |          |       |       |       |
|----------|---------|------------|-----------|----------|-----------|-----------|----------|-------|-------|-------|
| EWHPL-05 | 1060311 | 6427:00:00 | 698:32:00 | 09:22    | 31:29:00  | 104:17:00 | 26:37:00 | 99.44 | 18.17 | 98.21 |
| EWHPL-06 | 1028025 | 6432:00:00 | 666:23:00 | 31:37:00 | 36:29:00  | 104:17:00 | 26:24:00 | 99.07 | 17.61 | 98.21 |
| EWHPL-07 | 963664  | 6325:00:00 | 806:19:00 | 05:20    | 28:50:00  | 104:17:00 | 26:24:00 | 99.53 | 16.51 | 98.21 |
| EWHPL-08 | 918218  | 6359:00:00 | 769:40:00 | 09:53    | 27:49:00  | 104:17:00 | 26:44:00 | 99.48 | 15.73 | 98.2  |
| EWHPL-09 | 870931  | 6141:00:00 | 957:43:00 | 19:16    | 48:54:00  | 104:17:00 | 26:28:00 | 99.07 | 14.92 | 98.21 |
| EWHPL-10 | 1208994 | 6305:00:00 | 706:51:00 | 25:43:00 | 55:09:00  | 108:47:00 | 22:40    | 98.88 | 20.92 | 98.18 |
| EWHPL-11 | 1202627 | 6309:00:00 | 709:46:00 | 45:26:00 | 33:15:00  | 108:47:00 | 22:40    | 98.91 | 20.81 | 98.18 |
| EWHPL-12 | 1054297 | 6214:00:00 | 812:13:00 | 31:48:00 | 34:42:00  | 108:47:00 | 22:40    | 99.08 | 18.24 | 98.18 |
| EWHPL-13 | 1008348 | 6162:00:00 | 813:43:00 | 39:57:00 | 77:03:00  | 108:47:00 | 22:40    | 98.38 | 17.45 | 98.18 |
| EWHPL-14 | 1025272 | 6344:00:00 | 707:26:00 | 07:39    | 33:38:00  | 108:47:00 | 22:40    | 99.43 | 17.74 | 98.18 |
| EWHPL-15 | 1025353 | 6546:00:00 | 581:42:00 | 06:28    | 31:43:00  | 108:47:00 | 22:40    | 99.48 | 17.57 | 98.2  |
| EWHPL-16 | 1129769 | 6456:00:00 | 618:15:00 | 26:35:00 | 69:27:00  | 108:47:00 | 18:55    | 98.68 | 19.36 | 98.25 |
| EWHPL-17 | 1066563 | 6453:00:00 | 655:26:00 | 15:07    | 48:47:00  | 108:47:00 | 18:55    | 99.12 | 18.27 | 98.25 |
| EWHPL-18 | 1067567 | 6390:00:00 | 702:04:00 | 36:11:00 | 43:23:00  | 108:47:00 | 18:55    | 98.91 | 18.29 | 98.25 |
| EWHPL-19 | 1119331 | 6315:00:00 | 805:21:00 | 05:58    | 44:29:00  | 108:47:00 | 18:55    | 99.31 | 19.18 | 98.25 |
| EWHPL-20 | 1264060 | 6429:00:00 | 550:21:00 | 29:48:00 | 162:19:00 | 108:47:00 | 18:55    | 97.37 | 21.66 | 98.25 |
| EWHPL-21 | 1281812 | 6571:00:00 | 565:54:00 | 03:27    | 34:24:00  | 81:48:00  | 40:54:00 | 99.48 | 21.96 | 98.32 |
| EWHPL-22 | 1306938 | 6468:00:00 | 605:03:00 | 38:35:00 | 63:41:00  | 81:48:00  | 40:54:00 | 98.6  | 22.39 | 98.32 |
| EWHPL-23 | 1315550 | 6502:00:00 | 526:02:00 | 15:38    | 129:38:00 | 81:48:00  | 40:54:00 | 98.01 | 22.54 | 98.32 |
| EWHPL-24 | 1438365 | 6583:00:00 | 544:25:00 | 13:53    | 32:15:00  | 81:48:00  | 40:54:00 | 99.37 | 24.64 | 98.32 |
| EWHPL-25 | 1454578 | 6616:00:00 | 531:22:00 | 0        | 25:56:00  | 81:48:00  | 40:54:00 | 99.64 | 24.92 | 98.32 |
| EWHPL-26 | 1355964 | 6585:00:00 | 554:02:00 | 11:55    | 22:21     | 81:48:00  | 40:54:00 | 99.53 | 23.23 | 98.32 |
| EWHPL-27 | 1228048 | 6350:00:00 | 788:04:00 | 00:45    | 30:12:00  | 81:48:00  | 45:11:00 | 99.58 | 21.04 | 98.26 |
| EWHPL-28 | 1117674 | 6203:00:00 | 876:18:00 | 00:18    | 104:34:00 | 81:48:00  | 30:22:00 | 98.56 | 19.15 | 98.46 |
| EWHPL-29 | 1119926 | 6361:00:00 | 786:12:00 | 0        | 28:37:00  | 81:48:00  | 38:23:00 | 99.61 | 19.19 | 98.35 |
| EWHPL-30 | 1133937 | 6463:00:00 | 658:44:00 | 24:12:00 | 30:51:00  | 81:48:00  | 38:25:00 | 99.25 | 19.43 | 98.35 |
| EWHPL-31 | 1129474 | 6514:00:00 | 631:06:00 | 03:06    | 28:00:00  | 81:48:00  | 38:00:00 | 99.57 | 19.35 | 98.36 |
| EWHPL-32 | 1104922 | 6504:00:00 | 629:42:00 | 09:51    | 32:20:00  | 81:48:00  | 38:19:00 | 99.42 | 18.93 | 98.35 |
| EWHPL-33 | 1121360 | 6528:00:00 | 587:30:00 | 06:27    | 57:59:00  | 81:48:00  | 34:34:00 | 99.12 | 19.21 | 98.41 |
| EWHPL-34 | 1205009 | 6638:00:00 | 524:18:00 | 19:54    | 26:14:00  | 81:48:00  | 05:53    | 99.37 | 20.64 | 98.8  |



|         |         |            |           |          |           |          |          |       |       |       |
|---------|---------|------------|-----------|----------|-----------|----------|----------|-------|-------|-------|
| EWHP-35 | 1170918 | 6564:00:00 | 602:41:00 | 14:47    | 26:51:00  | 81:48:00 | 05:53    | 99.43 | 20.06 | 98.8  |
| EWHP-36 | 1191832 | 6552:00:00 | 622:23:00 | 06:59    | 26:57:00  | 81:48:00 | 05:53    | 99.53 | 20.42 | 98.8  |
| EWHP-37 | 1107811 | 6454:00:00 | 705:16:00 | 13:30    | 35:35:00  | 81:48:00 | 05:53    | 99.33 | 18.98 | 98.8  |
| EWHP-38 | 1000946 | 6369:00:00 | 754:37:00 | 07:40    | 77:02:00  | 81:48:00 | 05:53    | 98.84 | 17.15 | 98.8  |
| EWHP-39 | 994993  | 6520:00:00 | 645:25:00 | 09:43    | 33:18:00  | 81:48:00 | 05:53    | 99.41 | 17.05 | 98.8  |
| EWHP-40 | 980380  | 6523:00:00 | 630:21:00 | 25:46:00 | 29:12:00  | 81:48:00 | 05:53    | 99.25 | 16.8  | 98.8  |
| EWHP-41 | 876097  | 6223:00:00 | 929:14:00 | 22:34    | 35:13:00  | 54:16:00 | 38:09:00 | 99.21 | 15.01 | 98.73 |
| EWHP-42 | 823494  | 6168:00:00 | 987:36:00 | 18:29    | 30:12:00  | 54:16:00 | 38:09:00 | 99.33 | 14.11 | 98.73 |
| EWHP-43 | 876457  | 6258:00:00 | 884:33:00 | 24:06:00 | 37:11:00  | 54:16:00 | 38:09:00 | 99.16 | 15.02 | 98.73 |
| EWHP-44 | 870836  | 6260:00:00 | 818:42:00 | 40:56:00 | 84:16:00  | 54:16:00 | 38:09:00 | 98.28 | 14.92 | 98.73 |
| EWHP-45 | 839856  | 6277:00:00 | 883:41:00 | 06:10    | 36:44:00  | 54:16:00 | 38:09:00 | 99.41 | 14.39 | 98.73 |
| EWHP-46 | 792809  | 6321:00:00 | 829:29:00 | 07:36    | 45:49:00  | 54:16:00 | 38:09:00 | 99.27 | 13.58 | 98.73 |
| EWHP-47 | 897339  | 6306:00:00 | 847:20:00 | 09:17    | 42:51:00  | 54:16:00 | 36:31:00 | 99.29 | 15.37 | 98.76 |
| EWHP-48 | 884755  | 6310:00:00 | 855:03:00 | 03:33    | 39:19:00  | 54:16:00 | 34:19:00 | 99.41 | 15.16 | 98.79 |
| EWHP-49 | 861102  | 6313:00:00 | 847:29:00 | 04:25    | 40:56:00  | 54:16:00 | 36:31:00 | 99.38 | 14.75 | 98.76 |
| EWHP-50 | 989939  | 6378:00:00 | 674:01:00 | 36:59:00 | 122:48:00 | 51:25:00 | 38:21:00 | 97.81 | 16.96 | 98.77 |
| EWHP-51 | 1029603 | 6411:00:00 | 739:07:00 | 22:59    | 34:25:00  | 51:25:00 | 38:21:00 | 99.21 | 17.64 | 98.77 |
| EWHP-52 | 894514  | 6402:00:00 | 743:12:00 | 22:38    | 38:36:00  | 51:25:00 | 38:21:00 | 99.16 | 15.33 | 98.77 |
| EWHP-53 | 942387  | 6431:00:00 | 720:34:00 | 14:11    | 40:58:00  | 51:25:00 | 38:21:00 | 99.24 | 16.15 | 98.77 |
| EWHP-54 | 947872  | 6537:00:00 | 630:38:00 | 07:33    | 31:28:00  | 51:25:00 | 38:21:00 | 99.47 | 16.24 | 98.77 |
| EWHP-55 | 973267  | 6460:00:00 | 705:03:00 | 07:35    | 33:36:00  | 51:25:00 | 38:21:00 | 99.44 | 16.67 | 98.77 |
| EWHP-56 | 852775  | 6446:00:00 | 730:19:00 | 01:03    | 28:52:00  | 51:25:00 | 38:21:00 | 99.59 | 14.61 | 98.77 |
| EWHP-57 | 781275  | 6393:00:00 | 776:51:00 | 0        | 36:43:00  | 51:25:00 | 38:21:00 | 99.5  | 13.39 | 98.77 |
| EWHP-58 | 791343  | 6445:00:00 | 703:17:00 | 15:47    | 44:42:00  | 51:25:00 | 38:21:00 | 99.17 | 13.56 | 98.77 |
| EWHP-59 | 922352  | 6485:00:00 | 667:51:00 | 07:38    | 46:00:00  | 51:25:00 | 38:21:00 | 99.26 | 15.8  | 98.77 |
| EWHP-60 | 909329  | 6441:00:00 | 680:04:00 | 53:11:00 | 34:22:00  | 51:25:00 | 38:21:00 | 98.8  | 15.58 | 98.77 |
| EWHP-61 | 971939  | 6501:00:00 | 664:16:00 | 05:35    | 35:30:00  | 51:25:00 | 38:36:00 | 99.44 | 16.65 | 98.77 |
| EWHP-62 | 830334  | 6290:00:00 | 833:56:00 | 55:54:00 | 27:25:00  | 51:25:00 | 38:36:00 | 98.86 | 14.23 | 98.77 |
| EWHP-63 | 821628  | 6379:00:00 | 793:09:00 | 07:54    | 25:56:00  | 51:25:00 | 38:36:00 | 99.54 | 14.08 | 98.77 |
| EWHP-64 | 788877  | 6325:00:00 | 777:07:00 | 45:41:00 | 59:06:00  | 51:25:00 | 38:36:00 | 98.56 | 13.52 | 98.77 |



|              |                 |                  |                 |                   |                   |                   |                   |              |              |              |
|--------------|-----------------|------------------|-----------------|-------------------|-------------------|-------------------|-------------------|--------------|--------------|--------------|
| EWHP-65      | 763326          | 6317:00:00       | 858:18:00       | 03:18             | 27:23:00          | 51:25:00          | 38:36:00          | 99.58        | 13.08        | 98.77        |
| EWHP-66      | 739687          | 6311:00:00       | 852:43:00       | 13:56             | 28:20:00          | 51:25:00          | 38:36:00          | 99.42        | 12.67        | 98.77        |
| EWHP-67      | 759421          | 6323:00:00       | 831:30:00       | 25:38:00          | 25:51:00          | 51:25:00          | 38:36:00          | 99.29        | 13.01        | 98.77        |
| EWHP-68      | 762012          | 6302:00:00       | 870:12:00       | 03:40             | 30:07:00          | 51:25:00          | 38:36:00          | 99.54        | 13.06        | 98.77        |
| EWHP-69      | 761035          | 6352:00:00       | 807:33:00       | 18:30             | 27:56:00          | 51:25:00          | 38:36:00          | 99.36        | 13.04        | 98.77        |
| EWHP-70      | 770207          | 6342:00:00       | 831:14:00       | 11:19             | 21:26             | 51:25:00          | 38:36:00          | 99.55        | 13.2         | 98.77        |
| EWHP-71      | 837453          | 6439:00:00       | 730:25:00       | 02:00             | 29:18:00          | 51:25:00          | 43:52:00          | 99.57        | 14.35        | 98.69        |
| <b>Total</b> | <b>71321628</b> | <b>454420:00</b> | <b>51524:15</b> | <b>1150:35:00</b> | <b>3033:42:00</b> | <b>5390:44:00</b> | <b>2202:55:00</b> | <b>99.19</b> | <b>17.22</b> | <b>98.53</b> |