

# BUNDLED WIND POWER PROJECT IN TAMIL NADU MANAGED BY ENERCON INDIA LIMITED - II

Wind World (India) Limited

|                          |                                                                                                                                                                                                                                    |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Project Title</b>     | Bundled Wind Power Project in Tamil Nadu managed by Enercon India Limited - II                                                                                                                                                     |
| <b>Version</b>           | 2.0                                                                                                                                                                                                                                |
| <b>Report ID</b>         | INDIA/MUM/285/2013_12-09-2013                                                                                                                                                                                                      |
| <b>Date of Issue</b>     | 26-11-2013                                                                                                                                                                                                                         |
| <b>Project ID</b>        | 404                                                                                                                                                                                                                                |
| <b>Monitoring Period</b> | 16-09-2012 to 15-09- 2013                                                                                                                                                                                                          |
| <b>Prepared By</b>       | Wind World (India) Limited                                                                                                                                                                                                         |
| <b>Contact</b>           | Wind World Tower, A-9, Veera Industrial Estate, Veera Desai Road, Andheri West, Mumbai, Maharashtra, PIN-400 053, India<br><br>Telephone: +91-22-66924848, Email Id: yogesh.mehra@windworldindia.com<br><br>www.windworldindia.com |

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## 1 PROJECT DETAILS

### 1.1 Summary Description of Project

The bundled wind power project was of capacity 36 MW earlier as per the registered PD. The subproject of Bannari Amman Spinning Mills was registered as CDM project on 17-06-2011 (<http://cdm.unfccc.int/Projects/DB/SIRIM1306929016.84/view>). Hence, this subproject has not been monitored. Thus project capacity has been reduced from 36 MW to 24.8 MW after omission of Wind Turbine Generators (WTGs) belonging to the investor Bannari Amman Spinning Mills. Bundled wind power project of 24.8 MW ("Project") is installed in the state of Tamil Nadu and provides reliable, renewable power to the Tamil Nadu state electricity grid. The Project leads to reduction of greenhouse gas emissions because it displaces electricity from fossil fuel based electricity generation plants. The Project harnesses renewable resources in the region, and thereby displacing non-renewable natural resources thereby ultimately leading to sustainable economic and environmental development. Wind World (India) Limited (WWIL) is the equipment supplier and the operations and maintenance contractor for the Project. The generated electricity is supplied to the utility (Discom) under a long-term power purchase agreement (PPA).

The first machine under the project activity was commissioned on 26-02-2007 and the last machine under the project activity was commissioned on 11-05-2007. The expected operational lifetime of the project is for 20 years. The total emission reductions achieved under this (fifth) monitoring period (16-09-2012 to 15-09-2013) are 33190 tCO<sub>2</sub>.

### 1.2 Sectoral Scope and Project Type

Sectoral Scope: 1, Energy industries (renewable/ non-renewable sources)

The project is a large scale bundled wind power project activity having four investors. The project involves a total of 31 nos. of WEGs of 800 KW each.

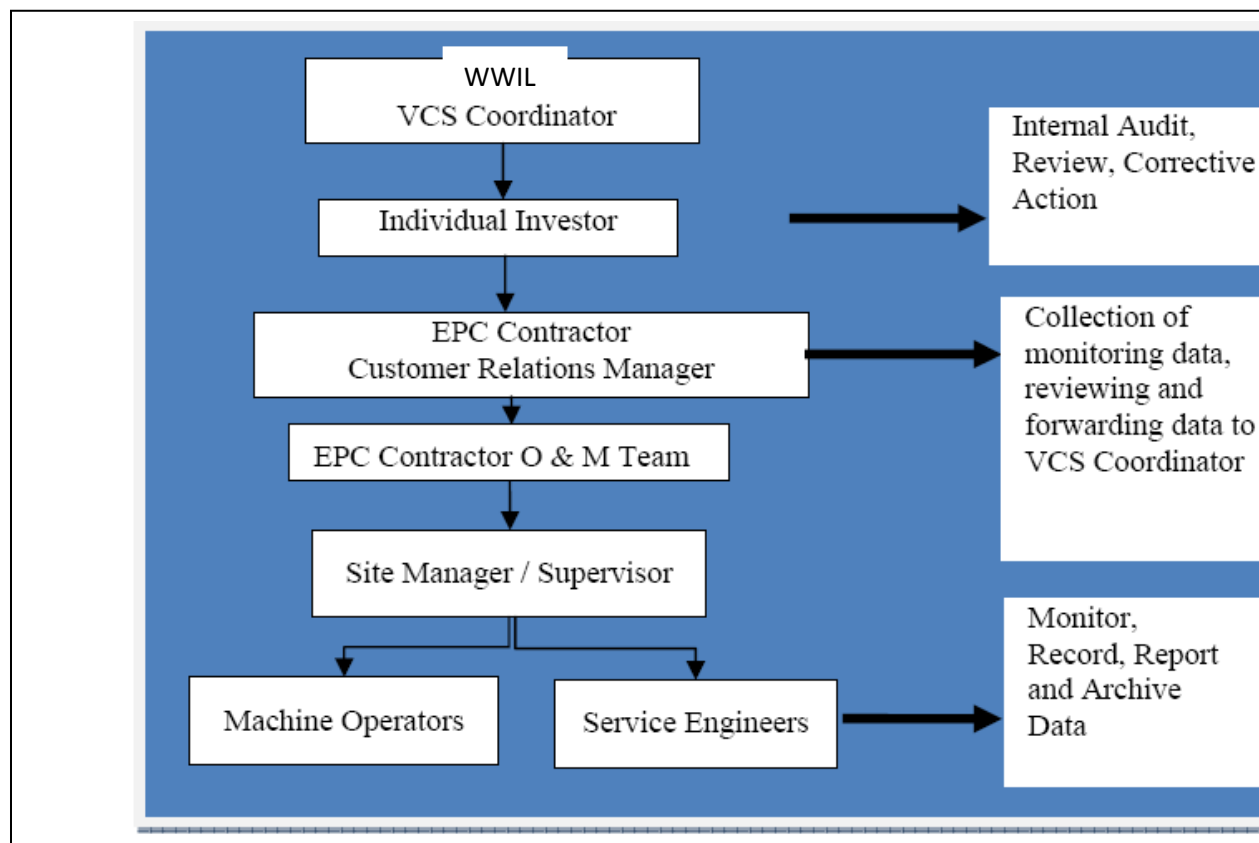
It is not a grouped project.

### 1.3 Project Proponent

Wind World (India) Limited ("WWIL") is the project proponent for this activity and has been duly authorized by the individual investors to take up the said project activity for VCS development. WWIL will be responsible for all the communications and actions in relation to the project being validated in accordance with the VCS standard.

#### ***Roles and Responsibility:***

WWIL is operation and maintenance contractor for the project. The Project is operated and managed by WWIL. The operational and management structure implemented by WWIL is as follows:



Contact Information of project proponent is given in the table below:

|                  |                                                              |
|------------------|--------------------------------------------------------------|
| Organization:    | Wind World (India) Limited                                   |
| Street/P.O.Box:  | A-9, Veera Industrial Estate, Veera Desai Road, Andheri West |
| Building:        | Wind World Tower                                             |
| City:            | Mumbai                                                       |
| State/Region:    | Maharashtra                                                  |
| Postfix/ZIP:     | 400 053                                                      |
| Country:         | India                                                        |
| Telephone:       | +91-22-66924848                                              |
| FAX:             | +91- 22- 67040473 / 66921177                                 |
| E-Mail:          | yogesh.mehra@windworldindia.com                              |
| URL:             | www.windworldindia.com                                       |
| Represented by:  |                                                              |
| Title:           | Managing Director                                            |
| Salutation:      | Mr.                                                          |
| Last Name:       | Mehra                                                        |
| Middle Name:     | -                                                            |
| First Name:      | Yogesh                                                       |
| Department:      | Corporate                                                    |
| Mobile:          | +91-9820040301                                               |
| Direct FAX:      | +91 22 66921177                                              |
| Direct tel:      | +91-22-67022832                                              |
| Personal E-Mail: | yogesh.mehra@windworldindia.com                              |

## 1.4 Other Entities Involved in the Project

WWIL is the project proponent for this activity and has been duly authorized by the individual investors to take up the said project activity for VCS development.

The detail of project participants, who are the project investors are as follows:

| S. No. | Name of Customers                  | Contact details                                                  |
|--------|------------------------------------|------------------------------------------------------------------|
| 1      | Premier Spg & Wvg Mills Pvt Ltd    | <a href="http://www.premiermills.com/">www.premiermills.com/</a> |
| 2      | Premier Fine Yarns Pvt Ltd         | <a href="http://www.premiermills.com/">www.premiermills.com/</a> |
| 3      | Coimbatore Twisted (Premier Mills) | <a href="http://www.premiermills.com/">www.premiermills.com/</a> |
| 4      | Coimbatore Polytex (Premier Mills) | <a href="http://www.premiermills.com/">www.premiermills.com/</a> |

## 1.5 Project Start Date

The first machine under the project activity was commissioned on 26-02-2007.

## 1.6 Project Crediting Period

The length of the Crediting period of the project activity as per registered PDD is 10 years (Renewable) starting from 01-04-2006 to 31-03-2016. The fifth monitoring period (current) has been taken from 16-Sep-2012 to 15-Sep-2013.

## 1.7 Project Location

The project is located at Pushpathur site in Dindigull district and Chinnakkampalayam in Erode district of Tamil Nadu that forms part of the Southern regional electricity grid of India.

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

| SI NO. | Customer Name                                 | HTSC Number | Latitude (North) |         |        | Longitude (East) |         |        | UIN         |
|--------|-----------------------------------------------|-------------|------------------|---------|--------|------------------|---------|--------|-------------|
|        |                                               |             | Deg              | Minutes | Second | Deg              | Minutes | Second |             |
| 1      | Premier Spinnings and Weaving Mills Pvt.Ltd.  | D47         | 10.00            | 32.00   | 5.05   | 77.00            | 25.00   | 20.91  | PSWMPLPU-02 |
| 2      | Premier Spinnings and Weaving Mills Pvt.Ltd.  | D49         | 10.00            | 32.00   | 9.20   | 77.00            | 25.00   | 35.41  | PSWMPLPU-04 |
| 3      | Premier Spinnings and Weaving Mills Pvt.Ltd.  | D52         | 10.00            | 32.00   | 24.92  | 77.00            | 25.00   | 1.08   | PSWMPLPU-05 |
| 4      | Premier Spinnings and Weaving Mills Pvt .Ltd. | D54         | 10.00            | 34.00   | 22.31  | 77.00            | 25.00   | 37.47  | PSWMPLPU-01 |
| 5      | Premier Spinnings and Weaving Mills Pvt.Ltd.  | D79         | 10.00            | 34.00   | 49.80  | 77.00            | 26.00   | 35.98  | PSWMPLPU-07 |
| 6      | Premier Spinnings and Weaving Mills Pvt.Ltd.  | D80         | 10.00            | 34.00   | 57.15  | 77.00            | 26.00   | 52.68  | PSWMPLPU-06 |
| 7      | Premier Spinnings and Weaving Mills Pvt.Ltd.  | D81         | 10.00            | 34.00   | 35.66  | 77.00            | 24.00   | 6.33   | PSWMPLPU-03 |
| 8      | Premier Spinnings and Weaving Mills Pvt .Ltd. | D82         | 10.00            | 34.00   | 58.52  | 77.00            | 24.00   | 3.72   | PSWMPLPU-08 |

|    |                                               |     |       |       |       |       |       |       |             |
|----|-----------------------------------------------|-----|-------|-------|-------|-------|-------|-------|-------------|
| 9  | Premier Spinnings and Weaving Mills Pvt .Ltd. | D83 | 10.00 | 34.00 | 34.42 | 77.00 | 23.00 | 41.60 | PSWMPLPU-09 |
| 10 | Premier Spinnings and Weaving Mills Pvt .Ltd. | D84 | 10.00 | 34.00 | 29.82 | 77.00 | 24.00 | 38.05 | PSWMPLPU-10 |
| 11 | Premier Fine Yarns P Ltd                      | D26 | 10.00 | 33.00 | 23.98 | 77.00 | 24.00 | 45.82 | PMPLPU-09   |
| 12 | Premier Fine Yarns P Ltd                      | D27 | 10.00 | 33.00 | 31.11 | 77.00 | 24.00 | 40.85 | PMPLPU-07   |
| 13 | Premier Fine Yarns P Ltd                      | D28 | 10.00 | 33.00 | 6.07  | 77.00 | 25.00 | 30.66 | PMPLPU-06   |
| 14 | Premier Fine Yarns P Ltd                      | D29 | 10.00 | 33.00 | 11.92 | 77.00 | 25.00 | 23.14 | PMPLPU-05   |
| 15 | Premier Fine Yarns P Ltd                      | D30 | 10.00 | 33.00 | 43.81 | 77.00 | 25.00 | 35.03 | PMPLPU-01   |
| 16 | Premier Fine Yarns P Ltd                      | D30 | 10.00 | 33.00 | 56.76 | 77.00 | 25.00 | 39.05 | PMPLPU-02   |
| 17 | Premier Fine Yarns P Ltd                      | D32 | 10.00 | 33.00 | 51.10 | 77.00 | 25.00 | 13.65 | PMPLPU-03   |
| 18 | Premier Fine Yarns P Ltd                      | D32 | 10.00 | 33.00 | 54.39 | 77.00 | 25.00 | 4.11  | PMPLPU-04   |
| 19 | Premier Fine Yarns P Ltd                      | D33 | 10.00 | 33.00 | 55.90 | 77.00 | 24.00 | 49.46 | PMPLPU-10   |
| 20 | Premier Fine Yarns P Ltd                      | D34 | 10.00 | 34.00 | 15.28 | 77.00 | 24.00 | 60.00 | PMPLPU-08   |

|    |                               |     |       |       |       |       |       |       |           |
|----|-------------------------------|-----|-------|-------|-------|-------|-------|-------|-----------|
| 21 | Coimbatore Twisters Pvt. Ltd. | D37 | 10.00 | 34.00 | 32.85 | 77.00 | 25.00 | 45.31 | CTPLPU-01 |
| 22 | Coimbatore Polytex Pvt.Ltd    | D38 | 10.00 | 34.00 | 35.89 | 77.00 | 25.00 | 26.63 | CPPLPU-03 |
| 23 | Coimbatore Polytex Pvt.Ltd    | D43 | 10.00 | 34.00 | 43.51 | 77.00 | 25.00 | 21.33 | CPPLPU-01 |
| 24 | Coimbatore Polytex Pvt.Ltd    | D43 | 10.00 | 34.00 | 51.46 | 77.00 | 25.00 | 45.95 | CPPLPU-02 |
| 25 | Coimbatore Polytex Pvt.Ltd    | D44 | 10.00 | 35.00 | 3.85  | 77.00 | 25.00 | 45.85 | CPPLPU-04 |
| 26 | Coimbatore Polytex Pvt.Ltd    | D45 | 10.00 | 35.00 | 37.18 | 77.00 | 25.00 | 26.49 | CPPLPU-05 |
| 27 | Coimbatore Polytex Pvt.Ltd    | D68 | 10.00 | 35.00 | 44.64 | 77.00 | 25.00 | 33.42 | CPPLPU-08 |
| 28 | Coimbatore Polytex Pvt.Ltd    | D73 | 10.00 | 35.00 | 55.20 | 77.00 | 26.00 | 9.54  | CPPLPU-09 |
| 29 | Coimbatore Polytex Pvt.Ltd    | D74 | 10.00 | 36.00 | 2.31  | 77.00 | 25.00 | 32.83 | CPPLPU-06 |

|    |                       |         |     |       |       |       |       |       |       |           |
|----|-----------------------|---------|-----|-------|-------|-------|-------|-------|-------|-----------|
| 30 | Coimbatore<br>Pvt.Ltd | Polytex | D75 | 10.00 | 36.00 | 14.23 | 77.00 | 25.00 | 30.99 | CPPLPU-07 |
| 31 | Coimbatore<br>Pvt.Ltd | Polytex | D78 | 10.00 | 34.00 | 8.51  | 77.00 | 25.00 | 33.48 | CPPLPU-10 |

## 1.8 Title and Reference of Methodology

Baseline Methodology: Consolidate baseline methodology for grid-connected electricity generation from renewable sources, ACM0002, Version 10.

Monitoring Methodology: Consolidated monitoring methodology for grid-connected electricity generation from renewable sources, ACM0002, Version 10

## 2 IMPLEMENTATION STATUS

### 2.1 Implementation Status of the Project Activity

The first machine under the project activity was commissioned on 26-02-2007 and last machine under the project activity was commissioned on 11-05-2007. The project activity consists of 31 machines (800 kW) of WWIL make E-48. The commissioning date for all the machines included in the project activity is given in the table below.

| Sr. No. | Name of Customers                  | HTSC No. | Commissioning Date | No. of M/C | Capacity (MW) |
|---------|------------------------------------|----------|--------------------|------------|---------------|
| 1       | Premier Spg & Wvg Mills Pvt Ltd    | D47      | 21-03-2007         | 10         | 8             |
| 2       | Premier Spg & Wvg Mills Pvt Ltd    | D49      | 21-03-2007         |            |               |
| 3       | Premier Spg & Wvg Mills Pvt Ltd    | D52      | 26-03-2007         |            |               |
| 4       | Premier Spg & Wvg Mills Pvt Ltd    | D54      | 26-03-2007         |            |               |
| 5       | Premier Spg & Wvg Mills Pvt Ltd    | D79      | 25-04-2007         |            |               |
| 6       | Premier Spg & Wvg Mills Pvt Ltd    | D80      | 25-04-2007         |            |               |
| 7       | Premier Spg & Wvg Mills Pvt Ltd    | D81      | 25-04-2007         |            |               |
| 8       | Premier Spg & Wvg Mills Pvt Ltd    | D82      | 09-04-2007         |            |               |
| 9       | Premier Spg & Wvg Mills Pvt Ltd    | D83      | 09-05-2007         |            |               |
| 10      | Premier Spg & Wvg Mills Pvt Ltd    | D84      | 11-05-2007         |            |               |
| 11      | Premier Fine Yarns Pvt Ltd         | D26      | 26-02-2007         | 10         | 8             |
| 12      | Premier Fine Yarns Pvt Ltd         | D27      | 26-02-2007         |            |               |
| 13      | Premier Fine Yarns Pvt Ltd         | D28      | 26-02-2007         |            |               |
| 14      | Premier Fine Yarns Pvt Ltd         | D29      | 26-02-2007         |            |               |
| 15      | Premier Fine Yarns Pvt Ltd         | D30      | 27-02-2007         |            |               |
| 16      | Premier Fine Yarns Pvt Ltd         | D30      | 27-02-2007         |            |               |
| 17      | Premier Fine Yarns Pvt Ltd         | D32      | 07-03-2007         |            |               |
| 18      | Premier Fine Yarns Pvt Ltd         | D32      | 07-03-2007         |            |               |
| 19      | Premier Fine Yarns Pvt Ltd         | D33      | 07-03-2007         |            |               |
| 20      | Premier Fine Yarns Pvt Ltd         | D34      | 07-03-2007         |            |               |
| 21      | Coimbatore Twisted (Premier Mills) | D37      | 14-03-2007         | 1          | 0.8           |
| 22      | Coimbatore Polytex (Premier        | D38      | 14-03-2007         | 10         | 8             |

| Sr. No. | Name of Customers                  | HTSC No. | Commissioning Date | No. of M/C | Capacity (MW) |
|---------|------------------------------------|----------|--------------------|------------|---------------|
|         | Mills)                             |          |                    |            |               |
| 23      | Coimbatore Polytex (Premier Mills) | D43      | 21-03-2007         |            |               |
| 24      | Coimbatore Polytex (Premier Mills) | D43      | 21-03-2007         |            |               |
| 25      | Coimbatore Polytex (Premier Mills) | D44      | 21-03-2007         |            |               |
| 26      | Coimbatore Polytex (Premier Mills) | D45      | 21-03-2007         |            |               |
| 27      | Coimbatore Polytex (Premier Mills) | D68      | 29-03-2007         |            |               |
| 28      | Coimbatore Polytex (Premier Mills) | D73      | 30-03-2007         |            |               |
| 29      | Coimbatore Polytex (Premier Mills) | D74      | 30-03-2007         |            |               |
| 30      | Coimbatore Polytex (Premier Mills) | D75      | 30-03-2007         |            |               |
| 31      | Coimbatore Polytex (Premier Mills) | D78      | 16-04-2007         |            |               |
|         | Total                              |          |                    | 31         | 24.8          |

WWIL operation and maintenance activities are ISO 9001:2008 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. There have not been any special events comprising of major overhauls and downtime of project activity during the said monitoring period; thus there has not been any change in the operation of project activity during the monitoring period.

Runtime/shut down details is as follows:

| State                     | TAMILNADU  |            |              | Monthly Performance Report           |           |           |            |            |                         | Date:16/09/2012-15/09/2013 |                      |  |
|---------------------------|------------|------------|--------------|--------------------------------------|-----------|-----------|------------|------------|-------------------------|----------------------------|----------------------|--|
| Wec No.                   | Generation |            | Lack Of Wind | Down Time                            |           |           |            | Total      | Machine Availability(%) | Capacity Factor(%)         | Grid Availability(%) |  |
|                           | KWh        | Hrs        |              | Machine                              |           | Grid      |            |            |                         |                            |                      |  |
|                           |            |            |              | Fault                                | Shutdown  | Fault     | Shutdown   |            |                         |                            |                      |  |
| Site: PUSHATHUR,TAMILNADU |            |            |              | COIMBATORE POLYTEX PVT LTD           |           |           |            |            |                         | Total WEC : 10             |                      |  |
| CPPLPU-01 (40)            | 1,347,667  | 6126:00:00 | 1638:28:00   | 9:30                                 | 31:33:00  | 57:15:00  | 906:35:00  | 2643:21:00 | 99.53                   | 19.23                      | 89                   |  |
| CPPLPU-02 (39)            | 1,129,598  | 5620:00:00 | 1627:26:00   | 524:16:00                            | 46:34:00  | 55:35:00  | 913:34:00  | 3167:25:00 | 93.48                   | 16.12                      | 88.94                |  |
| CPPLPU-03 (37)            | 1,141,442  | 5780:00:00 | 1764:38:00   | 88:46:00                             | 185:36:00 | 62:54:00  | 891:43:00  | 2993:37:00 | 96.86                   | 16.33                      | 89.07                |  |
| CPPLPU-04 (45)            | 1,197,954  | 5965:00:00 | 1749:05:00   | 45:23:00                             | 48:53:00  | 63:13:00  | 903:50:00  | 2810:24:00 | 98.92                   | 17.09                      | 88.96                |  |
| CPPLPU-05 (51)            | 1,159,444  | 5649:00:00 | 2037:53:00   | 89:48:00                             | 38:26:00  | 50:31:00  | 906:35:00  | 3123:13:00 | 98.54                   | 16.55                      | 89.07                |  |
| CPPLPU-06 (56)            | 1,025,078  | 5680:00:00 | 1783:46:00   | 147:28:00                            | 48:34:00  | 81:58:00  | 1057:16:00 | 3119:02:00 | 97.74                   | 14.13                      | 86.89                |  |
| CPPLPU-07 (57)            | 1,132,992  | 5994:00:00 | 1535:06:00   | 109:44:00                            | 28:48:00  | 85:33:00  | 1055:51:00 | 2815:02:00 | 98.41                   | 15.64                      | 86.86                |  |
| CPPLPU-08 (60)            | 1,110,175  | 6097:00:00 | 1497:05:00   | 31:04:00                             | 34:34:00  | 84:48:00  | 1061:06:00 | 2708:37:00 | 99.25                   | 15.27                      | 86.85                |  |
| CPPLPU-09 (61)            | 1,091,727  | 6093:00:00 | 1502:35:00   | 22:42                                | 46:57:00  | 90:15:00  | 1055:51:00 | 2718:20:00 | 99.2                    | 15.15                      | 86.81                |  |
| CPPLPU-10 (58)            | 1,150,403  | 6138:00:00 | 1473:01:00   | 42:35:00                             | 26:37:00  | 88:57:00  | 1055:51:00 | 2687:01:00 | 99.21                   | 16.19                      | 86.93                |  |
| Total                     | 11,486,480 | 59142:00   | 16609:03     | 1111:16:00                           | 536:32:00 | 720:59:00 | 9808:12:00 | 28786:02   | 98.11                   | 16.17                      | 87.94                |  |
| Site: PUSHATHUR,TAMILNADU |            |            |              | COIMBATORE TWISTERS PRIVATE LTD      |           |           |            |            |                         | Total WEC : 1              |                      |  |
| CTPLPU-01 (85)            | 1,242,961  | 5888:00:00 | 1793:44:00   | 73:21:00                             | 55:47:00  | 63:17:00  | 891:06:00  | 2877:15:00 | 98.52                   | 17.78                      | 89.08                |  |
| Site: PUSHATHUR,TAMILNADU |            |            |              | PREMIER FINE YARNS PVT LTD           |           |           |            |            |                         | Total WEC : 10             |                      |  |
| PMPLPU-01 (9)             | 1,236,575  | 5852:00:00 | 1622:30:00   | 66:03:00                             | 53:47:00  | 36:12:00  | 1143:00:00 | 2921:32:00 | 98.63                   | 17.69                      | 86.5                 |  |
| PMPLPU-02 (10)            | 1,246,155  | 5968:00:00 | 1510:54:00   | 72:20:00                             | 57:35:00  | 32:29:00  | 1143:00:00 | 2816:18:00 | 98.51                   | 17.83                      | 86.54                |  |
| PMPLPU-03 (4)             | 1,122,295  | 5732:00:00 | 1676:07:00   | 195:31:00                            | 49:05:00  | 22:27     | 1145:34:00 | 3088:44:00 | 97.2                    | 16.06                      | 86.63                |  |
| PMPLPU-04 (5)             | 1,120,537  | 5673:00:00 | 1836:05:00   | 68:59:00                             | 53:15:00  | 23:32     | 1143:22:00 | 3125:13:00 | 98.6                    | 16.03                      | 86.64                |  |
| PMPLPU-05 (17)            | 1,202,798  | 6109:00:00 | 1487:57:00   | 86:52:00                             | 28:57:00  | 28:50:00  | 1030:47:00 | 2663:23:00 | 98.68                   | 17.16                      | 87.9                 |  |
| PMPLPU-06 (20)            | 1,372,518  | 6063:00:00 | 1692:41:00   | 10:59                                | 72:41:00  | 62:17:00  | 860:59:00  | 2699:37:00 | 99.04                   | 19.64                      | 89.43                |  |
| PMPLPU-07 (21)            | 1,294,445  | 6059:00:00 | 1678:18:00   | 34:56:00                             | 37:24:00  | 52:10:00  | 906:20:00  | 2709:08:00 | 99.17                   | 18.47                      | 89.06                |  |
| PMPLPU-08 (22)            | 1,065,841  | 5985:00:00 | 1630:07:00   | 59:18:00                             | 51:24:00  | 20:57     | 1038:12:00 | 2799:58:00 | 98.74                   | 15.21                      | 87.91                |  |
| PMPLPU-09 (23)            | 1,167,237  | 6125:00:00 | 1515:08:00   | 48:48:00                             | 41:52:00  | 23:11     | 1030:47:00 | 2659:46:00 | 98.97                   | 16.66                      | 87.97                |  |
| PMPLPU-10 (29)            | 1,025,924  | 6141:00:00 | 1523:11:00   | 29:35:00                             | 43:42:00  | 18:54     | 1028:58:00 | 2644:20:00 | 99.16                   | 14.64                      | 88.04                |  |
| Total                     | 11,854,325 | 59707:00   | 16172:58     | 673:21:00                            | 489:42:00 | 320:59:00 | 10470:59   | 28127:59   | 98.67                   | 16.94                      | 87.66                |  |
| Site: PUSHATHUR,TAMILNADU |            |            |              | PREMIER SPG AND WEAVING MILLS P. LTD |           |           |            |            |                         | Total WEC : 10             |                      |  |
| PSWMPLPU-01 (89)          | 1,021,473  | 5462:00:00 | 1286:52:00   | 41:33:00                             | 109:18:00 | 49:33:00  | 1859:22:00 | 3346:38:00 | 98.28                   | 14.58                      | 78.21                |  |
| PSWMPLPU-02 (88)          | 1,113,737  | 5591:00:00 | 1256:46:00   | 15:11                                | 36:27:00  | 50:36:00  | 1868:12:00 | 3227:12:00 | 99.41                   | 15.89                      | 78.1                 |  |
| PSWMPLPU-03 (87)          | 1,153,969  | 5621:00:00 | 1204:05:00   | 45:40:00                             | 35:09:00  | 64:02:00  | 1853:46:00 | 3202:42:00 | 99.08                   | 16.47                      | 78.11                |  |
| PSWMPLPU-04 (95)          | 1,140,023  | 6041:00:00 | 1492:45:00   | 177:23:00                            | 34:58:00  | 25:08:00  | 1030:58:00 | 2761:12:00 | 97.58                   | 16.27                      | 87.94                |  |
| PSWMPLPU-05 (32)          | 1,211,235  | 6159:00:00 | 1577:57:00   | 44:10:00                             | 49:43:00  | 62:17:00  | 889:04:00  | 2623:11:00 | 98.93                   | 17.28                      | 89.14                |  |
| PSWMPLPU-06 (47)          | 1,210,235  | 6227:00:00 | 1314:31:00   | 49:34:00                             | 31:54:00  | 65:57:00  | 1094:52:00 | 2556:48:00 | 99.07                   | 17.27                      | 86.75                |  |
| PSWMPLPU-07 (65)          | 1,211,443  | 6184:00:00 | 1367:42:00   | 15:25                                | 57:13:00  | 64:49:00  | 1092:57:00 | 2598:06:00 | 99.17                   | 17.29                      | 86.78                |  |
| PSWMPLPU-08 (2)           | 1,307,234  | 6184:00:00 | 1355:53:00   | 24:40:00                             | 48:26:00  | 23:20     | 1159:59:00 | 2612:18:00 | 99.17                   | 18.65                      | 86.49                |  |
| PSWMPLPU-09 (1)           | 1,224,494  | 5969:00:00 | 1490:46:00   | 99:34:00                             | 39:25:00  | 42:47:00  | 1143:00:00 | 2815:32:00 | 98.41                   | 17.47                      | 86.46                |  |
| PSWMPLPU-10 (3)           | 1,335,424  | 6062:00:00 | 1474:27:00   | 36:19:00                             | 42:22:00  | 28:46:00  | 1143:00:00 | 2724:54:00 | 99.1                    | 19.06                      | 86.62                |  |
| Total                     | 11,929,267 | 59500:00   | 13821:44     | 549:29:00                            | 484:55:00 | 477:15:00 | 13135:10   | 28468:33   | 98.82                   | 17.02                      | 84.46                |  |

## 2.2 Project Description Deviations

The subproject of Bannari Amman Spinning Mills was registered as CDM project on 17-06-2011 (<http://cdm.unfccc.int/Projects/DB/SIRIM1306929016.84/view>). Hence, this subproject has not been monitored.

Thus project capacity has been reduced from 36 MW to 24.8 MW after omission of WTGs belonging to the investor Bannari Amman Spinning Mills.

## 2.3 Grouped Project

Not applicable

## 3 DATA AND PARAMETERS

### 3.1 Data and Parameters Available at Validation

|                        |                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data Unit / Parameter: | <b>EF<sub>OM,y</sub></b>                                                                                                                                                                                                                                                                                                                                                                       |
| Data unit:             | tCO <sub>2</sub> e/MWh                                                                                                                                                                                                                                                                                                                                                                         |
| Description:           | Operating Margin Emission Factor of Southern Regional Electricity Grid                                                                                                                                                                                                                                                                                                                         |
| Source of data:        | “CO <sub>2</sub> Baseline Database for Indian Power Sector” version 4 published by the Central Electricity Authority, Ministry of Power, Government of India.<br>The “CO <sub>2</sub> Baseline Database for Indian Power Sector” version 4 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 applied:         | 0.998157                                                                                                                                                                                                                                                                                                                                                                                       |
| Purpose of the data:   | Baseline Emissions                                                                                                                                                                                                                                                                                                                                                                             |
| Any comment:           | None                                                                                                                                                                                                                                                                                                                                                                                           |

|                        |                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data Unit / Parameter: | <b>EF<sub>BM,y</sub></b>                                                                                                                                                                                                                                                                                                                                                                       |
| 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 4 published by the Central Electricity Authority, Ministry of Power, Government of India.<br>The “CO <sub>2</sub> Baseline Database for Indian Power Sector” version 4 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 applied:         | 0.7133                                                                                                                                                                                                                                                                                                                                                                                         |
| Purpose of the data:   | Baseline Emissions                                                                                                                                                                                                                                                                                                                                                                             |
| Any comment:           | None                                                                                                                                                                                                                                                                                                                                                                                           |

|                        |                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data Unit / Parameter: | <b>EF<sub>CM,y</sub></b>                                                                                                                                                                                                                                                                                                                                                                       |
| Data unit:             | tCO <sub>2</sub> e/MWh                                                                                                                                                                                                                                                                                                                                                                         |
| Description:           | Combined Margin Emission Factor of Southern Grid                                                                                                                                                                                                                                                                                                                                               |
| Source of data:        | “CO <sub>2</sub> Baseline Database for Indian Power Sector” version 4 published by the Central Electricity Authority, Ministry of Power, Government of India.<br>The “CO <sub>2</sub> Baseline Database for Indian Power Sector” version 4 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 applied:         | 0.92694                                                                                                                                                                                                                                                                                                                                                                                        |

|                      |                    |
|----------------------|--------------------|
| Purpose of the data: | Baseline Emissions |
| Any comment:         | None               |

## 3.2 Data and Parameters Monitored

|                                                                  |                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data Unit / Parameter:                                           | <b>EG, Export</b>                                                                                                                                                                                                                                                         |
| Data unit:                                                       | MWh                                                                                                                                                                                                                                                                       |
| Description:                                                     | Electricity exported to the grid                                                                                                                                                                                                                                          |
| Source of data:                                                  | JMR                                                                                                                                                                                                                                                                       |
| Description of measurement methods and procedures to be applied: | The Energy generated at the wind farm will be metered and measured by TNEB on monthly basis at the sending end sub-station of the Wind Farm. The monitoring of 'electricity exported to the grid' would be as per the details provided in wheeling and banking agreement. |
| Frequency of monitoring/recording:                               | Monthly                                                                                                                                                                                                                                                                   |
| Value monitored:                                                 | 35945.531 MWh                                                                                                                                                                                                                                                             |
| Monitoring equipment:                                            | Please refer section 3.3 for details                                                                                                                                                                                                                                      |
| QA/QC procedures to be applied:                                  | QA/QC procedures will be implemented pursuant to agreement with state electricity board. Please refer section 3.3 for details.                                                                                                                                            |
| Calculation method:                                              | This is measured parameter hence not applicable..                                                                                                                                                                                                                         |
| Any comment:                                                     | The data is archived on paper as well as on electronic media; however the data will be kept for two years after the end of the crediting period or the last issuance of VCUs for this project activity, whichever occurs later.                                           |

|                                                                  |                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data Unit / Parameter:                                           | <b>EG, import</b>                                                                                                                                                                                                                                                         |
| Data unit:                                                       | MWh                                                                                                                                                                                                                                                                       |
| Description:                                                     | Electricity imported from the grid                                                                                                                                                                                                                                        |
| Source of data:                                                  | JMR.                                                                                                                                                                                                                                                                      |
| Description of measurement methods and procedures to be applied: | The Energy generated at the wind farm will be metered and measured by TNEB on monthly basis at the sending end sub-station of the Wind Farm. The monitoring of 'electricity exported to the grid' would be as per the details provided in wheeling and banking agreement. |
| Frequency of monitoring/recording:                               | Monthly                                                                                                                                                                                                                                                                   |
| Value monitored:                                                 | 135.119 MWh                                                                                                                                                                                                                                                               |
| Monitoring equipment:                                            | Please refer section 3.3 for details                                                                                                                                                                                                                                      |
| QA/QC procedures to be applied:                                  | QA/QC procedures will be implemented pursuant to agreement with state electricity board. Please refer section 3.3 for details.                                                                                                                                            |
| Calculation method:                                              | This is measured parameter hence not applicable.                                                                                                                                                                                                                          |

|              |                                                                                                                                                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Any comment: | The data is archived on paper as well as on electronic media; however the data will be kept for two years after the end of the crediting period or the last issuance of VCUs for this project activity, whichever occurs later. |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                                  |                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data Unit / Parameter:                                           | <b>EG<sub>y</sub>, net</b>                                                                                                                                                                                                                                                                                                     |
| Data unit:                                                       | MWh (Mega-watt hour)                                                                                                                                                                                                                                                                                                           |
| Description:                                                     | Net electricity supplied to the grid by the Project                                                                                                                                                                                                                                                                            |
| Source of data:                                                  | Calculated from EG <sub>export</sub> and EG <sub>import</sub> as (EG <sub>export</sub> – EG <sub>import</sub> )                                                                                                                                                                                                                |
| Description of measurement methods and procedures to be applied: | Net electricity supplied to the grid will be calculated based on measured values. The Net electricity is recorded as following:<br>EG <sub>y</sub> , net = EG <sub>export</sub> – EG <sub>import</sub><br>The procedures for metering and meter reading will be as per the provisions of the wheeling and banking arrangement. |
| Frequency of monitoring/recording:                               | Monthly                                                                                                                                                                                                                                                                                                                        |
| Value monitored:                                                 | 35810.407 MWh                                                                                                                                                                                                                                                                                                                  |
| Monitoring equipment:                                            | This parameter is calculated.                                                                                                                                                                                                                                                                                                  |
| QA/QC procedures to be applied:                                  | QA/QC procedures will be implemented pursuant to wheeling and banking agreement.                                                                                                                                                                                                                                               |
| Calculation method:                                              | EG <sub>y</sub> , net = EG <sub>export</sub> – EG <sub>import</sub>                                                                                                                                                                                                                                                            |
| Any comment:                                                     | -                                                                                                                                                                                                                                                                                                                              |

### 3.3 Description of the Monitoring Plan

The operational & monitoring structure is shown in the following figure

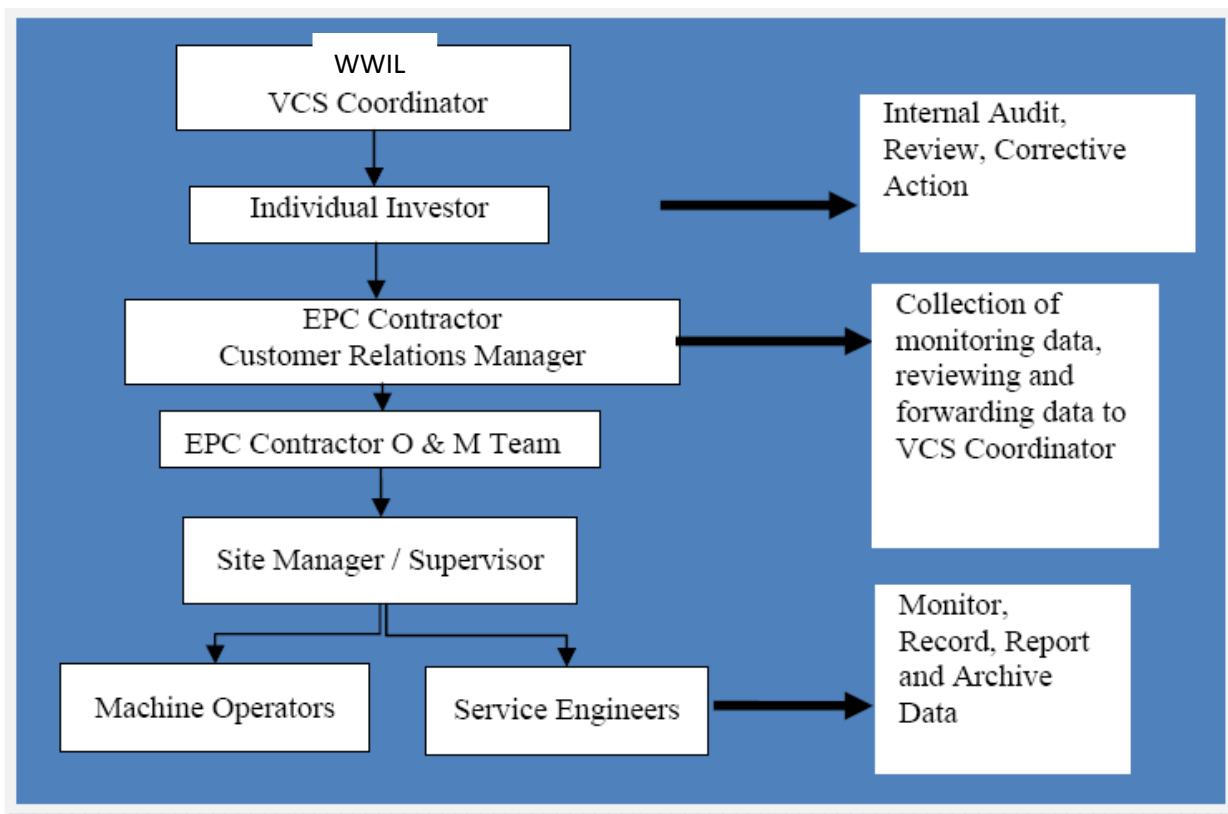
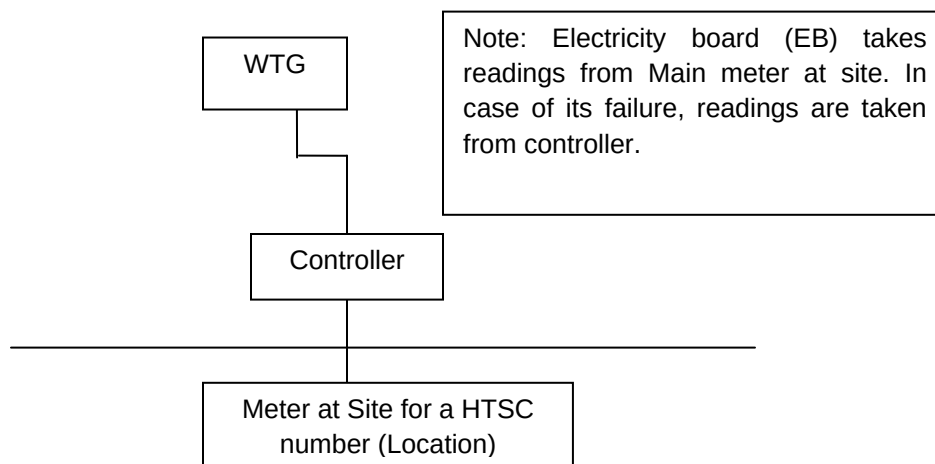


Diagram indicating Data collection leading to GHG calculation



### Monitoring Information:

The general conditions set out for metering, recording, meter readings, meter inspections, Test & Checking and communication are as per the agreement with state electricity board .

**Metering:** Net electricity supplied to grid is calculated based on measured values of electricity export and import. Electricity exported and imported by project are measured through meter readings of the two-way export meter installed by TNEB. The installed meters measure the electricity export and electricity import for each WEG or group of WEGs of the project which are designated by unique identification no. i.e. HT SC No. Project activity has the dedicated metering system and there are no other WEGs connected to the joint meters of the project activity.

**Meter Readings:** The monthly meter reading is taken jointly by the parties (EIL personals and personals of TNEB) for the last month. At the conclusion of each meter reading an appointed representative of TNEB and WWIL sign a document indicating the number of Kilowatt-hours (kWh) indicated by the meter.

**Inspection of Energy Meters:** The two-way export meter and all associated instruments, transformers installed at the project are of accuracy classes as mentioned below in table. The 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 accredited representatives.

**Meter Test Checking:** The meter is tested for accuracy with reference to a portable standard meter. The portable standard meter is also owned by TNEB. The meter is deemed to be working satisfactorily if the errors are within specifications of accuracy classes. The consumption registered by the meter alone holds good for the purpose of metering electricity supplied to the grid as long as the error in the meter is within the permissible limits.

If during the meter test checking, the meter is found to be beyond permissible limits of error, the meter shall be immediately calibrated and the correction applied to the reading registered by the 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 meter.

Meter change details are provided below.

**Archiving of data:** Data shall be archived for crediting period + 2 years.

#### **Metering System:**

A metering equipment is provided besides each location (HT SC No.) although other project proponents are also connected to the substation but individual metering of WEG's help in projecting accurate values of electricity exported. Since each HT SC No. has unique billing meter which is installed and owned by TNEB, hence there is no need of apportioning.

**Metering Equipment:** Metering equipment is electronic trivector meter of accuracy class as mentioned below in table. Dedicated core of both CT's and PT's of required accuracy is made available by the EIL to TNEB.

The meters are calibrated annually to ensure accuracy of data.

#### **Training and maintenance:**

Training on the machine is an essential pre-requisite, to ensure necessary safety of man and machine. Further, in order to maximize the output from the Wind Energy Converters (WECs), it is extremely essential, that the engineers and technicians understand the machines and keep them in good health. In order to ensure, that WWIL's service staff is deft at handling technical snags on top of the turbine, the necessity of ensuring that they are capable of climbing the tower with absolute ease and comfort has been established. The WWIL Training Academy provides need-based training to meet the training requirements of WWIL projects. The training is contemporary,

which results in imparting focused knowledge leading to value addition to the attitude and skills of all trainees. This ultimately leads to creativity in problem solving.

**Calibration Details:**

The metering equipments were inspected & calibrated by state utility. The meters installed at the wind farm are as per TNEB guidelines and accuracy level. The meters are checked for accuracy on a regular basis as per the VCS PD which says that the calibration of meters has to be performed at least once in calendar year. TNEB meter testing is done by a separate division of electricity board, which takes care of meter testing in the event of any abnormality observed:

The meter calibration details are presented below:

| S. No. | Name of Customers               | HTSC No. | Type     | Meter No. | Past Calibration date | Recent Calibration date | Accuracy Class |
|--------|---------------------------------|----------|----------|-----------|-----------------------|-------------------------|----------------|
| 1      | Premier Spg & Wvg Mills Pvt Ltd | D47      | SECURE   | TN905549  | 28-01-2012            | 13-11-2013              | 0.2s           |
| 2      | Premier Spg & Wvg Mills Pvt Ltd | D49      | ELSTER   | 04890022  | 28-01-2012            | 12-11-2013              | 0.5s           |
| 3      | Premier Spg & Wvg Mills Pvt Ltd | D52      | SECURE   | TN902732  | 09-12-2011            | 13-11-2013              | 0.2s           |
| 4      | Premier Spg & Wvg Mills Pvt Ltd | D54      | ELSTER   | 04865534  | 28-01-2012            | 13-11-2013              | 0.5s           |
| 5      | Premier Spg & Wvg Mills Pvt Ltd | D79      | ELSTER   | 04865507  | 28-01-2012            | 13-11-2013              | 0.5s           |
| 6      | Premier Spg & Wvg Mills Pvt Ltd | D80      | SECURE   | TNB02400  | 28-01-2012            | 13-11-2013              | 0.5s           |
| 7      | Premier Spg & Wvg Mills Pvt Ltd | D81      | ELSTER   | 04865535  | 28-01-2012            | 13-11-2013              | 0.5s           |
| 8      | Premier Spg & Wvg Mills Pvt Ltd | D82      | SECURE   | TN905507  | 27-01-2012            | 12-11-2013              | 0.2s           |
| 9      | Premier Spg & Wvg Mills Pvt Ltd | D83      | ELSTER   | 04865503  | 27-01-2012            | 12-11-2013              | 0.5s           |
| 10     | Premier Spg & Wvg Mills Pvt Ltd | D84      | SECURE   | TN903448  | 27-01-2012            | 12-11-2013              | 0.2s           |
| 11     | Premier Fine Yarns Pvt Ltd      | D26      | SECURE   | TN902742  | 22-11-2011            | 12-11-2013              | 0.2s           |
| 12     | Premier Fine Yarns Pvt Ltd      | D27      | SECURE   | TN905284  | 27-01-2012            | 12-11-2013              | 0.2s           |
| 13     | Premier Fine Yarns Pvt Ltd      | D28      | L&T      | 10287910  | 27-01-2012            | 12-11-2013              | 0.5s           |
| 14     | Premier Fine Yarns Pvt Ltd      | D29      | WALLAB Y | HT5100083 | 27-01-2012            | 12-11-2013              | 0.5s           |
| 15     | Premier Fine Yarns Pvt Ltd      | D30      | WALLAB Y | HT5110137 | 27-01-2012            | 12-11-2013              | 0.5s           |
| 16     | Premier Fine Yarns Pvt Ltd      | D30      | WALLAB Y | HT5110137 | 27-01-2012            | 12-11-2013              | 0.5s           |
| 17     | Premier Fine Yarns Pvt Ltd      | D32      | SECURE   | TN903995  | 27-01-2012            | 12-11-2013              | 0.2s           |
| 18     | Premier Fine Yarns Pvt Ltd      | D32      | SECURE   | TN903995  | 27-01-2012            | 12-11-2013              | 0.2s           |

| S. No. | Name of Customers                  | HTSC No. | Type     | Meter No. | Past Calibration date | Recent Calibration date | Accuracy Class |
|--------|------------------------------------|----------|----------|-----------|-----------------------|-------------------------|----------------|
| 19     | Premier Fine Yarns Pvt Ltd         | D33      | ELSTER   | 04863762  | 27-01-2012            | 12-11-2013              | 0.5s           |
| 20     | Premier Fine Yarns Pvt Ltd         | D34      | SECURE   | TN904584  | 27-01-2012            | 12-11-2013              | 0.2s           |
| 21     | Coimbatore Twisted (Premier Mills) | D37      | SECURE   | TN904565  | 27-01-2012            | 12-11-2013              | 0.2s           |
| 22     | Coimbatore Polytex (Premier Mills) | D38      | ELSTER   | 04865383  | 27-01-2012            | 13-11-2013              | 0.5s           |
| 23     | Coimbatore Polytex (Premier Mills) | D43      | ELSTER   | 04865533  | 27-01-2012            | 12-11-2013              | 0.5s           |
| 24     | Coimbatore Polytex (Premier Mills) | D43      | ELSTER   | 04865533  | 27-01-2012            | 12-11-2013              | 0.5s           |
| 25     | Coimbatore Polytex (Premier Mills) | D44      | SECURE   | TN903449  | 27-01-2012            | 13-11-2013              | 0.2s           |
| 26     | Coimbatore Polytex (Premier Mills) | D45      | SECURE   | TN903117  | 27-01-2012            | 13-11-2013              | 0.2s           |
| 27     | Coimbatore Polytex (Premier Mills) | D68      | SECURE   | TN905537  | 28-01-2012            | 13-11-2013              | 0.2s           |
| 28     | Coimbatore Polytex (Premier Mills) | D73      | ELSTER   | 04959599  | 28-01-2012            | 13-11-2013              | 0.5s           |
| 29     | Coimbatore Polytex (Premier Mills) | D74      | ELSTER   | 04865530  | 27-01-2012            | 13-11-2013              | 0.5s           |
| 30     | Coimbatore Polytex (Premier Mills) | D75      | SECURE   | TN901783  | 18-10-2011            | 13-11-2013              | 0.2s           |
| 31     | Coimbatore Polytex (Premier Mills) | D78      | WALLAB Y | 208320441 | 28-01-2012            | 13-11-2013              | 0.5s           |

As there was delay in calibration as shown above, the correction factors has been applied conservatively as per EB 52 annex 60; as follows:

|                                                       |                                                  |
|-------------------------------------------------------|--------------------------------------------------|
| For customers from serial no. 1 to 20 in above table  | Correction applied in months of Dec-12 to Sep-13 |
| For customers from serial no. 21                      | Correction applied in months of Feb-13 to Sep-13 |
| For customers from serial no. 22 to 31 in above table | Correction applied in months of Nov-12 to Sep-13 |

Meter change details in current monitoring period are as follows:

| Name of Customers               | HTSC No. | Old Meter no. | New Meter No. | Meter change date (Reason for meter change) | Reference document                                                   |
|---------------------------------|----------|---------------|---------------|---------------------------------------------|----------------------------------------------------------------------|
| Premier Fine Yarns Pvt Ltd      | D27      | 0865401       | TN905284      | 19-04-2013 (upgraded accuracy class)        | EE/WFP/AEE/MRT/Udt/F.WF SC.NO D 27/D.NO.:431/13, Date:27-04-2013     |
| Coimbatore Polytex Pvt Ltd      | D45      | 0865528       | TN903117      | 02-02-2012 (No display in meter)            | EE/WFP/AEE/MRT/Udt/F.WF SC.NO D 45/D.NO.:182/12, Date:08-02-2012     |
| Premier Spg & Wvg Mills Pvt Ltd | D47      | 04863754      | TN905549      | 23-10-2013 (No display in meter)            | EE/WFP/AEE/MRT/Udt/F.WF SC.NO D 47 /D.NO.:1120/2013, Date:26-10-2013 |
| Premier Fine Yarns Pvt Ltd      | D68      | 0865501       | TN905537      | 25-07-2013 (No display in meter)            | EE/WFP/AEE/MRT/Udt/F.WF SC.NO D 68/D.NO.:868/2013, Date:31-07-2013   |
| Premier Spg & Wvg Mills Pvt Ltd | D82      | 0865504       | TN905507      | 10-09-2013 (No display in meter)            | EE/WFP/AEE/MRT/Udt/F.WF SC.NO D 82 /D.NO.:988/13, Date:13-09-2013    |
| Premier Spg & Wvg Mills Pvt Ltd | D84      | 0865505       | TN903448      | 17-10-2012 (No display in meter)            | EE/WFP/AEE/MRT/Udt/F.WF SC.NO D 84 /D.NO.:1701/12, Date:31-10-2012   |

## 4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

### 4.1 Baseline Emissions

The baseline is:

$$BE_y = EG_y * EF_y$$

Where,

**BE** 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 JMR 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 (0.92694 tCO<sub>2</sub>e/MWh fixed ex-ante).

The baseline Emission reduction calculation for the current monitoring period is

$$\begin{aligned} \text{Baseline Emissions} &= 35810.407 \text{ (MWh)} * 0.92694 \text{ (tCO}_2\text{/MWh)} \\ &= 33190 \text{ tCO}_2 \text{ (approx.)} \end{aligned}$$

### 4.2 Project Emissions

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

## 4.3 Leakage

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

## 4.4 Summary of GHG Emission Reductions and Removals

Total baseline emissions: 33190 tCO<sub>2</sub>

Total project emissions: Zero

Total leakage: Zero

Total Emission reductions, ER = BEy – PEy - LEy

= 33190 – 0-0

= 33190 tCO<sub>2</sub>

The total emission reductions achieved during the monitoring period is 33190 tCO<sub>2</sub>.

| Vintage                 | VCUs (tCO <sub>2</sub> ) |
|-------------------------|--------------------------|
| 2012 (Oct-12 to Dec-12) | 4120                     |
| 2013 (Jan-13 to Sep-13) | 29070                    |
| <b>Total</b>            | 33190                    |

## 5 ADDITIONAL INFORMATION

(a) The subproject of Bannari Amman Spinning Mills was registered as CDM project on 17-06-2011 (<http://cdm.unfccc.int/Projects/DB/SIRIM1306929016.84/view>). With this subproject, the project activity capacity was 36 MW.

(b) For the monitoring period under consideration, the PLF of the project activity was observed as follows:

| Ex-ante PLF as per VCS PD annually | Actual PLF during Monitoring Period annually |
|------------------------------------|----------------------------------------------|
| 23.86%                             | 16.87%                                       |

The actual PLF observed during monitoring period is lesser than the PLF estimated in VCS PD, so actual emission reductions are lesser than estimated one.

(c) The billing cycle is from 15<sup>th</sup> day of one month to 15<sup>th</sup> day of next month and title of billing month has been referred as the month where final meter reading have been taken.