

# GUOHUA WULATE ZHONGQI CHUANJING PHASE II WIND FARM PROJECT

Document Prepared By Beijing Ruifang Technology Co., Ltd.

|                          |                                                            |
|--------------------------|------------------------------------------------------------|
| <b>Project Title</b>     | Guohua Wulate Zhongqi Chuanjing Phase II Wind Farm Project |
| <b>Version</b>           | 2.0                                                        |
| <b>Report ID</b>         | /                                                          |
| <b>Date of Issue</b>     | 17/11/2019                                                 |
| <b>Project ID</b>        | VCS1200                                                    |
| <b>Monitoring Period</b> | 21/01/2014 to 31/10/2019                                   |
| <b>Prepared By</b>       | Beijing Ruifang Technology Co., Ltd.                       |
| <b>Contact</b>           | Haidian District, Beijing, PRC China. Teng_hp@126.com      |

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## 1 PROJECT DETAILS

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

Guohua Wulate Zhongqi Chuanjing Phase II Wind Farm Project (hereinafter referred to as “the Project”) is located in Wulate Zhongqi, Bayannaoer City, Inner Mongolia Autonomous Region, P.R. China. The total installed capacity of the Project is 49.5MW with 33 sets of turbines and a unit capacity of 1,500kW.

The objective of the Project is to utilize the wind power for generating electricity which is sold into the North China Power Grid (NCPG). The estimated on-grid electricity supply to the NCPG is 129,580 MWh/year, reduce emissions of greenhouse gas by replacing the electricity from the NCPG.

The starting date of the construction was 12/06/2009. The first turbine started operation on 22/11/2009. All the turbines were operation on 15/12/2009.

This VCS monitoring period covered the time from 21/01/2014 to 31/10/2019 and the emission reductions are 807,275 tCO<sub>2</sub>e.

### 1.2 Sectoral Scope and Project Type

According to UNFCCC sectoral scopes definition for CDM projects, the Project Activity is included in the Sectoral Scope 1, category “Energy industries (renewable - / non- renewable sources)”.

The project is a single Greenfield project and is not part of a project group or bundle.

### 1.3 Project Proponent

|                   |                                                                       |
|-------------------|-----------------------------------------------------------------------|
| Organization name | Guohua Bayannaoer (Wulate Zhongqi) Wind Power Co., Ltd.               |
| Contact person    | Li Jia                                                                |
| Title             | Manager                                                               |
| Address           | No.3 South Road of Dongzhimen, Dongcheng District, Beijing, P.R.China |
| Telephone         | +86-10-58151713                                                       |
| Email             | lijia@guohua.com.cn                                                   |

### 1.4 Other Entities Involved in the Project

|                   |                                      |
|-------------------|--------------------------------------|
| Organization name | Beijing Ruifang Technology Co., Ltd. |
| Contact person    | Teng Haipeng                         |
| Title             | Manager                              |

|           |                                      |
|-----------|--------------------------------------|
| Address   | Haidian District, Beijing, PRC China |
| Telephone | +86-10-86291231                      |
| Email     | Teng_hp@126.com                      |

### 1.5 Project Start Date

This project starts on 22/11/2009.

### 1.6 Project Crediting Period

The first CDM crediting period is from 05/01/2011 to 04/01/2018, which could be renewed twice. Therefore, the total CDM crediting period is from 05/01/2011 to 04/01/2032.

The first monitoring period that apply for issue under VCS scheme started on 01/12/2009. Therefore, the first VCS crediting period of the Project is from 01/12/2009 to 30/11/2019 (10 years), which could be renewed twice. While according to VCS standard, the total crediting period could be expired on 04/01/2032.

### 1.7 Project Location

The project is located in the Wulate Zhongqi, Bayannaoer City, Inner Mongolia Autonomous Region, People's Republic of China. The central geographic coordinates of the project location are north latitude 41°33'54'' and east longitude 108°31'31''. Figure 1 is the geographic location of the project.



Figure 1. Project location

### 1.8 Title and Reference of Methodology

The approved consolidated baseline and monitoring methodology ACM0002 "Consolidated methodology for grid-connected electricity generation from renewable sources", Version 11.

<http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html>

## 1.9 Other Programs

This project has been registered as a CDM project on 05/01/2011, and the registration number is 4303. The project has not claimed any other forms of environment credit. It has once issued carbon credits under CDM mechanism with monitoring period from 05/01/2011 to 20/01/2014.

## 1.10 Sustainable Development

As wind resource employed for power generation is a clean and renewable energy, the project will contribute to the local sustainable development in the following aspects:

The development of the proposed project will help reduce GHG emission and other pollutants compared with fossil fuel fired power generation.

The construction and operation of the proposed project will increase the local employment, improving living conditions of local people.

The development of the proposed project will also contribute to the improvement of local power system structure and the promotion of renewable energy's utilization.

## 2 IMPLEMENTATION STATUS

### 2.1 Implementation Status of the Project Activity

This project installs 33 sets of wind turbines with a unit capacity of 1.5MW will be installed for the project, providing a total capacity of 49.5MW.

The annual electricity delivered to the grid is 129,580 MWh.

The key technical specifications of the wind turbines are as follows:

|           | Parameter             | Value    |
|-----------|-----------------------|----------|
| Blade     | Diameter              | 77m      |
|           | Hub height            | 65m      |
|           | Rated power           | 1500KW   |
|           | Cut-in wind speed     | 3m/s     |
|           | Cut-out wind speed    | 25m/s    |
|           | Rated wind speed      | 14 m/s   |
|           | Designed product life | 20 years |
| Generator | Capacity              | 1500KW   |
|           | Voltage               | 690V     |

All equipments used in the project are domestically-made and there is no international technology transfer.

During this monitoring period, the Project operated in normal and there was no overhaul or emergencies.

### 2.2 Deviations

### 2.2.1 Methodology Deviations

No deviation in this monitoring period

### 2.2.2 Project Description Deviations

There is a deviation for the crediting period.

The first CDM crediting period is from 05/01/2011 to 04/01/2018, which could be renewed twice. Therefore, the total CDM crediting period is from 05/01/2011 to 04/01/2032.

The first monitoring period that apply for issue under VCS scheme starts on 01/12/2009. Therefore, the VCS crediting period start date is changed from 05/01/2011 to 01/12/2009. The first VCS crediting period is from 01/12/2009 to 30/11/2019 (10 years), which could be renewed twice. And according to VCS standard, the total crediting period could be expired on 04/01/2032.

## 2.3 Grouped Project

N/A

## 2.4 Safeguards

### 2.4.1 No Net Harm

The project uses wind to generate electricity. It is environmentally friendly and there is no harm to the environment.

Environmental Impact Assessment (EIA) has been performed by qualified third party and approved by Environmental Protection Bureau of Inner Mongolia. Through the assessment of the EIA, this project has no harm to environment. The detail could be referenced from section D.1 of the registered CDM PDD.

Therefore, no net harm is generated in this project.

### 2.4.2 Local Stakeholder Consultation

In order to collect opinions from the stakeholder, the project owner held stakeholders' comment meeting in Wulate Zhongqi, Bayannaoer city, Inner Mongolia Autonomous Region, on 18/09/2008 after introduced the proposed project to them through poster and broadcast. Respondents included local residents, officials, engineers, workers and so on. The meeting consisted of four parts, which were summarized as follows:

1. Basic information introduction of the proposed project;
2. Introduction of CDM basic concept;
3. Free discussion, and;

#### 4. Questionnaires survey.

The main content of the questionnaire is shown as follows:

##### A. Brief introduction of the proposed project

##### B. Basic knowledge of CDM

##### C. Information to be collected

##### (a) Basic information of the informants

##### (b) Questions to be surveyed

1) Acquaintance of the proposed project (Know; Know a little; Not at all);

2) Impacts of the proposed project on local economic development (Promote; Slow down; Little impact);

3) Impacts of the proposed project on the livelihood of the residents (Benefit; Disbenefit; No impact);

4) Appropriateness of the project location (Appropriate; Not appropriate; Doesn't matter);

5) The impacts of the proposed project on the local environment (Benefit; No impact; Disbenefit);

6) Attitude towards the proposed project (Agree; Disagree; Doesn't matter);

7) Other opinions to give

##### D. The inquirer and the date

The forum issued a total of 28 copies of the questionnaire. According with the result of the survey, all the residents agree and support the implementation of the proposed project.

Besides, no comment was received in this monitoring period.

## 3 DATA AND PARAMETERS

### 3.1 Data and Parameters Available at Validation

|                                                   |                                                                                                                          |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                  | EG <sub>y</sub>                                                                                                          |
| Data unit                                         | KWh                                                                                                                      |
| Description                                       | Power Generation in each province of NCPG                                                                                |
| Source of data                                    | China Electric Power Yearbook 2006-2008                                                                                  |
| Value applied                                     | The value is listed in the registered PDD.                                                                               |
| Justification of choice of data or description of | China Electric Power Yearbook is published by the editorial board of China Electric Power Yearbook, which is authorized. |

|                                            |                                 |
|--------------------------------------------|---------------------------------|
| measurement methods and procedures applied |                                 |
| Purpose of the data                        | Calculation of $EF_{grid,CM,y}$ |
| Comments                                   | /                               |

|                                                                                              |                                                                                                                          |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | Self- consumption rate of electricity                                                                                    |
| Data unit                                                                                    | %                                                                                                                        |
| Description                                                                                  | Self- consumption rate of electricity in each province of NCPG                                                           |
| Source of data                                                                               | China Electric Power Yearbook 2006-2008                                                                                  |
| Value applied                                                                                | The value is listed in the registered PDD.                                                                               |
| Justification of choice of data or description of measurement methods and procedures applied | China Electric Power Yearbook is published by the editorial board of China Electric Power Yearbook, which is authorized. |
| Purpose of the data                                                                          | Calculation of $EF_{grid,CM,y}$                                                                                          |
| Comments                                                                                     | /                                                                                                                        |

|                                                                                              |                                                                                                                          |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | Installed Capacity                                                                                                       |
| Data unit                                                                                    | KW                                                                                                                       |
| Description                                                                                  | Installed capacity in each province of NCPG                                                                              |
| Source of data                                                                               | China Electric Power Yearbook 2006-2008                                                                                  |
| Value applied                                                                                | The value is listed in the registered PDD.                                                                               |
| Justification of choice of data or description of measurement methods and procedures applied | China Electric Power Yearbook is published by the editorial board of China Electric Power Yearbook, which is authorized. |
| Purpose of the data                                                                          | Calculation of $EF_{grid,CM,y}$                                                                                          |
| Comments                                                                                     | /                                                                                                                        |

|                  |                                                                                                                                                                                                              |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter | $FC_{Adv, coal}$                                                                                                                                                                                             |
| Data unit        | Gce/kWh                                                                                                                                                                                                      |
| Description      | The coal consumption of power supply with the best thermal power technology commercially available.                                                                                                          |
| Source of data   | Bulletin about determining the Emission factors of Chinese Power Grids.<br><a href="http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2333.pdf">http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2333.pdf</a> |
| Value applied    | 322.5                                                                                                                                                                                                        |

|                                                                                              |                                   |
|----------------------------------------------------------------------------------------------|-----------------------------------|
| Justification of choice of data or description of measurement methods and procedures applied | Authoritative government bulletin |
| Purpose of the data                                                                          | Calculation of $EF_{grid,CM,y}$   |
| Comments                                                                                     | /                                 |

|                                                                                              |                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | $FC_{Adv, Oil, FC_{Adv, Gas}}$                                                                                                                                                                               |
| Data unit                                                                                    | Gce/kWh                                                                                                                                                                                                      |
| Description                                                                                  | The oil, gas consumption of power supply with the best oil and gas fired power plant technology commercially available.                                                                                      |
| Source of data                                                                               | Bulletin about determining the Emission factors of Chinese Power Grids.<br><a href="http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2333.pdf">http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2333.pdf</a> |
| Value applied                                                                                | 246                                                                                                                                                                                                          |
| Justification of choice of data or description of measurement methods and procedures applied | Authoritative government bulletin                                                                                                                                                                            |
| Purpose of the data                                                                          | Calculation of $EF_{grid,CM,y}$                                                                                                                                                                              |
| Comments                                                                                     | /                                                                                                                                                                                                            |

|                                                                                              |                                                                                               |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | $FC_{i,y}$                                                                                    |
| Data unit                                                                                    | 104 t or 108m <sup>3</sup>                                                                    |
| Description                                                                                  | Amount of fossil fuel type i consumed in the project electricity system in year y.            |
| Source of data                                                                               | China Energy Statistics Yearbook 2006-2008                                                    |
| Value applied                                                                                | The data is shown in the registered PDD.                                                      |
| Justification of choice of data or description of measurement methods and procedures applied | China Energy Statistics Yearbook is published by China Statistics Press, which is authorized. |
| Purpose of the data                                                                          | Calculation of $EF_{grid,CM,y}$                                                               |
| Comments                                                                                     | /                                                                                             |

|                  |                                                                      |
|------------------|----------------------------------------------------------------------|
| Data / Parameter | $NCV_{i,y}$                                                          |
| Data unit        | GJ/mass or volume unit                                               |
| Description      | Net calorific value (energy content) of fossil fuel type i in year y |
| Source of data   | China Energy Statistics Yearbook 2006-2008                           |

|                                                                                              |                                                                                               |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Value applied                                                                                | The data is shown in the registered PDD.                                                      |
| Justification of choice of data or description of measurement methods and procedures applied | China Energy Statistics Yearbook is published by China Statistics Press, which is authorized. |
| Purpose of the data                                                                          | Calculation of $EF_{grid,CM,y}$                                                               |
| Comments                                                                                     | /                                                                                             |

|                                                                                              |                                                                                           |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| Data / Parameter                                                                             | $EF_{CO2,i,y}$                                                                            |
| Data unit                                                                                    | tCO <sub>2</sub> /GJ                                                                      |
| Description                                                                                  | CO <sub>2</sub> Emission Factor of fossil fuel type i in year y                           |
| Source of data                                                                               | 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Volume 2, Chapter 1, p1.23) |
| Value applied                                                                                | The data is listed in the registered PDD.                                                 |
| Justification of choice of data or description of measurement methods and procedures applied | The default value of IPCC.                                                                |
| Purpose of the data                                                                          | Calculation of $EF_{grid,CM,y}$                                                           |
| Comments                                                                                     | /                                                                                         |

### 3.2 Data and Parameters Monitored

|                                                                 |                                                                                                                                                                                                 |
|-----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter                                                | $EG_{facility,y}$                                                                                                                                                                               |
| Data unit                                                       | MWh                                                                                                                                                                                             |
| Description                                                     | The net electricity supplied by the project activity to the grid in year y                                                                                                                      |
| Source of data                                                  | Electricity meter                                                                                                                                                                               |
| Description of measurement methods and procedures to be applied | Calculated by $EG_{export,y} - EG_{import,y}$<br>The electricity exported and imported is monitored by the electricity meter and recorded by working staff. then crosscheck with sales receipt. |
| Frequency of monitoring/recording                               | Monitoring continuously and recorded monthly                                                                                                                                                    |
| Value monitored                                                 | 849,586.150 (net electricity supplied to the grid in this monitoring period)                                                                                                                    |
| Monitoring equipment                                            | There are two electricity meters. and detail information ia in following table.                                                                                                                 |
| QA/QC procedures to be applied                                  | The metering equipment are calibrated and checked for accuracy periodically (once a year) according to the industry standards so that the metering equipment shall have sufficient accuracy.    |

|                     |                                   |                  |            |          |
|---------------------|-----------------------------------|------------------|------------|----------|
|                     | Serial No.                        | Calibration date | valid      | Accuracy |
|                     | LY807324(M1)                      | 06/01/2014       | 05/01/2015 | 0.5s     |
|                     |                                   | 30/12/2014       | 29/12/2015 | 0.5s     |
|                     |                                   | 23/12/2015       | 22/12/2016 | 0.5s     |
|                     |                                   | 16/12/2016       | 15/12/2017 | 0.5s     |
|                     |                                   | 11/12/2017       | 10/12/2018 | 0.5s     |
|                     |                                   | 05/12/2018       | 04/12/2019 | 0.5s     |
|                     | LY807185(M2)                      | 06/01/2014       | 05/01/2015 | 0.5s     |
|                     |                                   | 30/12/2014       | 29/12/2015 | 0.5s     |
|                     |                                   | 23/12/2015       | 22/12/2016 | 0.5s     |
|                     |                                   | 16/12/2016       | 15/12/2017 | 0.5s     |
|                     |                                   | 11/12/2017       | 10/12/2018 | 0.5s     |
|                     |                                   | 05/12/2018       | 04/12/2019 | 0.5s     |
| Purpose of the data | Calculation of baseline emissions |                  |            |          |
| Calculation method  | /                                 |                  |            |          |
| Comments            | /                                 |                  |            |          |

|                                                                 |                                                                                                                                                                                              |                  |            |          |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|----------|
| Data / Parameter                                                | EG <sub>import,y</sub>                                                                                                                                                                       |                  |            |          |
| Data unit                                                       | MWh                                                                                                                                                                                          |                  |            |          |
| Description                                                     | Electricity consumed by the project which is imported from the NCPG in year y.                                                                                                               |                  |            |          |
| Source of data                                                  | Electricity meter                                                                                                                                                                            |                  |            |          |
| Description of measurement methods and procedures to be applied | The electricity imported is monitored by the electricity meter and recorded by working staff.                                                                                                |                  |            |          |
| Frequency of monitoring/recording                               | Monitoring continuously and recorded monthly                                                                                                                                                 |                  |            |          |
| Value monitored                                                 | 3367.700 (total imported electricity from grid in this monitoring period)                                                                                                                    |                  |            |          |
| Monitoring equipment                                            | Electricity meters and the detail is in following table                                                                                                                                      |                  |            |          |
| QA/QC procedures to be applied                                  | The metering equipment are calibrated and checked for accuracy periodically (once a year) according to the industry standards so that the metering equipment shall have sufficient accuracy. |                  |            |          |
|                                                                 | Serial No.                                                                                                                                                                                   | Calibration date | valid      | Accuracy |
|                                                                 | LY807324(M1)                                                                                                                                                                                 | 06/01/2014       | 05/01/2015 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 30/12/2014       | 29/12/2015 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 23/12/2015       | 22/12/2016 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 16/12/2016       | 15/12/2017 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 11/12/2017       | 10/12/2018 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 05/12/2018       | 04/12/2019 | 0.5s     |
|                                                                 | LY807185(M2)                                                                                                                                                                                 | 06/01/2014       | 05/01/2015 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 30/12/2014       | 29/12/2015 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 23/12/2015       | 22/12/2016 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 16/12/2016       | 15/12/2017 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 11/12/2017       | 10/12/2018 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 05/12/2018       | 04/12/2019 | 0.5s     |

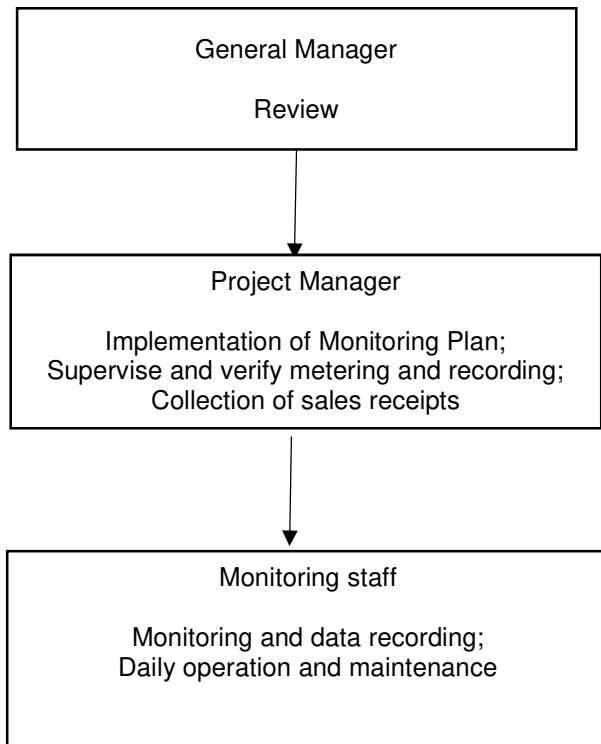
|                     |                                   |            |            |      |  |
|---------------------|-----------------------------------|------------|------------|------|--|
|                     |                                   | 05/12/2018 | 04/12/2019 | 0.5s |  |
| Purpose of the data | Calculation of baseline emissions |            |            |      |  |
| Calculation method  | /                                 |            |            |      |  |
| Comments            | /                                 |            |            |      |  |

|                                                                 |                                                                                                                                                                                              |                  |            |          |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------|----------|
| Data / Parameter                                                | EG <sub>export,y</sub>                                                                                                                                                                       |                  |            |          |
| Data unit                                                       | MWh                                                                                                                                                                                          |                  |            |          |
| Description                                                     | Electricity delivered to NCPG by the project in year y.                                                                                                                                      |                  |            |          |
| Source of data                                                  | Electricity meter                                                                                                                                                                            |                  |            |          |
| Description of measurement methods and procedures to be applied | The electricity exported to the grid is monitored and measured by two electricity meters installed at the on-site substation.                                                                |                  |            |          |
| Frequency of monitoring/recording                               | Monitoring continuously and recorded monthly                                                                                                                                                 |                  |            |          |
| Value monitored                                                 | 852953.850(total exported electricity to grid in this monitoring period)                                                                                                                     |                  |            |          |
| Monitoring equipment                                            | There are two electricity meters and the detail information is in the following table.                                                                                                       |                  |            |          |
| QA/QC procedures to be applied                                  | The metering equipment are calibrated and checked for accuracy periodically (once a year) according to the industry standards so that the metering equipment shall have sufficient accuracy. |                  |            |          |
|                                                                 | Serial No.                                                                                                                                                                                   | Calibration date | valid      | Accuracy |
|                                                                 | LY807324(M1)                                                                                                                                                                                 | 06/01/2014       | 05/01/2015 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 30/12/2014       | 29/12/2015 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 23/12/2015       | 22/12/2016 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 16/12/2016       | 15/12/2017 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 11/12/2017       | 10/12/2018 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 05/12/2018       | 04/12/2019 | 0.5s     |
|                                                                 | LY807185(M2)                                                                                                                                                                                 | 06/01/2014       | 05/01/2015 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 30/12/2014       | 29/12/2015 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 23/12/2015       | 22/12/2016 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 16/12/2016       | 15/12/2017 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 11/12/2017       | 10/12/2018 | 0.5s     |
|                                                                 |                                                                                                                                                                                              | 05/12/2018       | 04/12/2019 | 0.5s     |
| Purpose of the data                                             | Calculation of baseline emissions                                                                                                                                                            |                  |            |          |
| Calculation method                                              | /                                                                                                                                                                                            |                  |            |          |
| Comments                                                        | /                                                                                                                                                                                            |                  |            |          |

### 3.3 Monitoring Plan

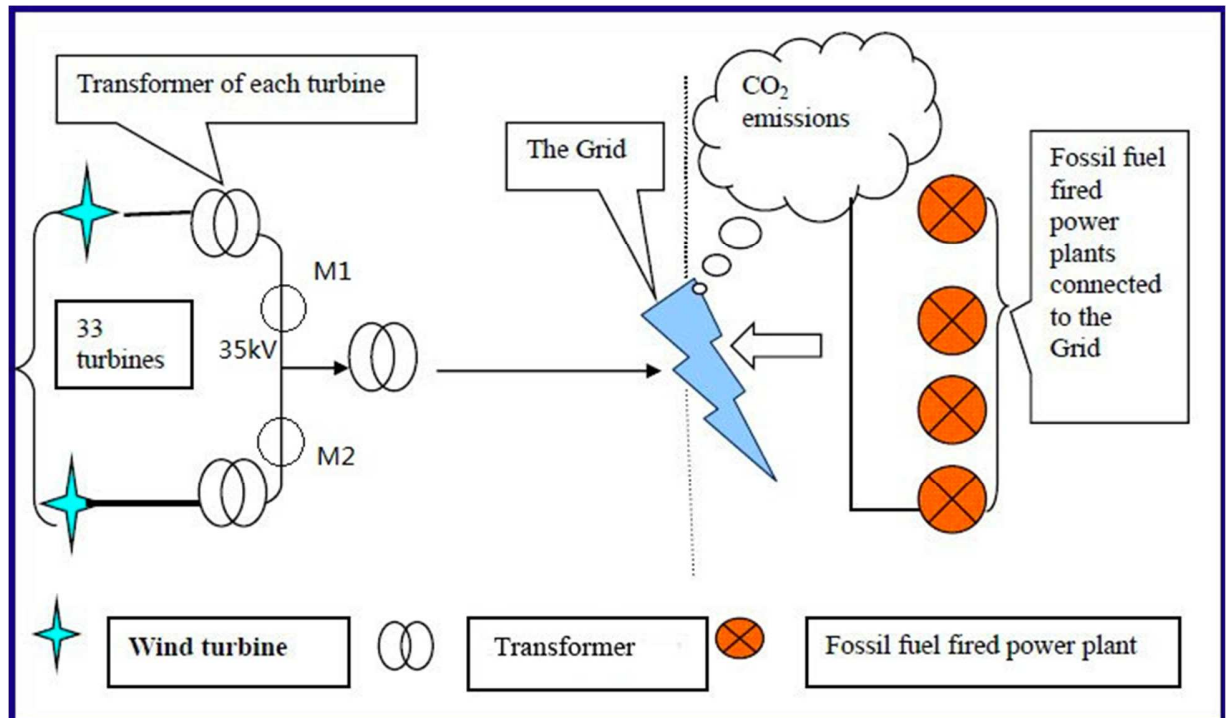
#### 1. Monitoring system organization

The project monitoring organization is as follows:



2. Monitoring apparatus and installation

Electricity delivered to NCPG by the Project ( $EG_{\text{export}, y}$ ) and electricity consumed by the Project which is imported from the NCPG ( $EG_{\text{import}, y}$ ) are measured continuously by M1 and M2. The positions of the meters are showed as Figure 2. The electricity exported to the NCPG by the Project and electricity imported by the Project from the NCPG will be crosschecked with sales receipt.



### 3. Calibration of Meters & Metering

An agreement was signed between the proposed project owner and the local grid company that defines the metering arrangements and the required quality control procedures to ensure accuracy.

Calibration was carried out by the local qualified third party according to relevant regulations of electric industry.

### 4. Data monitoring

The readings of two meters installed in parallel connection in the Project activity site are used for calculating the emission reductions. The monitoring process is as follows:

The data is measured continuously and recorded monthly;

The grid company and the project owner check the exported and imported electricity, and then issue sales receipt;

The project owner provided DOE with record of net power generation data and copies of sales receipts

### 5. Quality assurances and quality control

The electricity meters are calibrated according to national standards. All the data are recorded and reviewed by project manager. The monitoring process is strictly according to the monitoring plan.

### 6. Data Management system

All monitoring data and records were archived in electronic documents as well as in paper. The electronic documents were backed up in compact disc or hard disc form. The project owner also kept the copies of sale receipts and prepared this monitoring report.

#### 7. Training program

All the related staffs were trained. The training contained operational regulations, quality control (QC) standard, data monitoring and data management.

## 4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

### 4.1 Baseline Emissions

According to latest ACM0002 (Version 11), the baseline emissions calculated as follows:

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y} = EG_{facility,y} * EF_{grid,CM,y} = (EG_{export,y} - EG_{import,y}) * EF_{grid,CM,y}$$

Where:

|                   |                                                                                                                                                                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $BE_y$            | Baseline emissions in year y (tCO <sub>2</sub> /yr)                                                                                                                                                                                                                   |
| $EG_{PJ,y}$       | Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)                                                                                                        |
| $EG_{facility,y}$ | The net electricity supplied by the Project activity to the grid in year y (MWh),                                                                                                                                                                                     |
| $EG_{export,y}$   | Electricity delivered to NCPG by the Project in year y (MWh)                                                                                                                                                                                                          |
| $EG_{import,y}$   | Electricity consumed by the Project which is imported from the NCPG in year y (MWh)                                                                                                                                                                                   |
| $EF_{grid,CM,y}$  | Combined margin CO <sub>2</sub> emission factor for NCPG which is ex-ante determined in the CDM-PDD and fixed in the crediting period, tCO <sub>2</sub> e/MWh. The baseline emission factor $EF_{grid,CM,y}$ is 0.9502 tCO <sub>2</sub> /MWh. (tCO <sub>2</sub> /MWh) |

The ER vintage and monitoring values are as follows.

| vintage                                                                | $EG_{facility,y}$ (MWh) | $EF_{grid,CM,y}$ (tCO <sub>2</sub> /MWh) | $BE_y$ (tCO <sub>2</sub> ) |
|------------------------------------------------------------------------|-------------------------|------------------------------------------|----------------------------|
| 21/01/2014-31/12/2014                                                  | 118143.900              | 0.9502                                   | 112,260                    |
| 01/01/2015-31/12/2015                                                  | 133712.250              | 0.9502                                   | 127,053                    |
| 01/01/2016-31/12/2016                                                  | 148615.250              | 0.9502                                   | 141,214                    |
| 01/01/2017-31/12/2017                                                  | 151970.700              | 0.9502                                   | 144,402                    |
| 01/01/2018-31/12/2018                                                  | 152316.500              | 0.9502                                   | 144,731                    |
| 01/01/2019-31/10/2019                                                  | 144827.550              | 0.9502                                   | 137,615                    |
| Total in this monitoring period<br>21/01/2014-10/10/2019<br>(2110days) | 849586.150              | 0.9502                                   | 807,275                    |

The monthly data and ER breakdown are shown in appendix 1.

### 4.2 Project Emissions

According to the ACM0002 methodology, the project emissions (PE<sub>y</sub>) are zero for wind power projects, and therefore the emission reductions are equal to the baseline emissions.

### 4.3 Leakage

According to ACM0002, no leakage needs to be considered.

### 4.4 Net GHG Emission Reductions and Removals

$$ER_y = BE_y - PE_y = BE_y = 807,275$$

| Year                  | Baseline emissions or removals (tCO <sub>2</sub> e) | Project emissions or removals (tCO <sub>2</sub> e) | Leakage emissions (tCO <sub>2</sub> e) | Net GHG emission reductions or removals (tCO <sub>2</sub> e) |
|-----------------------|-----------------------------------------------------|----------------------------------------------------|----------------------------------------|--------------------------------------------------------------|
| 21/01/2014-31/12/2014 | 112,260                                             | 0                                                  | 0                                      | 112,260                                                      |
| 01/01/2015-31/12/2015 | 127,053                                             | 0                                                  | 0                                      | 127,053                                                      |
| 01/01/2016-31/12/2016 | 141,214                                             | 0                                                  | 0                                      | 141,214                                                      |
| 01/01/2017-31/12/2017 | 144,402                                             | 0                                                  | 0                                      | 144,402                                                      |
| 01/01/2018-31/12/2018 | 144,731                                             | 0                                                  | 0                                      | 144,731                                                      |
| 01/01/2019-31/10/2019 | 137,615                                             | 0                                                  | 0                                      | 137,615                                                      |
| <b>Total</b>          | <b>807,275</b>                                      | <b>0</b>                                           | <b>0</b>                               | <b>807,275</b>                                               |

The estimated annual emission reductions are 123,126tCO<sub>2</sub>e as per registered PDD. The monitoring period covers 2110 days. The ex-ante emission reductions during this monitoring period are  $123,126/365 \times 2110 = 711,769$ tCO<sub>2</sub>e. The actual emission reductions in this period are 807,275 tCO<sub>2</sub>e, which are 13% more than the estimated value. This would not influence the additionality of the project. The reasons for increase are as follows: First, in this monitoring period, the wind volume is larger than the estimation in project design. Second, the wind turbine generators operate at good status and the allowed electricity volume is increasing.

## Appendix 1. Electricity Record and ER breakdown

| Electricity delivered to NCPG by the project activity to the grid in year y(MWh) |                                                                                                                            |                                                                 |                                                                                                            |                                                   |                                                                                   | Electricity consumed by the project which is imported from NCPG in year y(MWh)                   |                                                                                                  |                                                                   |                                                                         |                                                                        |                                                                                                                                                 |                       |                      |  |
|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------|--|
|                                                                                  | Met<br>er<br>rec<br>ord<br>of<br>exp<br>ort<br>ed<br>elec<br>tricit<br>y<br>fro<br>m<br>M1<br>(EG<br>export,<br>M1,<br>y ) | Met<br>er<br>rec<br>ord<br>of<br>M2(EG<br>export,<br>M2,<br>y ) | Tota<br>l<br>met<br>er<br>rec<br>ord<br>of<br>exp<br>ort<br>ed<br>elec<br>tricity<br>of<br>M1<br>and<br>M2 | Sales receipt of<br>total exported<br>electricity | Min(mete<br>r<br>recor<br>d,<br>sale<br>s<br>recei<br>pt)<br>(EG<br>expo<br>rt,y) | Meter<br>recor<br>d of<br>import<br>ed<br>electri<br>city<br>from<br>M1(EG<br>import,<br>M1, y ) | Meter<br>recor<br>d of<br>import<br>ed<br>electri<br>city<br>from<br>M2(EG<br>import,<br>M2, y ) | Total<br>impo<br>rted<br>elect<br>ricity<br>of<br>M1<br>and<br>M2 | Sale<br>s<br>recei<br>pt of<br>total<br>impo<br>rted<br>elect<br>ricity | Max(<br>meter<br>recor<br>d, sales<br>recei<br>pt)<br>(EGim<br>port,y) | Net<br>elect<br>ricity<br>supp<br>lied<br>by the<br>proj<br>ect<br>activ<br>ity to<br>the<br>grid<br>in<br>year<br>y<br>(EGfac<br>ility,<br>y ) | EF (t<br>CO2/<br>MWh) | ER<br>(t<br>CO<br>2) |  |
| 21/01/2014-31/01/2014                                                            | 1671.250                                                                                                                   | 3750.250                                                        | 5421.500                                                                                                   | 5421.500                                          | 5421.500                                                                          | 14.700                                                                                           | 45.850                                                                                           | 60.550                                                            | 60.550                                                                  | 60.550                                                                 | 5,360.950                                                                                                                                       |                       |                      |  |
| 1/02/2014-28/02/2014                                                             | 3157.000                                                                                                                   | 3210.900                                                        | 6367.900                                                                                                   | 6367.900                                          | 6367.900                                                                          | 30.100                                                                                           | 37.450                                                                                           | 67.550                                                            | 67.550                                                                  | 67.550                                                                 | 6,300.350                                                                                                                                       |                       |                      |  |
| 1/03/2014-31/03/2014                                                             | 5033.700                                                                                                                   | 4291.350                                                        | 9325.050                                                                                                   | 9325.050                                          | 9325.050                                                                          | 14.350                                                                                           | 28.000                                                                                           | 42.350                                                            | 42.350                                                                  | 42.350                                                                 | 9,282.700                                                                                                                                       |                       |                      |  |
| 1/04/2014-30/04/2014                                                             | 6048.700                                                                                                                   | 6635.650                                                        | 12684.350                                                                                                  | 12684.350                                         | 12684.350                                                                         | 14.350                                                                                           | 13.300                                                                                           | 27.650                                                            | 27.650                                                                  | 27.650                                                                 | 12,656.700                                                                                                                                      |                       |                      |  |
| 1/05/2014-31/05/2014                                                             | 5449.850                                                                                                                   | 7194.250                                                        | 12644.100                                                                                                  | 12644.100                                         | 12644.100                                                                         | 19.600                                                                                           | 7.700                                                                                            | 27.300                                                            | 27.300                                                                  | 27.300                                                                 | 12,616.800                                                                                                                                      |                       |                      |  |
| 1/06/2014-30/06/2014                                                             | 3947.650                                                                                                                   | 6004.600                                                        | 9952.250                                                                                                   | 9952.250                                          | 9952.250                                                                          | 14.000                                                                                           | 14.700                                                                                           | 28.700                                                            | 28.700                                                                  | 28.700                                                                 | 9,923.550                                                                                                                                       |                       |                      |  |
| 1/07/2014-31/07/2014                                                             | 8751.750                                                                                                                   | 4722.550                                                        | 13474.300                                                                                                  | 13474.300                                         | 13474.300                                                                         | 44.800                                                                                           | 17.500                                                                                           | 62.300                                                            | 62.300                                                                  | 62.300                                                                 | 13,412.000                                                                                                                                      |                       |                      |  |
| 1/08/2014-31/08/2014                                                             | 10140.200                                                                                                                  | 6089.300                                                        | 16229.500                                                                                                  | 16229.500                                         | 16229.500                                                                         | 32.550                                                                                           | 14.700                                                                                           | 47.250                                                            | 47.250                                                                  | 47.250                                                                 | 16,182.250                                                                                                                                      |                       |                      |  |
| 1/09/2014-30/09/2014                                                             | 7284.200                                                                                                                   | 5761.700                                                        | 13045.900                                                                                                  | 13045.900                                         | 13045.900                                                                         | 23.450                                                                                           | 13.650                                                                                           | 37.100                                                            | 37.100                                                                  | 37.100                                                                 | 13,008.800                                                                                                                                      |                       |                      |  |
| 1/10/2014-                                                                       | 5256.300                                                                                                                   | 5158.300                                                        | 10414.600                                                                                                  | 10414.600                                         | 10414.600                                                                         | 51.100                                                                                           | 7.000                                                                                            | 58.100                                                            | 58.100                                                                  | 58.100                                                                 | 10,356.500                                                                                                                                      |                       |                      |  |

|                      |                            |                            |                             |            |                             |                     |                     |                     |             |                     |                             |                    |                         |
|----------------------|----------------------------|----------------------------|-----------------------------|------------|-----------------------------|---------------------|---------------------|---------------------|-------------|---------------------|-----------------------------|--------------------|-------------------------|
| 31/10/2014           |                            |                            |                             |            |                             |                     |                     |                     |             |                     |                             |                    |                         |
| 1/11/2014-30/11/2014 | 304<br>2.9<br>00           | 268<br>3.45<br>0           | 572<br>6.35<br>0            | 5726.350   | 5726<br>.350                | 49.00<br>0          | 35.35<br>0          | 84.3<br>50          | 84.3<br>50  | 84.35<br>0          | 5,64<br>2.00<br>0           |                    |                         |
| 1/12/2014-31/12/2014 | 196<br>4.2<br>00           | 151<br>7.60<br>0           | 348<br>1.80<br>0            | 3481.800   | 3481<br>.800                | 35.00<br>0          | 45.50<br>0          | 80.5<br>00          | 80.5<br>00  | 80.50<br>0          | 3,40<br>1.30<br>0           |                    |                         |
| <b>Total in 2014</b> | <b>617<br/>47.<br/>700</b> | <b>570<br/>19.9<br/>00</b> | <b>118<br/>767.<br/>600</b> | 131492.550 | <b>1187<br/>67.6<br/>00</b> | <b>343.0<br/>00</b> | <b>280.7<br/>00</b> | <b>623.<br/>700</b> | 623.<br>700 | <b>623.7<br/>00</b> | <b>1181<br/>43.9<br/>00</b> | <b>0.95<br/>02</b> | <b>11<br/>22<br/>60</b> |
| 1/01/2015-31/01/2015 | 258<br>3.0<br>00           | 507<br>0.80<br>0           | 765<br>3.80<br>0            | 7653.800   | 7653<br>.800                | 28.00<br>0          | 18.20<br>0          | 46.2<br>00          | 46.2<br>00  | 46.20<br>0          | 7,60<br>7.60<br>0           |                    |                         |
| 1/02/2015-28/02/2015 | 540<br>4.0<br>00           | 497<br>8.05<br>0           | 103<br>82.0<br>50           | 10382.050  | 1038<br>2.05<br>0           | 17.15<br>0          | 28.35<br>0          | 45.5<br>00          | 45.5<br>00  | 45.50<br>0          | 10,3<br>36.5<br>50          |                    |                         |
| 1/03/2015-31/03/2015 | 787<br>7.8<br>00           | 769<br>7.20<br>0           | 155<br>75.0<br>00           | 15575.000  | 1557<br>5.00<br>0           | 8.050               | 17.15<br>0          | 25.2<br>00          | 25.2<br>00  | 25.20<br>0          | 15,5<br>49.8<br>00          |                    |                         |
| 1/04/2015-30/04/2015 | 870<br>5.2<br>00           | 834<br>5.40<br>0           | 170<br>50.6<br>00           | 17050.600  | 1705<br>0.60<br>0           | 8.050               | 13.30<br>0          | 21.3<br>50          | 21.3<br>50  | 21.35<br>0          | 17,0<br>29.2<br>50          |                    |                         |
| 1/05/2015-31/05/2015 | 756<br>4.5<br>50           | 696<br>5.35<br>0           | 145<br>29.9<br>00           | 14529.900  | 1452<br>9.90<br>0           | 7.350               | 19.95<br>0          | 27.3<br>00          | 27.3<br>00  | 27.30<br>0          | 14,5<br>02.6<br>00          |                    |                         |
| 1/06/2015-30/06/2015 | 588<br>8.4<br>00           | 547<br>8.20<br>0           | 113<br>66.6<br>00           | 11366.600  | 1136<br>6.60<br>0           | 8.750               | 13.30<br>0          | 22.0<br>50          | 22.0<br>50  | 22.05<br>0          | 11,3<br>44.5<br>50          |                    |                         |
| 1/07/2015-31/07/2015 | 763<br>4.9<br>00           | 706<br>3.70<br>0           | 146<br>98.6<br>00           | 14698.600  | 1469<br>8.60<br>0           | 7.350               | 43.75<br>0          | 51.1<br>00          | 51.1<br>00  | 51.10<br>0          | 14,6<br>47.5<br>00          |                    |                         |
| 1/08/2015-31/08/2015 | 747<br>4.2<br>50           | 668<br>3.60<br>0           | 141<br>57.8<br>50           | 14157.850  | 1415<br>7.85<br>0           | 7.350               | 33.60<br>0          | 40.9<br>50          | 40.9<br>50  | 40.95<br>0          | 14,1<br>16.9<br>00          |                    |                         |
| 1/09/2015-30/09/2015 | 573<br>5.8<br>00           | 598<br>3.60<br>0           | 117<br>19.4<br>00           | 11719.400  | 1171<br>9.40<br>0           | 8.400               | 33.60<br>0          | 42.0<br>00          | 42.0<br>00  | 42.00<br>0          | 11,6<br>77.4<br>00          |                    |                         |
| 1/10/2015-31/10/2015 | 356<br>1.9<br>50           | 311<br>2.90<br>0           | 667<br>4.85<br>0            | 6674.850   | 6674<br>.850                | 14.00<br>0          | 63.00<br>0          | 77.0<br>00          | 77.0<br>00  | 77.00<br>0          | 6,59<br>7.85<br>0           |                    |                         |
| 1/11/2015-30/11/2015 | 200<br>2.0<br>00           | 176<br>0.50<br>0           | 376<br>2.50<br>0            | 3762.500   | 3762<br>.500                | 20.65<br>0          | 65.10<br>0          | 85.7<br>50          | 85.7<br>50  | 85.75<br>0          | 3,67<br>6.75<br>0           |                    |                         |
| 1/12/2015-31/12/2015 | 191<br>5.5<br>50           | 473<br>6.90<br>0           | 665<br>2.45<br>0            | 6652.450   | 6652<br>.450                | 11.90<br>0          | 15.05<br>0          | 26.9<br>50          | 26.9<br>50  | 26.95<br>0          | 6,62<br>5.50<br>0           |                    |                         |
| <b>Total in 2015</b> | <b>663<br/>47.<br/>400</b> | <b>678<br/>76.2<br/>00</b> | <b>134<br/>223.<br/>600</b> | 134223.600 | <b>1342<br/>23.6<br/>00</b> | <b>147.0<br/>00</b> | <b>364.3<br/>50</b> | <b>511.<br/>350</b> | 511.<br>350 | <b>511.3<br/>50</b> | <b>1337<br/>12.2<br/>50</b> | <b>0.95<br/>02</b> | <b>12<br/>70<br/>53</b> |
| 1/01/2016-31/01/2016 | 282<br>3.4<br>50           | 487<br>5.50<br>0           | 769<br>8.95<br>0            | 7698.950   | 7698<br>.950                | 12.25<br>0          | 25.90<br>0          | 38.1<br>50          | 38.1<br>50  | 38.15<br>0          | 7,66<br>0.80<br>0           |                    |                         |

|                      |                   |                   |                    |            |                    |             |             |             |             |             |                    |            |                |
|----------------------|-------------------|-------------------|--------------------|------------|--------------------|-------------|-------------|-------------|-------------|-------------|--------------------|------------|----------------|
| 1/02/2016-28/02/2016 | 358<br>3.3<br>00  | 417<br>4.10<br>0  | 775<br>7.40<br>0   | 7757.400   | 7757<br>.400       | 26.60<br>0  | 43.40<br>0  | 70.0<br>00  | 70.0<br>00  | 70.00<br>0  | 7,68<br>7.40<br>0  |            |                |
| 1/03/2016-31/03/2016 | 571<br>3.7<br>50  | 557<br>8.65<br>0  | 112<br>92.4<br>00  | 11292.400  | 1129<br>2.40<br>0  | 12.60<br>0  | 28.00<br>0  | 40.6<br>00  | 40.6<br>00  | 40.60<br>0  | 11,2<br>51.8<br>00 |            |                |
| 1/04/2016-30/04/2016 | 686<br>5.6<br>00  | 862<br>6.45<br>0  | 154<br>92.0<br>50  | 15492.050  | 1549<br>2.05<br>0  | 12.60<br>0  | 13.30<br>0  | 25.9<br>00  | 25.9<br>00  | 25.90<br>0  | 15,4<br>66.1<br>50 |            |                |
| 1/05/2016-31/05/2016 | 618<br>5.9<br>00  | 935<br>2.70<br>0  | 155<br>38.6<br>00  | 15538.600  | 1553<br>8.60<br>0  | 16.80<br>0  | 7.700       | 24.5<br>00  | 24.5<br>00  | 24.50<br>0  | 15,5<br>14.1<br>00 |            |                |
| 1/06/2016-30/06/2016 | 589<br>1.2<br>00  | 780<br>6.05<br>0  | 136<br>97.2<br>50  | 13697.250  | 1369<br>7.25<br>0  | 12.25<br>0  | 14.70<br>0  | 26.9<br>50  | 26.9<br>50  | 26.95<br>0  | 13,6<br>70.3<br>00 |            |                |
| 1/07/2016-31/07/2016 | 946<br>4.0<br>00  | 613<br>9.35<br>0  | 156<br>03.3<br>50  | 15603.350  | 1560<br>3.35<br>0  | 38.85<br>0  | 17.50<br>0  | 56.3<br>50  | 56.3<br>50  | 56.35<br>0  | 15,5<br>47.0<br>00 |            |                |
| 1/08/2016-31/08/2016 | 105<br>70.<br>000 | 791<br>5.95<br>0  | 184<br>85.9<br>50  | 18485.950  | 1848<br>5.95<br>0  | 28.35<br>0  | 14.70<br>0  | 43.0<br>50  | 43.0<br>50  | 43.05<br>0  | 18,4<br>42.9<br>00 |            |                |
| 1/09/2016-30/09/2016 | 826<br>8.0<br>50  | 749<br>0.35<br>0  | 157<br>58.4<br>00  | 15758.400  | 1575<br>8.40<br>0  | 24.85<br>0  | 13.65<br>0  | 38.5<br>00  | 38.5<br>00  | 38.50<br>0  | 15,7<br>19.9<br>00 |            |                |
| 1/10/2016-31/10/2016 | 596<br>6.4<br>50  | 670<br>5.65<br>0  | 126<br>72.1<br>00  | 12672.100  | 1267<br>2.10<br>0  | 42.00<br>0  | 7.000       | 49.0<br>00  | 49.0<br>00  | 49.00<br>0  | 12,6<br>23.1<br>00 |            |                |
| 1/11/2016-30/11/2016 | 345<br>4.1<br>50  | 548<br>8.35<br>0  | 894<br>2.50<br>0   | 8942.500   | 8942<br>.500       | 38.15<br>0  | 25.20<br>0  | 63.3<br>50  | 63.3<br>50  | 63.35<br>0  | 8,87<br>9.15<br>0  |            |                |
| 1/12/2016-31/12/2016 | 222<br>9.5<br>00  | 397<br>2.85<br>0  | 620<br>2.35<br>0   | 6202.350   | 6202<br>.350       | 14.00<br>0  | 35.70<br>0  | 49.7<br>00  | 49.7<br>00  | 49.70<br>0  | 6,15<br>2.65<br>0  |            |                |
| <b>Total in 2016</b> | 710<br>15.<br>350 | 781<br>25.9<br>50 | 149<br>141.<br>300 | 149141.300 | 1491<br>41.3<br>00 | 279.3<br>00 | 246.7<br>50 | 526.<br>050 | 526.<br>050 | 526.0<br>50 | 1486<br>15.2<br>50 | 0.95<br>02 | 14<br>12<br>14 |
| 1/01/2017-31/01/2017 | 300<br>3.7<br>00  | 562<br>8.35<br>0  | 863<br>2.05<br>0   | 8632.050   | 8632<br>.050       | 18.20<br>0  | 19.95<br>0  | 38.1<br>50  | 38.1<br>50  | 38.15<br>0  | 8,59<br>3.90<br>0  |            |                |
| 1/02/2017-28/02/2017 | 628<br>3.9<br>00  | 552<br>5.45<br>0  | 118<br>09.3<br>50  | 11809.350  | 1180<br>9.35<br>0  | 8.400       | 31.15<br>0  | 39.5<br>50  | 39.5<br>50  | 39.55<br>0  | 11,7<br>69.8<br>00 |            |                |
| 1/03/2017-31/03/2017 | 816<br>0.2<br>50  | 854<br>4.20<br>0  | 167<br>04.4<br>50  | 16704.450  | 1670<br>4.45<br>0  | 4.900       | 18.90<br>0  | 23.8<br>00  | 23.8<br>00  | 23.80<br>0  | 16,6<br>80.6<br>50 |            |                |
| 1/04/2017-30/04/2017 | 912<br>2.4<br>00  | 926<br>3.45<br>0  | 183<br>85.8<br>50  | 18385.850  | 1838<br>5.85<br>0  | 6.300       | 14.70<br>0  | 21.0<br>00  | 21.0<br>00  | 21.00<br>0  | 18,3<br>64.8<br>50 |            |                |
| 1/05/2017-31/05/2017 | 879<br>6.2<br>00  | 773<br>1.50<br>0  | 165<br>27.7<br>00  | 16527.700  | 1652<br>7.70<br>0  | 7.350       | 22.05<br>0  | 29.4<br>00  | 29.4<br>00  | 29.40<br>0  | 16,4<br>98.3<br>00 |            |                |

|                      |                            |                            |                             |                   |                             |                     |                     |                     |                     |                     |                             |                    |                         |
|----------------------|----------------------------|----------------------------|-----------------------------|-------------------|-----------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-----------------------------|--------------------|-------------------------|
| 1/06/2017-30/06/2017 | 684<br>7.0<br>50           | 608<br>0.90<br>0           | 129<br>27.9<br>50           | 12927.950         | 1292<br>7.95<br>0           | 8.750               | 14.70<br>0          | 23.4<br>50          | 23.4<br>50          | 23.45<br>0          | 12,9<br>04.5<br>00          |                    |                         |
| 1/07/2017-31/07/2017 | 887<br>7.7<br>50           | 784<br>0.70<br>0           | 167<br>18.4<br>50           | 16718.450         | 1671<br>8.45<br>0           | 7.350               | 48.30<br>0          | 55.6<br>50          | 55.6<br>50          | 55.65<br>0          | 16,6<br>62.8<br>00          |                    |                         |
| 1/08/2017-31/08/2017 | 869<br>0.8<br>50           | 741<br>8.60<br>0           | 161<br>09.4<br>50           | 16109.450         | 1610<br>9.45<br>0           | 7.350               | 37.10<br>0          | 44.4<br>50          | 44.4<br>50          | 44.45<br>0          | 16,0<br>65.0<br>00          |                    |                         |
| 1/09/2017-30/09/2017 | 666<br>9.6<br>00           | 664<br>1.95<br>0           | 133<br>11.5<br>50           | 13311.550         | 1331<br>1.55<br>0           | 3.500               | 37.10<br>0          | 40.6<br>00          | 40.6<br>00          | 40.60<br>0          | 13,2<br>70.9<br>50          |                    |                         |
| 1/10/2017-31/10/2017 | 414<br>1.9<br>00           | 345<br>5.20<br>0           | 759<br>7.10<br>0            | 7597.100          | 7597<br>.100                | 14.00<br>0          | 69.30<br>0          | 83.3<br>00          | 83.3<br>00          | 83.30<br>0          | 7,51<br>3.80<br>0           |                    |                         |
| 1/11/2017-30/11/2017 | 232<br>7.8<br>50           | 395<br>3.95<br>0           | 628<br>1.80<br>0            | 6281.800          | 6281<br>.800                | 24.85<br>0          | 71.40<br>0          | 96.2<br>50          | 96.2<br>50          | 96.25<br>0          | 6,18<br>5.55<br>0           |                    |                         |
| 1/12/2017-31/12/2017 | 222<br>7.4<br>00           | 525<br>7.70<br>0           | 748<br>5.10<br>0            | 7485.100          | 7485<br>.100                | 8.050               | 16.45<br>0          | 24.5<br>00          | 24.5<br>00          | 24.50<br>0          | 7,46<br>0.60<br>0           |                    |                         |
| <b>Total in 2017</b> | <b>751<br/>48.<br/>850</b> | <b>773<br/>41.9<br/>50</b> | <b>152<br/>490.<br/>800</b> | <b>152490.800</b> | <b>1524<br/>90.8<br/>00</b> | <b>119.0<br/>00</b> | <b>401.1<br/>00</b> | <b>520.<br/>100</b> | <b>520.<br/>100</b> | <b>520.1<br/>00</b> | <b>1519<br/>70.7<br/>00</b> | <b>0.95<br/>02</b> | <b>14<br/>44<br/>02</b> |
| 1/01/2018-31/01/2018 | 197<br>8.5<br>50           | 506<br>2.75<br>0           | 704<br>1.30<br>0            | 7041.300          | 7041<br>.300                | 9.100               | 56.00<br>0          | 65.1<br>00          | 65.1<br>00          | 65.10<br>0          | 6,97<br>6.20<br>0           |                    |                         |
| 1/02/2018-28/02/2018 | 388<br>8.1<br>50           | 433<br>4.75<br>0           | 822<br>2.90<br>0            | 8222.900          | 8222<br>.900                | 33.25<br>0          | 67.55<br>0          | 100.<br>800         | 100.<br>800         | 100.8<br>00         | 8,12<br>2.10<br>0           |                    |                         |
| 1/03/2018-31/03/2018 | 619<br>9.9<br>00           | 579<br>3.20<br>0           | 119<br>93.1<br>00           | 11993.100         | 1199<br>3.10<br>0           | 13.65<br>0          | 28.00<br>0          | 41.6<br>50          | 41.6<br>50          | 41.65<br>0          | 11,9<br>51.4<br>50          |                    |                         |
| 1/04/2018-30/04/2018 | 745<br>0.1<br>00           | 895<br>8.25<br>0           | 164<br>08.3<br>50           | 16408.350         | 1640<br>8.35<br>0           | 13.65<br>0          | 13.30<br>0          | 26.9<br>50          | 26.9<br>50          | 26.95<br>0          | 16,3<br>81.4<br>00          |                    |                         |
| 1/05/2018-31/05/2018 | 671<br>2.6<br>50           | 971<br>2.15<br>0           | 164<br>24.8<br>00           | 16424.800         | 1642<br>4.80<br>0           | 18.55<br>0          | 7.700               | 26.2<br>50          | 26.2<br>50          | 26.25<br>0          | 16,3<br>98.5<br>50          |                    |                         |
| 1/06/2018-30/06/2018 | 639<br>2.4<br>00           | 810<br>6.35<br>0           | 144<br>98.7<br>50           | 14498.750         | 1449<br>8.75<br>0           | 13.30<br>0          | 14.70<br>0          | 28.0<br>00          | 28.0<br>00          | 28.00<br>0          | 14,4<br>70.7<br>50          |                    |                         |
| 1/07/2018-31/07/2018 | 102<br>69.<br>700          | 637<br>5.60<br>0           | 166<br>45.3<br>00           | 16645.300         | 1664<br>5.30<br>0           | 42.35<br>0          | 17.50<br>0          | 59.8<br>50          | 59.8<br>50          | 59.85<br>0          | 16,5<br>85.4<br>50          |                    |                         |
| 1/08/2018-31/08/2018 | 114<br>69.<br>500          | 822<br>0.45<br>0           | 196<br>89.9<br>50           | 19689.950         | 1968<br>9.95<br>0           | 30.80<br>0          | 14.70<br>0          | 45.5<br>00          | 45.5<br>00          | 45.50<br>0          | 19,6<br>44.4<br>50          |                    |                         |
| 1/09/2018-30/09/2018 | 897<br>1.5<br>50           | 777<br>8.40<br>0           | 167<br>49.9<br>50           | 16749.950         | 1674<br>9.95<br>0           | 26.95<br>0          | 13.65<br>0          | 40.6<br>00          | 40.6<br>00          | 40.60<br>0          | 16,7<br>09.3<br>50          |                    |                         |

|                                        |                   |                            |                             |                   |                    |             |             |             |                     |              |                              |                    |                          |
|----------------------------------------|-------------------|----------------------------|-----------------------------|-------------------|--------------------|-------------|-------------|-------------|---------------------|--------------|------------------------------|--------------------|--------------------------|
| 1/10/2018-31/10/2018                   | 647<br>4.3<br>00  | 696<br>3.60<br>0           | 134<br>37.9<br>00           | 13437.900         | 1343<br>7.90<br>0  | 45.50<br>0  | 7.000       | 52.5<br>00  | 52.5<br>00          | 52.50<br>0   | 13,3<br>85.4<br>00           |                    |                          |
| 1/11/2018-30/11/2018                   | 374<br>8.1<br>50  | 362<br>2.50<br>0           | 737<br>0.65<br>0            | 7370.650          | 7370<br>.650       | 41.30<br>0  | 35.35<br>0  | 76.6<br>50  | 76.6<br>50          | 76.65<br>0   | 7,29<br>4.00<br>0            |                    |                          |
| 1/12/2018-31/12/2018                   | 241<br>9.5<br>50  | 204<br>8.90<br>0           | 446<br>8.45<br>0            | 4468.450          | 4468<br>.450       | 15.40<br>0  | 55.65<br>0  | 71.0<br>50  | 71.0<br>50          | 71.05<br>0   | 4,39<br>7.40<br>0            |                    |                          |
| <b>Total in 2018</b>                   | 759<br>74.<br>500 | 7697<br>6.90<br>0          | 1529<br>51.4<br>00          | <b>152951.400</b> | 1529<br>51.4<br>00 | 303.8<br>00 | 331.1<br>00 | 634.<br>900 | <b>634.<br/>900</b> | 634.9<br>00  | 1523<br>16.5<br>00           | <b>0.95<br/>02</b> | <b>14<br/>47<br/>31</b>  |
| 1/01/2019-31/01/2019                   | 319<br>0.6<br>00  | 5284<br>.650               | 847<br>5.25<br>0            | 8475.250          | 8475<br>.250       | 8.750       | 19.95<br>0  | 28.7<br>00  | 28.7<br>00          | 28.70<br>0   | 8,44<br>6.55<br>0            |                    |                          |
| 1/02/2019-28/02/2019                   | 404<br>9.1<br>50  | 5973<br>.450               | 100<br>22.6<br>00           | 10022.600         | 1002<br>2.60<br>0  | 31.85<br>0  | 31.15<br>0  | 63.0<br>00  | 63.0<br>00          | 63.00<br>0   | 9,95<br>9.60<br>0            |                    |                          |
| 1/03/2019-31/03/2019                   | 645<br>6.4<br>50  | 9236<br>.850               | 156<br>93.3<br>00           | 15693.300         | 1569<br>3.30<br>0  | 13.30<br>0  | 18.90<br>0  | 32.2<br>00  | 32.2<br>00          | 32.20<br>0   | 15,6<br>61.1<br>00           |                    |                          |
| 1/04/2019-30/04/2019                   | 775<br>8.4<br>50  | 1001<br>4.55<br>0          | 177<br>73.0<br>00           | 17773.000         | 1777<br>3.00<br>0  | 13.30<br>0  | 14.70<br>0  | 28.0<br>00  | 28.0<br>00          | 28.00<br>0   | 17,7<br>45.0<br>00           |                    |                          |
| 1/05/2019-31/05/2019                   | 699<br>0.2<br>00  | 8358<br>.350               | 153<br>48.5<br>50           | 15348.550         | 1534<br>8.55<br>0  | 17.85<br>0  | 22.05<br>0  | 39.9<br>00  | 39.9<br>00          | 39.90<br>0   | 15,3<br>08.6<br>50           |                    |                          |
| 1/06/2019-30/06/2019                   | 665<br>7.0<br>00  | 6573<br>.700               | 132<br>30.7<br>00           | 13230.700         | 1323<br>0.70<br>0  | 12.60<br>0  | 14.70<br>0  | 27.3<br>00  | 27.3<br>00          | 27.30<br>0   | 13,2<br>03.4<br>00           |                    |                          |
| 1/07/2019-31/07/2019                   | 999<br>4.6<br>00  | 8476<br>.300               | 184<br>70.9<br>00           | 18470.900         | 1847<br>0.90<br>0  | 40.60<br>0  | 48.30<br>0  | 88.9<br>00  | 88.9<br>00          | 88.90<br>0   | 18,3<br>82.0<br>00           |                    |                          |
| 1/08/2019-31/08/2019                   | 109<br>44.<br>150 | 8020<br>.250               | 189<br>64.4<br>00           | 18964.400         | 1896<br>4.40<br>0  | 29.75<br>0  | 37.10<br>0  | 66.8<br>50  | 66.8<br>50          | 66.85<br>0   | 18,8<br>97.5<br>50           |                    |                          |
| 1/09/2019-30/09/2019                   | 934<br>2.9<br>00  | 7180<br>.250               | 165<br>23.1<br>50           | 16523.150         | 1652<br>3.15<br>0  | 26.25<br>0  | 37.10<br>0  | 63.3<br>50  | 63.3<br>50          | 63.35<br>0   | 16,4<br>59.8<br>00           |                    |                          |
| 1/10/2019-31/10/2019                   | 674<br>2.0<br>50  | 4135<br>.250               | 108<br>77.3<br>00           | 10877.300         | 1087<br>7.30<br>0  | 44.10<br>0  | 69.30<br>0  | 113.<br>400 | 113.<br>400         | 113.4<br>00  | 10,7<br>63.9<br>00           |                    |                          |
| <b>Total in 2019</b>                   | 721<br>25.<br>550 | <b>7325<br/>3.60<br/>0</b> | <b>1453<br/>79.1<br/>50</b> | <b>145379.150</b> | 1453<br>79.1<br>50 | 238.3<br>50 | 313.2<br>50 | 551.<br>600 | 551.<br>600         | 551.6<br>00  | 1448<br>27.5<br>50           | <b>0.95<br/>02</b> | <b>13<br/>76<br/>15</b>  |
| <b>Total in this monitoring period</b> |                   |                            |                             |                   | 8529<br>53.8<br>50 |             |             |             |                     | 3367.<br>700 | <b>849,<br/>586.<br/>150</b> |                    | <b>80<br/>7,2<br/>75</b> |