

# **0994 Inner Mongolia Chifeng Saihanba West 30.6 MW Wind Farm Project**

## **Annex 4**

### **REVISED MONITORING PLAN**

#### **1. Introduction**

The Inner Mongolia Chifeng Saihanba West 30.6 MW Wind Farm Project adopts the approved consolidated monitoring methodology ACM0002 “Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources” to determine the emission reductions from the net electricity generation from the windfarm. This revised plan describes in more detail the process as set out in Section B of the Project Design Document.

This revision is necessary to explain in more detail than indicated in the PDD how to account for the fact that the project now shares facilities, including the 220 kV power line, and thus the connection at the substation and electricity meter installed there, with projects owned by the same project entity as shown in the diagram below.

#### **2. Responsibility**

Overall responsibility for monitoring and carrying out the monitoring following this monitoring plan lies with Datang Chifeng Saihanba Wind Power Co., Ltd.

Mr. Liu Jun, Head of Datang Chifeng Saihanba Wind Power Co., Ltd., is responsible for the monitoring and reporting of the windfarm.

Datang Chifeng Saihanba Wind Power Co., Ltd., in co-operation with the Northeast China Power Grid Company, and existing windfarms experienced experts, and with the help of DOEs, will train the staff carrying out the monitoring work.

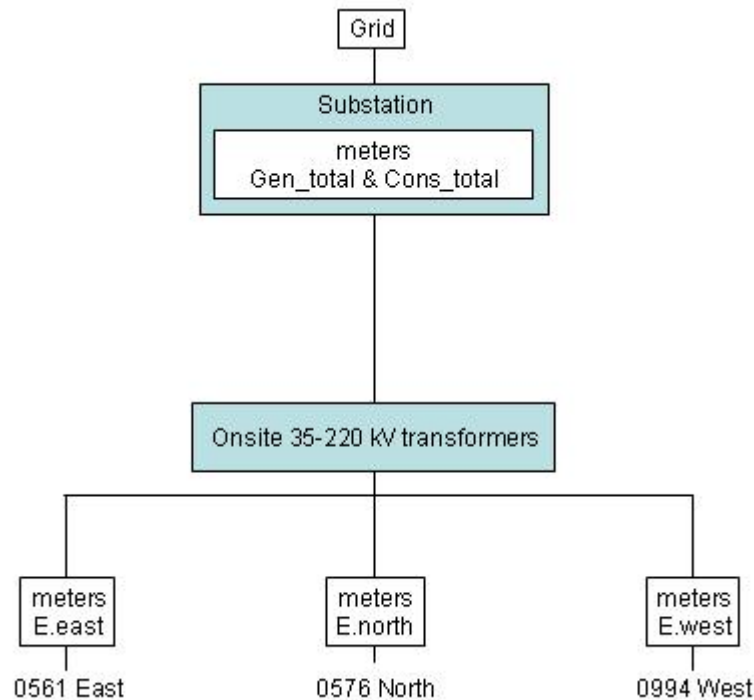
#### **3. Installation of meters**

The net electricity supplied from the Datang Chifeng Saihanba Wind Power Co., Ltd projects combined to the NEPG will be monitored through the use of on site metering equipment at the 220 kV substation. This main meter has two-way metering, recording both export to the grid (Gen\_total) and import from the grid (Cons\_total); net electricity supply (EG.total), therefore, is calculated as exports minus imports.

The main metering system equipment will be owned, operated and maintained by Northeast China Power Grid. The Chifeng Electric Power Company is responsible for the operation of and meter readings at the sub-station. Chifeng Electric Power Company reports electricity supply figures to both NEPG and Datang Chifeng Saihanba Wind Power Co., Ltd.

Separate meters are installed at each of the project sites, which can also record two-way metering, and can be used as back-up for the main meter. The back-up metering equipment at the project site is owned, operated and maintained by Datang Chifeng Saihanba Wind Power Co., Ltd. A metering diagram is presented below, giving an overview of these meters.

## Metering diagram



The back-up metering equipment is used to calculate the share of each of the projects of the net supply to the grid at 220 kV. This means that any transmission and transformer losses and any consumption by the onsite offices are accounted for and are shared between the project activities on the basis of electricity generation. The net electricity supplied from the project activity (EG.west) can now be calculated as follows:

$$EG.west = EG.total * E.west / (E.east + E.north + E.west)$$

Where:

EG.west is the calculated net electricity supplied from the project activity;

EG.total is the total net electricity supplied to the grid at the substation of the power grid company calculated from the main meter;

E.east is the electricity generation metered from the 0561 Saihanba East 45.05 MW Windfarm Project using the onsite meters

E.north is the electricity generation metered from the 0576 Saihanba North 45.05 MW Windfarm Project using the onsite meters

E.west is the electricity generation metered from the 0994 Inner Mongolia Chifeng Saihanba West 30.6 MW Wind Farm Project using the onsite meters

The total net electricity supplied to the grid at the substation (EG.total) is calculated from the meter reading from the main meter at the substation for export to the grid (Gen\_total) and import from the grid (Cons\_total). The project activity's share in exports to the grid and imports from the grid are not separately calculated, as only net supply is required for the emission reduction calculations.

This approach is flexible to accommodate potential future installations which also share transmission facilities with this project. All electricity generation sharing the same 220 kV transmission facilities to the substation will be monitored. The monthly electricity generation from each facility will be compiled and confirmed monthly by the Chifeng Electric Power Company.

#### **4. Calibration**

The metering equipment are calibrated and checked annually so that the metering equipment shall have sufficient accuracy. The net generation output registered by the meters alone will suffice for the purpose of billing and emission reduction verification as long as the error in the meters is within the agreed limits.

Calibration is carried out by Northeast China Power Grid with the records being supplied to Datang Chifeng Saihanba Wind Power Co., Ltd., and these records will be maintained by Datang Chifeng Saihanba Wind Power Co., Ltd. and the third party appointed by DOE.

All meters shall be jointly inspected and sealed on behalf of the parties concerned and shall not be interfered with by either party except in the presence of the other party or its accredited representatives.

All the meters installed shall be tested by Northeast China Power Grid within 10 days after: the detection of a difference larger than the allowable error in the readings of the meters; the repair of all or part of meter caused by the failure of one or more parts to operate in accordance with the specifications.

If any errors are detected the party owning the meter shall repair, recalibrate or replace the meter giving the other party sufficient notice to allow a representative to attend during any corrective activity.

Should any previous months reading of the main meter be inaccurate by more than the allowable error, or otherwise functioned improperly, the net generation output shall be determined by (a) first, by reading backup meter, unless a test by either party reveals it is inaccurate; (b) if the backup system is not with acceptable limits of accuracy or operation is performed improperly the Datang Chifeng Saihanba Wind Power Co., Ltd. and Northeast China Power Grid shall jointly prepare a reasonable and conservative estimate of the correct reading, and provide sufficient evidence that this estimation is reasonable and conservative when DOE undertakes verification; and (c) if Northeast China Power Grid and Datang Chifeng Saihanba Wind Power Co., Ltd. fail to agree then the matter will be referred for arbitration according to agreed procedures.

#### **5. Monitored data**

During the first seven operating years, the on-site net electricity generation will be monitored and recorded following the procedures above.

Off site, further data that needs to be monitored refers to the displaced grid electricity just before the start of the second and the third crediting period. Data variables to be monitored are presented in Section B of the PDD. This data is required to accurately calculate the grid CO<sub>2</sub> emission factor using the combined operating and build margins.

#### **6. Quality control**

Monthly net generation data will be approved and signed off by Mr. Liu Jun before it is accepted and stored.

This audit will check compliance with operational procedures in this monitoring plan and Section B of the PDD.

This internal audit will also identify potential improvements to procedures to improve monitoring and reporting in future years. If such improvements are proposed these will be reported to the DOE and only operationalised after approval from the DOE.

## **7. Data management system**

Physical document such as paper-based maps, diagrams and environmental assessments will be collated in a central place, together with this monitoring plan. In order to facilitate auditors' reference of relevant literature relating to Inner Mongolia Chifeng Saihanba West 30.6 MW Wind Farm Project, the project material and monitoring results will be indexed. All paper-based information will be stored by the technology department of Datang Chifeng Saihanba Wind Power Co., Ltd. and all the material will have a copy for backup.

And all data including calibration records is kept until 2 years after the end of the total crediting period of the CDM project.

## **8. Reporting**

The steps required to meet the requirements for emissions reduction monitoring include:

- Chifeng Electric Power Company reads main meter and reports the result (Gen\_total, Cons\_total and EG\_total) to Northeast China Power Grid Company and Datang Chifeng Saihanba Wind Power Co., Ltd. monthly.
- Datang Chifeng Saihanba Wind Power Co., Ltd. records readings from the backup meters at the three projects (E.east, E.north and E.west).
- Chifeng Electric Power Company complies and confirms the monthly generation the projects and reports the data to NEPG and Datang Chifeng Saihanba Wind Power Co., Ltd.
- Datang Chifeng Saihanba Wind Power Co., Ltd. carries out an internal audit on the readings, grid data and calculations.
- Datang Chifeng Saihanba Wind Power Co., Ltd. reports annually the readings, grid data and calculations to the DOE for verification.

## **9. Verification**

The contracted DOE will receive the annual emission reduction report after year end.

Datang Chifeng Saihanba Wind Power Co., Ltd. will facilitate the verification through providing the DOE with all required necessary information at any stage.