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Validation Report

VALIDATION OF THE RENEWAL OF CREDITING PERIOD OF AN EXISTING CDM-PROJECT:

"Zhangbei Mijiagou 49.5 MW Windfarm Project"

(UNFCCC REGISTRATION REF. NO. 0845)

REPORT NO. 10154WG

January 31st, 2015

TÜV SÜD South Asia Pvt. Ltd.
Environmental Technology
Carbon Management Service
Solitaire, I.T.I. Road, Aundh
Pune- 411007
INDIA

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Date of first issue of this report	**Revision No. of this report**	
07-09-2014	2	
Project Participant (contractor): Zhangbei Guotou Wind Power Plant	**Project Site(s):** Mijiagou village, west of Zhangbei county Zhangjiakou City, Hebei province GPS Coordinates: Latitude: 41°08' North, Longitude: 114°32' East **Host Country:** P.R.China	
Applied Methodology / Version: ACM0002, Version 15		**Scope(s):** 1 **Technical Area(s):** 1.2
First PDD Version (for the renewal of crediting period): PDD completion date: 26/08/2014 Version No.: 1.13	**Final PDD version:** PDD completion date: 26/08/2014 Version No.: 1.13	

VALIDATION OPINION

TÜV SÜD has performed a validation of the request for renewal of the crediting period of the aforementioned existing CDM project activity.

Standard auditing techniques have been used for the validation process.

The validation has been performed following the requirements of the latest version of the CDM VVS.

The review of the project design documentation, subsequent follow-up interviews, and further verification and validation of references have provided TÜV SÜD with sufficient evidence to determine the validity of the original baseline and to confirm that the estimated emission reductions are in line with the applied methodology. In our opinion, the project meets all relevant UNFCCC requirements and hence TÜV SÜD recommends the renewal of the crediting period of this project.

Considering that the project is implemented as designed, the project is likely to achieve the estimated amount of annual emission reductions of 97,018 tCO_2e and a total estimated of 679,126 tCO_2e as specified within the final PDD version for the second crediting period. During the validation process, neither Corrective Action Requests (CARs) nor Clarification Request (CR) was detected. Hence, no list of findings is attached to this report.

The single purpose of this report is its use during the registration process as part of the CDM project cycle. Based on the work described in this report, nothing has come to our attention that causes us to believe that any project component or issue has not been covered by the validation process.

Pune, 31/01/2015

Name of the signatory
Member
Certification Body “Environment and Energy”
TÜV SÜD South Asia

Abbreviations

ACM	Approved Consolidated Methodology
BM	Build Margin
CAR	Corrective Action Request
CB	Certification Body
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CR	Clarification Request
DOE	Designated Operational Entity
EB	Executive Board
ER	Emission reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
IRR	Internal Rate of Return
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
OM	Operating Margin
PDD	Project Design Document
PP	Project Participant
PS	Project Standard
TÜV SÜD	TÜV SÜD South Asia Pvt. Ltd.
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

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1 INTRODUCTION

1.1 Objective

The objective of the validation of the renewal of crediting period process of an existing project is to determine whether the project participants have updated the PDD in the sections related to the baseline, estimated emission reductions and monitoring plan using the most recent version of the baseline and monitoring methodology applicable for the project activity.

The ultimate decision on the acceptance to renew the crediting period of a proposed project activity rests with the CDM-EB.

1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of CDM project activities, the scope is set by:

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Clean Development Mechanism Validation And Verification Standard (VVS) published under http://cdm.unfccc.int
- Decisions and specific guidance outlined by the EB which are published der http://cdm.unfccc.int
- Guidelines for Completing the Project Design Document (CDM-PDD) and the Proposed New Baseline and Monitoring Methodology (CDM-NM)
- Baselines and monitoring methodologies (including GHG inventories)
- Management systems and auditing methods
- Environmental issues relevant to the applicable sectoral scope
- Applicable environmental and social impacts and aspects of CDM project activity
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice

The validation process is not meant to provide any form of consulting for the project participant (PP). However, stated requests for clarifications, corrective actions, and/or forward actions may provide input for improvement of the project design.

The purpose of a validation related to the renewal of the crediting period of a project is an assessment according to the VVS and includes an assessment of an updated PDD in accordance with the relevant sections of the PS related to the renewal of crediting period and in particular to:

(a) Consistency of the names of the Project Participants;

(b) The impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant guidance from the Board with regard to renewal of the crediting period at the time of requesting renewal of crediting period;

(c) The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.

2 VALIDATION METHODOLOGY

The information provided by the project participants is assessed by applying the means of validation specified in the VVS and where appropriate standard auditing techniques.

Before the assessment begins, a competent team is selected to perform the process. The team is selected to cover the technical area(s), sectoral scope(s), and relevant host country experience for evaluating the CDM project activity. The members of the team carry out a desk review, follow-up actions, resolution of identified issues, and the preparation of the validation report. The prepared validation report and other supporting documents then undergo an internal quality control by the CB "Environment and Energy" before being submitted to the CDM-EB.

In case the validation team identifies issues that require further elaboration, research or expansion in order to determine whether the project activity meets the CDM requirements, and can achieve credible emission reductions findings are raised as specified in the VVS.

To requests the renewal of the crediting period of the project activity, all CARs and CRs must be resolved. In this case, no CARs, CLs or FARs is found in the entire validation process.

2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment, TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body "Environment and Energy".

The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB TÜV SÜD operates the following qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL);
- Validator (V);
- Validator Trainee (T);
- Technical Experts (TE);
- Country expert (CE);
- Technical reviewer (TR).

It is required that the sectoral scope(s) and the technical area(s) (TA) linked to the methodology and project has to be covered by the assessment team.

A technical review is conducted to perform a check on quality and completeness.

Assessment Team:

Name	Qualification	Scope	Technical Area	Host country experience	Onsite visit
SUN Baoqi	**ATL & V**	**☑ (1)**	**☑ (1.2)**	**☑**	**-**
Ken (Geng) WU[1]	ATL	☑ (1)	☑ (1.2)	☑	
ZHANG Cuiyun	V	☑ (1)	☑ (1.2)	☑	☑

Technical Reviewer:

Name	Qualification	Coverage of scope	Coverage of technical area	Coverage of financial aspect
Sharma Shivraj	**TR**	**☑ (1)**	**☑ (1.2)**	**N/A**

Appointment certificates are attached to this report in Annex 2.

2.2 Review of Documents

The first version of the updated PDD and additional background documents, related to the project design and baseline have been reviewed to verify the correctness, credibility, and interpretation of the presented information and their compliance to the applicable requirements for requesting the renewal of crediting period. Furthermore, a cross-check between information provided and information from other sources has been done as an initial step of the validation process. A complete list of all documents and evidence material reviewed is attached as Annex 1 to this report.

2.3 Follow-up Interviews

TÜV SÜD performed interviews, telephone conferences, and physical site inspections during 01/09/2014 to 02/09/2014 with project stakeholders to confirm relevant information and to resolve issues identified in the first document review. A list of all persons interviewed in this process is presented in Annex 2 to this report.

2.4 Cross-check

During the validation process the team has made reference to available information related to similar projects or technologies as the CDM project activity. Project documentation has also been reviewed against the latest version of methodology (ACM 0002, version 15.0) applied to confirm the appropriateness of formulae and correctness of calculations.

[1] Mr. Ken(Geng) WU has left TUEV on 30th September, 2014 due to personal reason. Mr. SUN Baoqi took over the responsibility of ATL.

2.5 Resolution of Clarification and Corrective Action Requests

Neither clarification (CL) nor correction (CAR) was detected during the whole assessment process. The PDD was fully developed according to Project Standard (version 7), ACM0002 (version 15), Tool to calculate the emission factor for an electricity system (version 4), Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period (version 03.0.1).

2.6 Internal Quality Control

Internal quality control within the team is assured by means of a technical review process that takes place after the on-site assessment and after closure of findings. The internal quality control in the validation process is given by the final decision (Validation Opinion) made by the CB “Environment and Energy”.

3 REPORTING REQUIREMENTS

The assessment work and the main results are described below in accordance with the Clean Development Mechanism Validation and Verification Standard (VVS, 07 version). The reference documents indicated in this section are stated in Annex 1 of this report.

3.1 Project design document

The PDD is compliant with relevant form and guidance as provided by UNFCCC. The most recent version of the PDD form (version 5) was used.

3.2 Description of project activity

The information presented in the PDD on the technical design has been assessed for accuracy and completeness using standard auditing techniques including:

(a) Document review including

- A review of data and information;
- Cross checks between information provided in the PDD and information from sources other than those used, the DOE´s sectoral or local expertise. If necessary, independent background investigations were performed.

(b) Follow-up actions including:

- Interviews with relevant stakeholders in the host country, personnel with knowledge of the project design and implementation;
- Cross checks between information provided by interviewed personnel (i.e. by checking sources or other interviews) to ensure that no relevant information has been omitted.

(c) Reference to available information relating to projects or technologies similar to the proposed project activity under validation;

The names of the project participants included in the request for renewal of crediting period are consistent with the names stated at UNFCCC website (http://cdm.unfccc.int/Projects/DB/DNV-CUK1167997490.52/view). The same has been validated by the DOE through UNFCCC website and interview with the project participants.

33 wind turbines with capacity of 1.5MW each have been installed at project site and started full operation in May of 2007. Via site inspection, it could be confirmed by the assessment team that the wind turbines are operating in good condition and there's no negative impact to the lifetime of 20 years (IRL 9). It's certain that project activity remains the same in the 2nd crediting period. Furthermore, there's no change to the monitoring system as well.

In opinion of TÜV SÜD the project description, as included in the updated PDD, is accurate and complete; and it provides a correct understanding of the proposed project activity.

3.3 Validity of the selected baseline and monitoring methodology

The project was originally registered based on version 06 of the approved CDM methodology ACM0002. The CDM-PDD of the 2nd crediting period (version 1.13, dated 26/08/2014) applies version 15 of the consolidated methodology ACM0002. This is appropriate as version 15 is the most

recent version at the time of submission of the revised PDD for the renewal of the crediting period as per the "CDM Project Standard" v. 07 §288.

3.3.1 Applicability of the selected baseline and monitoring methodology to the project activity

The project applies the approved consolidated baseline and monitoring methodology ACM0002. (version 15.0) "Grid-connected electricity generation from renewable sources" in combination with several Tools like the "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" (version 03.0.1) and "Tool to calculate the emission factor for an electricity system "(version 04.0).

Compliance with each applicability condition as listed in the chosen baseline and monitoring methodology and relevant tools has been demonstrated.

The validation team assessed by checking the UNFCCC webpage that the baseline and monitoring methodology selected by the project participant is the valid version approved by the Board.

According to 15th version of ACM0002, the methodology is only applied to project activity which fulfills the following criteria:

Methodology Criterion	Project activity	Assessment result
Applies to project activities that include retrofitting, rehabilitation, replacement or capacity addition of an existing power plant or construction and operation of a Greenfield power plant	Construction and operation of a new wind farm project	The proposed project is a Greenfield power plant which falls into the applicable category.
The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;	The same as above	The same as above
In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	The same as above	Since the proposed project is a new wind farm project, this criterion is not applicable.
The methodology is not applicable to:	the same as above	Since the project activity is installing and operating a

(a) Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; (b) Biomass fired power plants/units.		new wind farm project, there's no fossil fuel switch or biomass utilization within the project boundary.
In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	the same as above	Since the proposed project is a new wind farm project, this criterion is not applicable.
In addition, the applicability conditions included in the tools referred to below apply.	The Project Activity is the installation of a wind power plant supplying electricity to the Grid.	Since the project is not a retrofit or rehabilitation or replacement of an existing power plant, the Combined tool to identify the baseline scenario and demonstrate additionality is not applicable to this case. Regarding the Tool for the demonstration and assessment of additionality, since it's a validation to the renewal of crediting period, it's not required according to VVS (version 07). The tool of assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period is applied to the PDD, however, there's no additional criteria raised in the tool.

Therefore, the latest version of ACM0002 (version 15) is appropriate to the project activity.

3.3.2 Validity of Baseline

The baseline scenario identified at the validation of the project activity was

"if the project activity is the installation of a Greenfield power plant, the baseline scenario is

electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system",

According to the methodological tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of crediting period" (Version 03.0.1) the following procedure was applied to assess the validity of the baseline.

Step 1: Assess the validity of the current baseline for the next crediting period

Via the following assessment step by step, it could be confirmed that the current baseline is still valid for the 2nd crediting period.

Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies

TÜV SÜD by assessing the aforementioned policy/law/degree confirms that the current baseline complies with those mandatory national, regional and/or sectoral requirements.

According to the methodology (para. 21), the **baseline** is given as

"if the project activity is the installation of a Greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system",

which is same to the previous baseline in 1st crediting period.

The assessment team confirms that the para. 359 (b) of VVS has been fully considered. Moreover, as per para. 359 (a) of VVS, **new relevant national and/or sectoral policies and circumstances** shall be checked to evaluate the impact on the baseline:

1) Based on audit team's country expertise, the DOE could affirm that as of 22/03/2007 which is registered day of the project, there's no further national or sectoral policies which could affect the baseline scenario.

2) China DNA's published data (http://cdm.ccchina.gov.cn/zyDetail.aspx?newsId=46143&TId=161) indicates that electricity supplied to the grid came overwhelmingly from fossil fuel power plants in past years and there's no trend of significant change. Moreover, coal still accounts for mass portion among all the fossil fuels used by Chinese power plants. Therefore, the current baseline does not need to be updated.

Therefore, there's no new relevant national or sectoral policies impact the baseline.

Step 1.2: Assess the impact of circumstances

As of the registration of the proposed project, there is no new type of fuels or raw materials in mass use in the host country which could be verified by Chinese Power Yearbooks (IRL 17) and China Energy Statistics Yearbooks (IRL 18). The electricity price has been fixed by Price Bureau of Hebei

Province (IRL 19), therefore, no change as well. Hence, there's no impact of circumstance to the existing baseline.

Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.

Through the on-site inspection, the audit team could confirm that all the facilities at project site operate well, which could further affirmed by the monthly operation records that have been evaluated by 3rd party (IRL 14). Furthermore, according to the technical parameters presented in the equipment contract (IRL 9), the life-time of turbine which is the main facility of a wind farm could last at least 20 years, therefore, the most likely scenario of the project is the continuation of use of current equipment.

Step 1.4: Assessment of the validity of the data and parameters

The **ex-ante fixed data** in the first crediting period need to be updated in the 2nd period.

As per para. 292 of PS (version 7), the parameter (i.e. $EF_{grid,CM,y}$ emission factor of the grid) used for determining GHG emission reductions that was determined ex-ante is no longer valid in the 2nd crediting period, therefore, it was updated in accordance with the "Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period". The data derived from The *Chinese Power Yearbooks* (2010 - 2012), *China Energy Statistics Yearbooks* (2010 - 2012) and IPCC values (Table 1.3/Table 1.4, Volume 2 Energy, 2006 version) were used for arithmetic. The calculation sheet has been verified by assessment team. The auditors could confirm that the values and calculation formulae are correctly applied in accordance with the *Tool to calculate the emission factor for an electricity system* (4.0 version). Moreover, the calculation result (0.9170) is same to the rate published by Chinese DNA (http://cdm.ccchina.gov.cn/Detail.aspx?newsId=41386&TId=3).

Step 2: Update the current baseline and the data and parameters
Step 2.1: Update the current baseline

As verified in Step 1, the baseline of the 2nd crediting period remains the same. There's no need to update the baseline.

Step 2.2: Update the data and parameters

The relevant parameters have been updated as described in detail in step 1.4 above.

As the project activity applies for renewal of crediting period, therefore assessment of additionality is not required as per the procedures stated under VVS, project standard and project cycle procedure. The whole assessment and demonstration of additionality for the given registered CDM project activity is included in the latest version of the PDD and validation report valid for the 1st 7-year renewable crediting period.

3.3.3 Algorithm and/or formulae used to determine emission reductions

TÜV SÜD has assessed the calculations of project emissions, baseline emissions, leakage, and emission reductions. Corresponding calculations have been carried out based on calculation

spreadsheets (IRL 15). The parameters and equations presented in the PDD, as well as other applicable documents, have been compared with the information and requirements presented in the methodology and respective tools. An equation comparison has been made to ensure consistency between all the formulae presented in the calculation files and in the PDD, methodology, and tools.

The estimate of the baseline emissions are considered correct as the calculations have been reproduced by the audit team with the attainment of the same results.

The assumptions and data used to determine the emission reductions are listed in the PDD and all the sources have been reviewed. Amongst others, the following sources of information were used for crosscheck the information contained in the PDD:

- Chinese Power Yearbooks (2010 - 2012)
- China Energy Statistics Yearbooks (2010 - 2012)
- IPCC values (Table 1.3/Table 1.4, Volume 2 Energy, 2006 version)

In conclusion, TÜV SÜD confirms the following statements in line with § 99 and § 100 of VVS

(a) All assumptions and data used by the project participants are listed in the PDD, including their references and sources;

(b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;

(c) All values used in the PDD are considered reasonable in the context of the proposed project activity;

(d) The baseline methodology and corresponding tool(s) have been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;

(e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD;

(f) Any estimates for monitored data or parameter are reasonable for estimating the emission reductions in the PDD

(g) Different options for equations and parameters are selected appropriately.

(h) The data and parameters fixed ex-ante are conservative and appropriate.

3.4 Validity of Monitoring plan

The project applies the approved monitoring methodology within ACM0002 (6th version). The original monitoring plan following the requirements of the CDM methodology ACM0002 was updated based on requirements of version 15 of the applied methodology.

The monitoring plan presented in the PDD complies with the requirements of the applicable methodology. The assessment team has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.

The procedures have been reviewed by the assessment team through document review and/or interviews with the relevant personnel. The information provided and a physical inspection has allowed the assessment team to confirm that the proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the PPs. Specifically; these points include the location of meters, data management, and the quality assurance and quality control procedures to be implemented in the context of the project. Therefore, TÜV SÜD confirms that the PP is able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.

The proposed project supplies the power to and imports small portion electricity from North China Power Grid via Zhangbei 220kV substation, where the project shares the gateway meter (M) with Zhangbei Manjing Windfarm Project (CDM ref. 0233, hereafter called the Manjing Project). Besides measuring the electricity delivered by both projects (EG_{total}), the bidirectional meter M does monitor the consumed power by both project ($E_{consume}$) as well. Manjing meter (M_1) was installed at the exit of 110kV substation at Manjing project site which measures the electricity delivered to the grid by Manjing project(E_I). Mijiagou meter (M_2) was fixed at the exit of 110kV substation at Mijiagou project site which measures the power delivered to the grid by Mijiagou project(E_{II}). The net electricity delivered by the proposed project (EG_y) could be figured out via following formulae:

(1) $EG_{y:}$ net electricity supplied to the grid by the Project

(2) EG_{II}: calculated electricity delivered by the Project

(3) E_I: electricity generation metered from the Zhangbei Manjing Windfarm Project site via M1

(4) E_{II}: electricity generation metered from the Project site via M2

(5) EG_{total}: total power generation to the grid of the two projects at the 220kV substation via M

(6) $E_{consume}$: total power consumption of the two projects at the 220kV substation via M

$EG_{II}=EG_{total} \times E_{II}/ (E_I + E_{II})$

$EG_y = EG_{II} - E_{consume} =EG_{total} \times EII/ (E_I + E_{II}) - E_{consume}$

It has been verified that the monitoring facilities, monitoring system and recording procedure remain the same in the 2nd crediting period.

Baseline emission is calculated based on net electricity (EGy) and emission factor of the grid ($EF_{grid,CM,y}$).

$BE_y = EG_y * EF_{grid,CM,y}$

According to applied methodology (ACM0012, 15th version), the project emission does not need to be considered because it's a windfarm project and no fossil fuel consumption is detected.

$PE_y = 0$

Furthermore, in accordance with the methodology, leakage is not required as well.

Leakage = 0

Therefore, the emission reduction is equal to the baseline emission.

$ER_y = BE_y$

It can be confirmed that the level of accuracy and completeness in the monitoring and verification process is not reduced in the 2nd crediting period and in line with the latest version of methodology.

Annex 1
List of Findings

No finding was detected during the assessment process.

Annex 2
Information Reference List

Project title: Zhangbei Mijiagou 49.5 MW Windfarm Project

Interviewed Persons during onsite assessment:

Name	Function	Company
Jia Rui	General Manager	Zhangbei Guotou Wind Power Plant
Lv Xin	CDM Project Manager	Zhangbei Guotou Wind Power Plant
Liu Xiaohe	Plant Manager	Zhangbei Guotou Wind Power Plant
Wang Liang	O&M staff	Zhangbei Guotou Wind Power Plant

Other Interviewed Persons (not during onsite assessment):

Name	Function	Institution/Company	Date of Interview
n.a.	n.a.		

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
1.	IPCC	Guidelines for National Greenhouse Gas Inventories. Volume 2. Energy	2006	
2.	UNFCCC Webpage	PDD template (5th version)	5th version	
3.	UNFCCC Webpage	ACM0002 (15th version)	15th version	
4.	UNFCCC Webpage	Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period (version 03.0.1)	version 03.0.1	
5.	UNFCCC Webpage	Tool to calculate the emission factor for an electricity system (version 04.0)	version 04.0	
6.	UNFCCC Webpage	CDM project standard (version 07.0)	version 07.0	
7.	UNFCCC Webpage	CDM project cycle procedure (version 07.0)	version 07.0	
8.	Zhangbei Grid Company	Signed Power Purchase Agreement (PPA) with grid company	21st December, 2012	
9.	Nantong CASC Wanyuan Acciona Wind Turbine Manufacture Co., Ltd.	Technical Agreement of Wind Turbine Generators Purchase Contract (IT-77/1500-CII)	December, 2012	
10.	Zhangbei Grid Company	Diagram of power connection system of the Project	Obtained on 27th February, 2014	
11.		Technical Administrative Code of Electric Energy Metering (DL/T 448-2000)		
12.	General Office of the State Council	Notice on Strictly Prohibiting the Installation of Fuel-fired Generators with the Capacity of 135MW or below (decree No. 2002-6)	2002	
13.	Hebei DRC	Project Feasibility Study Report	March, 2006	
14.	UNFCCC	Approved monitoring reports in the period of 22 March 2007 – 31 December 2012		

Ref. No.	Author/Editor/ Issuer	Title/Type of Document. Publication place	Issuance and/or submission date (dd/mm/yyyy)	Additional Information (Relevance in CDM Context)
15.	Zhangbei Guotou Wind Power Plant	calculation spreadsheets for the 2nd crediting period		
16.	NDRC	http://cdm.ccchina.gov.cn/zyDetail.aspx?newsId=46143&TId=161 emission factor of North China Power Grid		
17.		Chinese Power Yearbooks (2010 - 2012)		
18.		China Energy Statistics Yearbooks (2010 - 2012)		
19.	Price Bureau of Hebei Province	Tariff document by Price Bureau of Hebei Province		

Annex 3
Appointment Certificates

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

South Asia

CERTIFICATE OF APPOINTMENT

Mr. Sun, Baoqi fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	ISO-14064-1: 2006	Other
	☒	☒	☐	☐	☐

Qualification as						
Status	Validator ☒	Verifier ☒	ATL ☐	Technical Reviewer ☐	Financial Expert ☐	Technical Expert ☒
TA (s)	1.1					

Country Expertise						
Region	1	2	3	4	5	Other
	☒	☐	☐	☐	☒	
Further countries						

Technical Area
1.1_Thermal energy generation

This appointment is valid until 31.01.2016 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.
In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.
Your Certificate has the internal reference no. CB-IND-CCP-0061/005.

Date	Signature
01/01/2015	

TÜV SÜD South Asia ● Solitaire, 4th Floor ● ITI Road, Aundh ● Pune – 411007 ● Tel.: +91 20 6684 1200 ● Fax: +91 20 6684 1261

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD South Asia

CERTIFICATE OF APPOINTMENT

Ms. Zhang, Cuiyun (Rachel) fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	ISO-14064-1: 2006	Other
	☒	☒	☐	☐	☐

Qualification as						
Status	Validator ☒	Verifier ☒	ATL ☐	Technical Reviewer ☐	Financial Expert ☐	Technical Expert ☒
TA (s)	1.2, 13.1					

Country Expertise						
Region	1	2	3	4	5	Other
	☒	☐	☐	☐	☒	
Further countries						

Technical Area
1.2_Renewables
13.1_Waste handling and disposal

This appointment is valid until 31.01.2016 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.
In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.
Your Certificate has the internal reference no. CB-IND-CCP-0056/005.

Date	Signature
01/01/2015	

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ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD South Asia

CERTIFICATE OF APPOINTMENT

Mr. Sharma, Shivraj fulfills the requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd to participate in audits.

Qualification applicable to					
Standard	CDM	GS	VCS	VER	Other
Date	28.12.12				

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		28.12.12	28.12.12	28.12.12	28.12.12	1.2, 3.1, 13.1

Other qualification						
Country Expertise						
Region	1	2	3	4	5	Other
Date	28.12.12					
Further countries						
Financial Expertise						
Date						

Qualification in technical areas	
Technical Area	**Date**
1.2_Energy generation from renewable energy source	28.12.12
3.1_Energy demand	28.12.12
13.1_Waste handling and disposal	01.03.13

This appointment is valid until 31.05.2014 and is bound by internal requirements of the Certification Body 'Environment and Energy' of TÜV SÜD South Asia Pvt Ltd.
In case of loss of validity of this certificate as per result of an assessment according to internal procedures or due to any other reason, it will be properly communicated to you.
Your Certificate has the internal reference no. CB-IND-CCP-0060/004.

Date	Signature
01.03.2013	
01.03.2014	