



VALIDATION REPORT FOUNDATION WIND ENERGY-I LIMITED

VERIFICATION OF THE FOUNDATION WIND ENERGY-I LIMITED 50 MW WIND FARM PROJECT

REPORT No.PAKISTAN-VD/0010/2012

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BUREAU VERITAS CERTIFICATION

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VALIDATION REPORT

Date of first issue: 24/11/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Foundation Wind Energy-I Limited UPM Umwelt-Projekt-Management GmbH	Client ref.: Mr. Muhammad Ali Shaukat

Summary:

Bureau Veritas Certification has conducted the validation of Foundation Wind Energy-I Limited 50 MW Wind Farm Project, owned by Foundation Wind Energy-I Limited, which is located in Gharo, Kutti Kun New Island in Taluka Mirpur Sakro, District Thatta, Sindh Province of Islamic Republic of Pakistan, on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design document and additional background documents; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the validation process is a list of Clarification Requests, Corrective Actions Requests, and Forward Actions Requests (CLs, CARs and FARs), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology ACM0002 / Version 13.0.0 and meets all relevant UNFCCC requirements for the CDM and the relevant host country criteria. Bureau Veritas Certification thus requests the registration of the project as a CDM project activity.

Report No.: PAKISTAN-VD/0010/2012	Subject Group: CDM
Project title: Foundation Wind Energy-I Limited 50 MW Wind Farm Project	
Work carried out by: Mr. H.B. Muralidhar – Team Leader Mr. Imran Altaf Bhatti – Team Member Mr. Salman Nazir Raja – Technical Specialist Mr. Jayaram GN – Financial Specialist	
Internal Technical Review carried out by: Mr. Sanjay Patanar - Internal Technical Reviewer V. Senthil Kumar – Specialist Supporting ITR	
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Work approved by:

Flavio Gomes

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Abbreviations

BVCH	Bureau Veritas Certification Holding SAS
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
FAR	Forward Action Request
GHG	Green House Gas(es)
MoV	Means of Verification
MP	Monitoring Plan
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard



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1. INTRODUCTION

Foundation Wind Energy-I Limited has commissioned Bureau Veritas Certification to validate its CDM project Foundation Wind Energy-I Limited 50 MW Wind Farm Project (hereafter called “the Project”) at Gharo, Kutti Kun New Island in Taluka Mirpur Sakro, District Thatta, Sindh Province of Islamic Republic of Pakistan.

This report summarizes the findings of the validation of the Project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1. Objective

The objective of a validation is to provide a thorough and independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan, and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meets the applicable CDM requirements and the identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

1.2. Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the requirements of paragraph 37 of the CDM M&Ps, the applicability conditions of the selected methodology and guidance issued by the Board.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3. Validation Team

The assessment team and internal technical reviewer team consist of the following personnel:

FUNCTION	NAME	TA 1.2	TA X.X	TASK PERFORMED*
Team Leader	Mr. H.B. Muralidhar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input checked="" type="checkbox"/> RI <input type="checkbox"/> TR
Team Member	Mr. Imran Altaf Bhatti	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input checked="" type="checkbox"/> RI <input type="checkbox"/> TR
Technical Specialist	Mr. Salman Nazir Raja	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input checked="" type="checkbox"/> RI <input type="checkbox"/> TR
Internal Technical Reviewer (ITR)	Mr. Sanjay Patankar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input checked="" type="checkbox"/> TR



Specialist supporting ITR	V. Senthil Kumar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input checked="" type="checkbox"/> TR
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*DR = Document Review; SV = Site Visit; RI = Report issuance; TR = Internal Technical Review

2. METHODOLOGY

The overall validation, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the version 03.0 of the Clean Development Mechanism Validation and Verification Standard, issued by CDM Executive Board at its 70th meeting on 23/11/2012 (Ref /56/). The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The completed validation protocol is enclosed in Appendix A to this report.

2.1. Review of Documents

The Project Design Document (PDD) submitted by UPM Umwelt-Projekt-Management GmbH and additional background documents related to the project design and baseline i.e. country Law, Guidelines for Completing the Project Design Document (CDM-PDD), Approved methodology, Kyoto Protocol, Clarifications on Validation Requirements to be Checked by a Designated Operational Entity were reviewed.

Furthermore, cross checks were made between information provided in the PDD and information from sources other than those used.

To address Bureau Veritas Certification corrective action and clarification requests, UPM Umwelt-Projekt-Management GmbH revised the PDD and resubmitted it on 21/12/2012.

The validation conclusions presented in this report relate to the project as described in the PDD version 1.3.

2.2. Follow-up Interviews

On 20/09/2012 & 24/09/2012, Bureau Veritas Certification performed a site visit and interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Foundation Wind Energy-I Limited and UPM Umwelt-Projekt-Management GmbH were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Foundation Wind Energy-I Limited (the Project Owner)	<ul style="list-style-type: none"> ➤ Project description ➤ Contribution towards sustainable development ➤ CDM consideration ➤ Methodology applicability ➤ Baseline determination ➤ Additionality ➤ Operational aspects ➤ Monitoring methodologies, plans and procedures ➤ Environmental Impacts ➤ Local stakeholders consultation and resolution of their concerns ➤ Supporting data and documentation ➤ Resolution of CARs and CLs
Local Stakeholder	<ul style="list-style-type: none"> ➤ Views and concerns about the project activity ➤ Social and economic benefits due to project activity ➤ Confirmation of the local stakeholders consultation meeting conducted by the project participants
UPM Umwelt-Projekt-Management GmbH (the Consultant)	<ul style="list-style-type: none"> ➤ Project category ➤ Baseline determination ➤ Methodology applicability ➤ GHG emission reduction calculations ➤ Additionality ➤ Monitoring plan ➤ Resolution of CARs and CLs

2.3. Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the validation is to resolve issues that require further elaboration, research or expansion prior to Bureau Veritas Certification's positive conclusion on the project design.

A Corrective Action Request (CAR) is raised, if one of the following situations occurs:

- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable, verifiable and additional emission reductions;
- (b) The applicable CDM requirements have not been met;
- (c) There is a risk that emission reductions cannot be monitored or calculated.

A Clarification Request (CL) is raised, if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A Forward Action Request (FAR) may also be raised during validation, to identify issues related to project implementation that require review during the first verification of the project activity.



To guarantee the transparency of the validation process, the issues raised, the responses provided by the project participants, the means of validation of such responses and references to any resulting changes in the PDD or supporting annexes are documented in the Validation Protocol in Appendix A.

2.4. Internal Technical Review

The validation report underwent an Internal Technical Review (ITR) before requesting registration of the project activity.

The ITR is an independent process performed to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as internal Bureau Veritas Certification procedures.

The Team Leader provides a copy of the validation report to the reviewer, including any necessary validation documentation. The reviewer reviews the submitted documentation for conformance with the validation scheme. This will be a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the reviewer ensures that:

- The validation activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.
- The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs and CLs during the validation exercise, review of sample documents.

The reviewer may raise Clarification Requests to the validation team and will discuss these matters with the Team Leader.

After the agreement of the responses to the Clarification Requests from the validation team as well as the PP(s), the finalized validation report is accepted for further processing such as uploading via the UNFCCC interface.

3. VALIDATION CONCLUSIONS

In the following sections, the conclusions of the validation are stated.

The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Validation Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the Project resulted in 18 CAR(s), 10 CL(s) and 00 FAR(s).



The CARs and CLs were closed out based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

The number between brackets at the end of each section corresponds to the VVS paragraph.

3.1. Approval (43-44)

The letters of approval have been received and the following support documentation has been verified by Bureau Veritas Certification:

The DNA of Islamic Republic of Pakistan has issued a Letter of Approval (Ref /3/) on 23/10/2012 authorizing Foundation Wind Energy-I Limited as the Project Participant and confirms that the Project contributes to Sustainable development in Islamic Republic of Pakistan.

The DNA of United Kingdom of Great Britain and Northern Ireland has issued a Letter of Approval (Ref /4/) on 02/11/2012, authorizing UPM Umwelt-Projekt-Management GmbH as the Project Participant for the Project in Islamic Republic of Pakistan.

Bureau Veritas Certification received these letters of approval from the project participants and does not doubt the letters' authenticity.

Project participants provided copies of these letters (Ref /3/ & /4/) to the validation team. The letters of approval clearly state that Islamic Republic of Pakistan and United Kingdom of Great Britain and Northern Ireland have ratified the Kyoto Protocol and the approvals are for voluntary participation in CDM project activity. The approvals from designated national authorities mention the project title as mentioned in PDD. Also, the letters of approval mention that project contributes to sustainable development. The letters are unconditional with respect to party to the Kyoto Protocol, voluntary participation, contribution to sustainable development and title of project activity. The authenticity of LoA issued by the Designated National Authority of Islamic Republic of Pakistan was verified through review of the original LoA Ministry of Climate Change, Government of Islamic Republic of Pakistan, dated 23/10/2012.

LoA issued by the Designated National Authority of United Kingdom was verified through review of the original LoA issued by Environment Agency, dated 02/11/2012.

The letters of approval do not refer to a specific version of the validation report.

In accordance with para. 39 – 42/VVS, Bureau Veritas Certification considers that:

- (a) Each letter confirms the Party is a Party to the Kyoto Protocol;
- (b) Each letter confirms the participation is voluntary;
- (c) In the case of the host Party, the letter confirms that the proposed project activity contributes to the sustainable development of the country;
- (d) Each letter refers to the precise proposed project activity title in the PDD being submitted for registration.
- (e) The letter(s) of approval is unconditional with respect to the items above.



- (f) The letter(s) of approval has been issued by the respective Party's DNA and is valid for the proposed project activity under validation.

3.2. Authorization (49)

The participation for the project participant, Foundation Wind Energy-I Limited has been approved by Islamic Republic of Pakistan, which is a party of the Kyoto Protocol. This was checked from the website of UNFCCC (<http://cdm.unfccc.int/DNA/index.html>) in which Islamic Republic of Pakistan is represented by its Designated National Authority.

The participation of UPM Umwelt-Projekt-Management GmbH is also approved United Kingdom of Great Britain and Northern Ireland, which is also a party of the Kyoto Protocol. Environment Agency is representing United Kingdom as DNA and is available on UNFCCC website (<http://cdm.unfccc.int/DNA/index.html>).

The participation is approved by Designated National Authorities of Islamic Republic of Pakistan and United Kingdom of Great Britain and Northern Ireland and is accepted. The participation for project participants has been approved by Parties of the Kyoto Protocol. The validation team concluded this by reviewing the Host Country Approval (HCA) and Sponsor Country Approval (Ref /3/ & /4/) which describes the participation of Foundation Wind Energy-I Limited and UPM Umwelt-Projekt-Management GmbH being approved by the Governments of Islamic Republic of Pakistan and United Kingdom of Great Britain and Northern Ireland, which are parties of the Kyoto Protocol.

The project was webhosted on the UNFCCC for global stakeholder's comments as per CDM requirements. The project was webhosted from 25 August 2012 to 23 September 2012. Comments received during the webhosting of the PDD were responded by Project Participants appropriately.

3.3. Sustainable Development (52)

The host Party's DNA has confirmed the contribution of the Project to the sustainable development of the host Party. Please refer to section 3.1 of this report.

3.4. Modalities of Communications (58,61)

The validation team has performed due diligence on the MoC statement and validated the corporate identity of all project participants and focal points included in the Modalities of Communication (MoC) statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories. Corporate identity of the signatories on MoC from UPM was verified through the valid passport copies which bear the signature, photograph and name of the signatories. Corporate identity of the signatories on MoC from Foundation Wind Energy-I Limited was verified through computerized national identity cards (CNIC) issued by the Government of Pakistan bearing signature, photograph and name of the signatories.

Bureau Veritas Certification confirms that the MoC statement complies with all relevant forms and requirements.



3.5. Project Design Document (63)

Bureau Veritas Certification hereby confirms that the PDD complies with the latest forms of the guidance documents for completion of PDD.

3.6. Changes in the Project Activity (17)

During the site visit, no physical changes pertaining to the project design was observed as compared to details mentioned in the webhosted PDD.

CAR 1 was raised as abbreviations in the PDD needed to be explained. After all abbreviations in the PDD had been explained, the CAR was closed.

CAR 2 was raised as amount of annual average GHG emission reduction at title page of the PDD was not consistent with the emission reduction calculation. Correction was made in the PDD, the CAR was closed.

CAR 3 was raised as power generation value in §A.3. of the PDD was not consistent §A.1. of the PDD. Correction was made in the PDD, the CAR was closed.

CAR 4 – 7 were raised for adding more technical details in §A.3. of PDD according to EB66 Annex8, the technical details were added in the PDD and supporting documents were provided for review. Based on the correctness of information provided in the PDD, the CARs are closed.

CAR 8 was raised for adding more details in §B.5. of PDD regarding serious consideration of CDM to proceed with the project activity. The details were provided in the PDD and supporting documents were provided for review. Based on the correctness of information provided in the PDD, the CAR is closed.

CAR 9 was raised as 23/08/2011 was mentioned as date of investment decision in §B.5. of the PDD. The description in the PDD was corrected, the CAR is closed.

CAR 10 was raised to add more details in the PDD regarding implementation of project activity as legal binding. The information was added in the PDD. Based on the correctness of information provided in the PDD, the CAR is closed.

CAR 11 & 12 were raised to have more details in the PDD regarding application of first-of-its-kind barrier. The details were provided in the PDD. Based on the correctness of information provided in the PDD, the CARs are closed.

CAR 13 was raised to adapt the emission reduction algorithm in the PDD according to the algorithm provided by the applied methodology. Based on the correctness of information provided in the PDD, the CAR is closed.

CAR 14 was raised to include the information of data and parameters for grid emission factor in §B.6.2. of the PDD. Since grid emission factor is a monitoring parameter, it is included in B.7.1. Based on the updated PDD, the CAR is closed.



CAR 15 – 18 were raised to adapt the grid emission factor calculation according to EB63 Annex19. The calculations are updated and the CARs are closed.

CL 1 was raised to get copy of ERPA. The ERPA has been delayed due to some unforeseen reasons and the Project Participant has excluded the information of ERPA from PDD. Based on the updated information in the PDD, CL is closed.

CL 2 was raised to get LoA from DNA of each party involved. LoA from DNA of each party were provided (Ref /3/ & Ref /4/), the CL is closed.

CL 3 was raised to get Modalities of Communication Form, the latest available form F-CDM-MOC appropriately filled was provided (Ref /44/), the CL is closed.

CL 4 was raised to get evidence/affirmation regarding no involvement of public funding & ODA in the project activity. A declaration from Company Secretary Foundation Wind Energy-I Limited was provided (Ref /33/), the CL is closed.

CL 5 was raised to get updated information about chronology of milestones in the implementation of the project activity. The updated information was provided and CL is closed.

CL 6 was raised to get copy of Power Purchase Agreement (PPA). The PPA has been delayed as information provided by Project Participant and hence excluded from PDD. Based on the updated information in the PDD, CL is closed.

CL 7 & 8 were raised to get spreadsheet of grid emission factor calculation (Ref /41/) and ex-ante emission reduction calculations (Ref /42/), respectively. The requisites were provided to validation team, the CLs are closed.

CL 9 was raised to clarify details on delineation of the project electricity system and connected electricity system for grid emission factor calculation. The details were provided and the CL is closed.

CL 10 was raised to justify share of low-cost/must-run resources for grid emission factor calculation. The justification was provided in the PDD and supporting evidences were provided, the CL is closed.

The validation team hereby confirms that the PDD complies with the latest PDD format (Ref /48/) and Guidelines for Completing the PDD (Ref /47/).

3.7. Project Description (69)

The Project is a newly built wind farm located in area of Gharo, Kutti Kun New Island in Taluka Mirpur Sakro District Thatta, Sindh Province of Islamic Republic of Pakistan, within a narrow corridor, spanned by the following coordinates:

Latitude	Longitude
24° 36' 49.52" N	67° 24' 49.76" E
24° 36' 47.39" N	67° 24' 41.36" E
24° 37' 05.22" N	67° 24' 21.75" E



24° 37' 14.56" N	67° 23' 52.80" E
24° 37' 15.40" N	67° 23' 37.86" E
24° 37' 10.34" N	67° 23' 23.85" E
24° 36' 50.36" N	67° 23' 24.32" E
24° 36' 29.99" N	67° 23' 38.34" E
24° 35' 47.12" N	67° 23' 38.35" E
24° 35' 27.60" N	67° 23' 51.89" E
24° 35' 47.55" N	67° 24' 20.82" E
24° 36' 07.93" N	67° 24' 20.35" E
24° 36' 23.63" N	67° 24' 34.82" E
24° 36' 20.24" N	67° 24' 50.70" E

The process undertaken to validate the accuracy and completeness of the project description is as follows:

The purpose of the Power Generation through Wind Energy at Foundation Wind Energy-I Limited is to utilize wind resources for electricity generation through the construction of a wind farm with a total capacity of 50 MW and to deliver the electricity generated from the project to National Transmission and Despatch Company Limited (NTDC) which is operating the Water and Power Development Authority (WAPDA) grid. By replacing the electricity of the WAPDA grid, which is heavily dominated by fossil fuel fired power plants, with electricity generated from wind power the proposed project activity will achieve obvious greenhouse gas (GHG) emission reductions by avoiding CO₂ emissions.

Prior to the start of implementation of the project activity, there is no power generation unit at the site of the proposed project. The electricity grid is dominated by fossil fuel-fired power plants

The project activity involves installation of 20 WTGs (Wind Turbine Generators) of capacity 2.5 MW each (Model: Nordex N100/2500) and shall deliver to national grid at 132 kV. The project activity shall supply an average annual generation of 144,500 MWh to the WAPDA grid and thereby reduce the baseline grid emissions by an annual 89,214 t CO₂ e.

The project activity is in line with host-country requirements because it:

- is approved for voluntary participation by DNA of Islamic Republic of Pakistan
- improves economic performance of country by generating electricity for national grid
- offers job opportunities to local people during its construction and operation
- results in significant reduction of GHG emissions
- transfers modern technology from Germany to the host country

Validation team validated the accuracy of the project description through a combination of steps consisting of review of Letter of intent from AEDB (Ref /14/), Agreement for land lease (Ref /18/), Feasibility study report of the project activity (Ref /15/), power production estimates by AEDB (Ref /23/), Technical description of Wind Turbine Generator System Nordex N100/2500 (Ref /8/), Offshore Supply Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /5/), Onshore contract for engineering, procurement, construction, operation & maintenance between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /6/), O&M Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /7/), Tariff



Petition filed to National Electric Power Regulatory Authority (NEPRA) (Ref /27/), site visit and interview of the project participant and their representatives (Ref /43/).

The Project will result in annual emission reductions of 89,214 tCO₂e during the ten years of its fixed crediting period.

The validation team confirms that the estimated PLF of 32.99 % is sourced from power production estimates by AEDB (Ref /23/), which is complying with the Para. 3(b) of "Guidelines for the Reporting and Validation of Plant Load Factors" / Version 01.0.

The validation did not reveal any information indicating that the Project can be seen as a diversion of official development assistance (ODA) funding towards the host country.

The project activity is being implemented by Fauji Foundation which has many subsidiaries. Prior to the start date of the project activity, the project activity was being implemented by Beacon Energy Limited as evident from letter of intent from AEDB to Beacon Energy Limited (Ref /14/).

Later in March 2010 (prior to the start date of the project activity), Fauji Foundation decided to acquire this project from Beacon Energy Limited (Ref /11/) and after acquisition of it, formed a new subsidiary Foundation Wind Energy-I Limited as sponsor of the proposed CDM project activity. The DOE reviewed relevant documents consisting certificate of incorporation on change of name of Beacon Energy Limited to Foundation Wind Energy-I Limited (Ref /13/), and No objection certificate from Competition Commission of Pakistan (Ref /12/). All the documents for change of sponsor for implementation of project activity were found authentic, consistent, and satisfactory.

The processes undertaken by the validation team to validate the accuracy and completeness of the project description include conducting a physical site inspection, reviewing available designs and feasibility studies, conducting comparison analysis with equivalent projects.

Bureau Veritas Certification hereby confirms that the project description in the final PDD is accurate and complete in all respects.

3.8. Baseline and Monitoring Methodology

3.8.1. Applicability of the selected Methodology (77)

This methodology is applicable to grid-connected renewable power generation project activities that install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant). The project activity involves installation of wind turbine generators with a total capacity of 50 MW and to deliver the electricity generated to National Grid of Pakistan.

The Project uses the approved consolidated baseline and monitoring methodology ACM0002 / Version 13.0.0 – "Consolidated Baseline Methodology for grid connected electricity generation from renewable resources" (Ref /49/).

The applicability of the selected methodology is justified and assessed as follows:



Project equipment comprising of 20 Nordex N100/2500 wind turbine generators will be supplied by Nordex. The construction and commissioning of the project activity will be performed by Nordex-Descon JV. The operations and maintenance of the project activity will be performed by Nordex-Descon JV (Ref /6/ and Ref /7/). The Offshore Supply Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /5/), Onshore contract for engineering, procurement, construction, operation & maintenance between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /6/), O&M Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /7/) and physical verification at site indicate that the project activity involves installation of wind turbine generators alone and therefore is a renewable energy project. The contracts also indicate that the wind turbine generators are new and are not transferred. This is confirmed from the scope of work mentioned in the Contracts (Offshore Supply Contract and Onshore EPC and O&M Contract), which includes supply, installation and commissioning of 20 numbers of 2.5 MW capacity Nordex WTGs. The land for the project activity is provided by Alternative Energy Development Board (AEDB). Agreement to Lease between Foundation Wind Energy-I Limited and Alternative Energy Development Board (AEDB) (Ref /18/), demonstrate that the land utilized for project activity is exclusively leased for wind power projects. Hence, the project activity is the installation of a new renewable energy project at a site where no renewable power plant was operated prior to the implementation of the project activity and is therefore classified as a Greenfield project.

1. The Grid connectivity was verified through the following :

- Vetting of final reports of Electrical Grid Interconnection Studies for Wind Power Projects (WPP) by National Transmission & Despatch Company Limited (NTDC) (Ref /21/ & Ref /22/).
- Application submitted to National Electric Power Regulatory Authority (NEPRA) for the Grant of Generation License (Ref /25/)
- Generation license issued by NEPRA (Ref /26/)
- Letter from NEPRA to Foundation Wind Energy-I Limited for determination of the generation tariff (Ref /28/).
- The validation team, during its visit to the site of the project activity also verified that no grid is available in the vicinity of the project activity and NTDC will provide a grid station providing interconnectivity to the project activity as stated in the letter issued by National Transmission and Distribution Company Ltd. (NTDC) (Ref /21/ & Ref /22/).

2. Project equipment comprising of 20 Nordex N100/2500 wind turbine generators will be supplied by Nordex. The construction and commissioning of the project activity will be performed by Nordex-Descon JV. Offshore Supply Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /5/), Onshore contract for engineering, procurement, construction, operation & maintenance between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /6/), O&M Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /7/), physical verification by the team at site indicates that the project activity is not addition of a renewable and non-renewable component. Only wind turbine generators are involved in the project activity and the capacity of the total installation is 50 MW, which is above the threshold limit of 15 MW. Hence, the project activity is a greenfield installation classified as a "large scale project activity" and does not involve capacity addition or retrofit or replacement of any kind. The project falls under Sectoral Scope-1 Energy Industries (Renewable/Non-renewable sources).
3. The project activity does not involve switching from fossil fuels to renewable energy sources at the project activity site nor is a biomass fired power plant. It is only a wind turbine generator based electricity generation project.



4. The project activity is not a hydro power plant and hence none of the applicability conditions of the ACM0002 methodology with respect to hydro power plants are applicable.

The project activity is a greenfield wind energy based grid-connected renewable power generation project activity which does not involve usage or switching of fossil fuels, hence the project activity meets the applicability conditions of approved applied methodology ACM0002. The project activity involves the installation of wind power plant and does not include installation, capacity addition, retrofit or replacement of geothermal power plant, solar power plant, wave power plant or tidal power plant.

The DOE hereby confirms that the selected baseline and monitoring methodology, ACM0002, "Consolidated Baseline Methodology for grid connected electricity generation from renewable resources" / Version 13.0.0 (Ref /49/) is previously approved by the CDM Executive Board, and is applicable to the project activity, which, complies with all the applicability conditions therein.

3.8.2. Project Boundary (86-87)

The validation team has validated the project boundary by:

a) The spatial extent of the project boundary is assessed through the description in the PDD and the grid structure in Pakistan as known from the official data available for the Water and Power Development Authority (WAPDA) in Pakistan Energy Yearbook 2011 (Ref /39/) published on an annual basis by Ministry of Petroleum and Natural Resources, Government of Pakistan. The project activity boundary therefore includes the project activity wind turbine generators and all power plants connected physically to the WAPDA electricity grid that the CDM project power plant will be connected to. The consideration of only CO₂ gas for the baseline emissions is conservative and in line with the methodology and hence appropriate. The electricity imported by the project activity is accounted for in the net electricity exported by the project activity, $EG_{\text{facility},y}$. There are no other sources of project emissions. Hence, the project emissions are considered to be zero, which is in line with the applied methodology. It is also confirmed by verifying the EPC Contract of Foundation Wind Energy-I Limited comprising of Offshore Supply Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /5/), Onshore contract for engineering, procurement, construction, operation & maintenance between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /6/), O&M Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /7/), that the equipment in the project activity are new and the project does not involve any transfer of equipment from or to the project activity. Thus, there is no leakage accountable to the project activity.

b) The project design is sound and the geographical location (Gharo, Kutti Kun, Taluka Mirpur Sakro, Thatta District, Sindh, Islamic Republic of Pakistan) and boundaries of the project activity are clearly defined. The metering point to record net electricity exported to grid shall be at the high voltage side (132kV) of the wind farm i.e. at the node of point of interconnection of wind farm substation to the national grid. Project participant has taken a lifetime of 20 years for the wind turbine generators as provided by WTG manufacturer Nordex (Ref /5/).

The validation team confirms that the only greenhouse gas relevant to the project activity is CO₂. This gas is addressed by the applied methodology. Based on the above assessment, the



validation team hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.

Bureau Veritas Certification hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity. The validation team did not identify any emission sources that will be affected by the implementation of the proposed project activity and which are expected to contribute more than 1% of the overall expected average annual emissions reductions, and are not addressed by the selected approved methodology.

3.8.3. Baseline Identification (94-95)

The procedure contained in the methodology to identify the most reasonable baseline scenario has been correctly applied.

Validation team assessed the baseline identification by the project participant using the provisions of the applied methodology. As per the applied methodology ACM0002 / Version 13.0.0, the baseline for a new grid connected renewable power plant / unit (Greenfield project) is defined as:

“Electricity delivered to the grid by the project activity (that) 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”

The baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid, CM, y}$$

Where BE_y = Baseline Emissions in year y (t CO₂).

$EG_{PJ,y}$ = 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).

$EF_{grid, CM, y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the applicable version of the “Tool to calculate the emission factor for an electricity system” (t CO₂ / MWh).

As per ACM0002, the project participant has used the tool to calculate emission factor for an electricity system, version 2.2.1 (Ref /50/) for the determination of $EF_{grid, CM, y}$. The project participant following the tool has calculated combined margin emission factor, consisting of the simple average of the operating margin emission factor (OM) by utilizing an ex-ante 3-year data period and the build margin (BM) emission factor as follows:

$$EF_{grid, CM, y} = EF_{grid, OM, y} \times W_{OM} + EF_{grid, BM, y} \times W_{BM}$$

The project participant has used the 6 step process for the calculation of combined emission factor as required by the tool to calculate emission factor for an electricity system, version 2.2.1.

As per the tool, the project participant has identified the relevant electricity system in Step 1 which is the national grid managed and operated by Water And Power Development Authority (WAPDA). The validation team in consultation with the technical specialist and after performing the site visit agrees that the identification of electricity system is correct as the wind farm is



located in Gharo, District Thatta which lies in the domain of the national grid. The validation team also agrees that the project activity will not import electricity from the national grid however it will be exporting the electricity to the national grid. As required by the tool, electricity exports should not be subtracted from electricity generation data used for calculating and monitoring the electricity emission factors which is duly followed by the project participant in the emission factor calculation.

The project participant has used Option I of step 2 including only grid power plants in the calculations and excluding the off grid power plants. The validation team in consultation with the technical specialist agrees the selection of Option I of step 2 by the project participant as the methodology clearly allows the project participant to choose between the two options to calculate the operating margin and build margin emission factor. Also off grid power plants do not exist in Pakistan for commercial purposes and are only available within industry for captive use.

In Step 3, for the calculation of operating margin emission factor, the project participant has used the simple OM method (option (a) of Step 3) by justifying low-cost/must-run resources (hydel and nuclear) constitute less than 50% of total grid generation through the data available in Pakistan Energy Yearbooks of 2007-2011 (Ref /35/ to Ref /39/). The validation team in consultation with technical specialist reviewed the Pakistan Energy Yearbooks and confirms that the contribution of hydel and nuclear resources contribute less than 50% to the total amount of electricity generated in Pakistan from 2007 – 2011 and Option (a) of Step 3 is appropriately considered. According to the tool, for simple operating margin, ex-ante or ex-post data vintages can be used for the calculation of emission factor. Project participant has chosen the ex-post option which requires that each monitoring report would have to include the latest calculation of the operation margin emission factor. Since the latest data is not available earlier than eighteen months after the end of year y, the factor for the year proceeding the previous year (y-1) will be used for the calculations. Therefore, the operation margin that is calculated for the first year (2014) will be the one for 2013. Due to non-availability of data, the project participant has used the ex-ante option for the estimated emission reductions shown in Section B.6.4 of the PDD. The validation team in consultation with the technical specialist agrees that the choice of ex-post data vintage is appropriate as the tool allows the use of either ex-ante or ex-post data vintages and the project participant has selected the ex-post option complying to the conditions stated in the tool to calculate emission factor for an electricity system, version 2.2.1.

The project participant has used option B based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system in Step 4 and calculated the simple operation margin CO₂ emission factor for the year 2011 as 0.7184 t CO₂ e / MWh. The validation team in consultation with technical specialist agrees that Option B is correctly applied as net electricity generation and a CO₂ emission factor of each power unit in the electricity system is not available through any official source, also nuclear and hydel power generation are considered as low-cost/must-run power sources and the quantity of electricity supplied to the grid by these sources is known through the Pakistan Energy Yearbook. The last condition of exclusion of off grid power plants in the calculations is already complied by project participant in Option I of step 2. The validation team further agrees that the value of simple operating margin CO₂ emission factor (0.7184 t CO₂ e / MWh) is correctly computed using the appropriate formula according to “Option B – Calculation based on total fuel consumption and electricity generation of the system” as stated in the tool to calculate emission factor for an electricity system, version 2.2.1.



For build margin CO₂ emission factor calculation, project participant has chosen Option 2 ex-post data vintage and the build margin will be updated every year of the first crediting period requiring calculation of latest figures in each monitoring report for Step 5. Due to non-availability of data, the project participant has used the ex-ante option (Option 1) for the estimated emission reductions shown in Section B.6.4 of the PDD. Project participant has chosen Procedure (e) and (f) for the sample group of power units as it comprises the larger annual generation, for the proposed project. The calculation of the operation margin is based on the latest available data which is the average data from 2009 to 2011. For new plants, data that is more accurate is available. Therefore, the build margin that will be used by the project participant in the first year of the crediting period will be from 2011. The outcome of Step 5 is the build margin emission factor for the year 2011 as 0.3145 t CO₂ e / MWh. The validation team in consultation with technical specialist confirms that the choice of Option 2 for data vintage by project participant is appropriate based on the choice provided in the tool to calculate emission factor for an electricity system, version 2.2.1. The application of procedure and formula for calculation of build margin CO₂ emission factor is correctly applied according to the tool and the value of build margin CO₂ emission factor (0.3145 t CO₂ e / MWh) is correctly computed.

Project participant has calculated the combined margin CO₂ emission factor according to Option A i.e. weighted average combined margin method for the national grid in Pakistan for the year 2011 as 0.6174 t CO₂ e / MWh in the final Step 6. The validation team in consultation with the technical specialist agrees that Option A weighted average combine margin method is the appropriate method as Option B simple combined margin is not applicable as the prerequisites of Option B such as project activity is not located in a Least Developed Country (LDC) or in a country with less than 10 registered CDM projects at the starting date of validation and data requirements for the application of Step 5 have also been fulfilled above cannot be met are not applicable to the project activity.

The validation team in consultation with the technical specialist confirms that the values of Operation Margin CO₂ Emission factor, Build Margin CO₂ Emission Factor and Combined Margin CO₂ emission Factor have been correctly computed in line with the assumptions and options stated in the tool to calculate emission factor for an electricity system / Version 2.2.1. The calculation of grid emission factor and CERs available in PDD and Excel spreadsheets (Ref /41/ and Ref /42/, respectively) were reviewed by the technical specialist and found to be correct. The validation team compared the latest version of tool to calculate emission factor for an electricity system / Version 3.0.0 with the applied version of tool i.e. tool to calculate emission factor for an electricity system / Version 2.2.1 and confirms that the six step procedure for determination of emission factor used by the project participant is also inline with the latest version 3.0.0 and therefore the values of operating margin, build margin and combined margin remain unchanged. The values of net electricity generation supplied by the project, and grid emission factor shall be monitored ex-post.

It is noted that the selected baseline scenario is in line with the selected approved methodology. Validation team therefore confirms that the selected baseline scenario reasonably represents what would happen in the absence of the project activity.

Bureau Veritas Certification hereby confirms that:

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



- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- (d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;
- (e) The approved baseline methodology has been correctly applied to identify the most plausible baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed project activity.

3.8.4. Algorithms and/or Formulae used to determine Emission Reductions (99-100)

The steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).

As per ACM0002 / Version 13.0.0, the baseline for a new grid connected renewable power plant /unit (green-field project) is defined as Electricity delivered to the grid by the project activity (that) 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".

The project participant has calculated the baseline emissions by multiplication of the net electricity supplied by the project activity to the grid with the grid emission factor. The detailed algorithms are transparently described under sections B.6.3 of the revised PDD (Ref /2/). As required under ACM0002, equation 6, the baseline emissions are calculated by the algorithm:

$$BE_y = EG_{PJ,y} \times EF_{grid, CM,y}$$

Where BE_y = Baseline Emissions in year y (t CO₂).

$EG_{PJ,y}$ = 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).

$EF_{grid, CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the applicable version of the "Tool to calculate the emission factor for an electricity system" (t CO₂ / MWh).

The algorithm to calculate the emission reductions from the project activity are described as:

$$ER_y = BE_y - PE_y$$

where,

ER_y = emission reductions from the project activity (t CO₂ / year)

BE_y = Baseline Emissions in year y (t CO₂ / year)

PE_y = project emissions from the project activity (t CO₂ / year)



As described in ACM0002, project emissions for renewable energy projects are zero, and the leakage emissions are not to be considered. Hence leakage emissions are considered as zero.

Validation team assessed the calculations of estimated CERs as provided by project participant in a spreadsheet (Ref /42/). The assumptions in this spreadsheet were validated as follows:

Parameter, Value	Source of Information	Validation Justification
Project Capacity, 50 MW	Offshore Supply Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /6/)	The project capacity is as per the documents verified.
Number of WTGs, 20 of 2.5 MW Each	Offshore Supply Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /6/)	The number of machines is as per the documents provided.
Net Electricity supplied to the grid, 144,500 MWh at a load factor of 32.99%	Power production estimates by AEDB (Ref /23/)	The value is as per the documents provided which was reviewed by technical specialist and approved by AEDB.
Baseline Grid Emission Factor 2011, 0.6174 t CO ₂ e / MWh	Calculated by project participant and available in Annex 3 of the PDD (Ref /2/) and grid emission factor calculation spread sheet (Ref /41/)	The value is as per the documents provided which was reviewed by technical specialist.
Baseline Emissions, 89,214 t CO ₂ e / year	CER Excel spread sheet (Ref /42/)	The value is as per the CER Excel Spreadsheet provided which was reviewed by technical specialist.

The estimated annual average of emission reductions is approximately 89,214 t CO₂ e over the 10 year fixed crediting period of emission reduction represents a reasonable estimation using the assumptions given by the project activity. The validation team confirms that the estimates of baseline emissions can be replicated using the information provided. It also can be verified using the spreadsheet (Ref /42/) for calculations of emission reductions.

Bureau Veritas Certification hereby confirms that:

- All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- 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.

3.9. Additionality (104)

The steps taken and sources of information used, to cross-check the information contained in the PDD on this matter are described below:

Project participant has demonstrated additionality by using “Tool for the demonstration and assessment of additionality”, version 6.0.0 (Ref /51/). According to the tool, the project participant has defined alternatives to the project activity which includes proposed project activity undertaken without being registered as a CDM project activity and continuation of the current situation which states the use of all power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance. The additional power generated under the project would be generated in existing and new grid-connected power plants in the electricity system. Both alternatives are in compliance to the mandatory laws and regulations of Pakistan. The project participant has not performed the financial analysis and performed the barrier analysis.

The project activity has been identified as first-of-its-kind as the additionality tool states project is first in the applicable geographical area that applies a technology that is different from any other technologies able to deliver the same output and that have started commercial operation in the applicable geographical area before the start date of the project and project participants selected a crediting period for the project activity that is a maximum of 10 years with no option of renewal. Confirmation letter from DNA Pakistan (Ref /10/) mentions that no wind farm in Pakistan has achieved commercial operation date by 05/11/2012. The confirmation letter from DNA Pakistan is based on letter issued by National Transmission & Despatch Company Limited (NTDC) on 05/11/2012 (Ref /9/) which operates WAPDA grid in Pakistan. The letter from NTDC mentions that no wind farm in Pakistan has achieved commercial operation date by 05/11/2012.

It can also be cross-verified through Pakistan Energy Yearbook 2011 (Ref /39/) which mentions that no electricity is being generated through wind energy substantiating that no wind farm is in commercial production and no wind generated electricity is exported to the national grid of Pakistan, during 2011 before the start date of the project activity. Pakistan Energy Yearbook is an authentic and reliable source of data for energy generation and consumption of Pakistan. It is published on an annual basis by Ministry of Petroleum and Natural Resources, Government of Pakistan. Members of validation team based on their sectoral experience are able to confirm there is no electricity generation by wind power plants in the host country (Pakistan).

The project participants have also selected a fixed crediting period of maximum 10 years with no option of renewal. The first-of-its-kind conditions are justified by the project participant in the PDD. The project being first-of-its-kind faces potential problems including lack of local expertise during construction, operation and maintenance, lack of infrastructure for maintenance and spare parts supply leading to longer downtime of equipment and maintaining large inventory of spare parts which will have an additional cost impact and lastly the high risk factor for investors as the similar projects are not available in the country. As the project activity is identified as first-of-its-kind, the scenario of project activity not implemented as a CDM project is excluded from



possible alternatives. The second scenario of continuation of generation of electricity as per existing situation is not affected by barriers due to prevailing practice. According to the applied tool for the demonstration and assessment of additionality, common practice analysis is not required based on the first-of-its-kind nature of the project activity. The project activity is additional based on the steps of additionality tool justified by the project participant.

The DOE checked the letter from NTDC which mentions that no wind farm in Pakistan has achieved commercial operation date by 05/11/2012 (Ref /9/). This was further cross checked from the Confirmation letter issued by the DNA of host country (Pakistan) which states that no wind farm in Pakistan has achieved commercial operation date by 05/11/2012 (Ref /10/). The DOE based on the above assessment and as per the guidelines on additionality of first-of-its-kind project activities (Version 02, Annex 7, EB 69) therefore confirms that the project activity is first-of-its-kind in Pakistan. The DOE is in concurrence with the barriers and risks as identified by the project participant in the final PDD for demonstrating additionality. The documentation assessed such as letters from DNA Pakistan & NTDC is authentic.

3.9.1.Prior consideration of the Clean Development Mechanism (112)

The project participant started to explore the option of generation of electricity through wind energy and setting a wind farm in 2006. Policy for Development of Renewable Energy for Power Generation Employing Small Hydro, Wind and Solar Technologies was announced by Government of Pakistan in 2006 (Ref /34/). As per the policy, Alternative Energy Development Board (AEDB) invited expressions of interests from various local and foreign investors. Letter of intent was issued on 25/04/2005 by AEDB (Ref /14/) showing interest in the proposal and giving permission to the project participant to proceed with the project activity. The letter of interest also permitted the project participant to proceed for the acquisition of land through AEDB. The project participant proceeded for technical feasibility and the final approval of technical feasibility by AEDB was done on 27/02/2012 (Ref /24/). The project participant proceeded with finalization and signing of engineering, procurement and construction (EPC) contract on 23/08/2011 (Ref /5/) with Nordex-Descon JV for the supply of wind turbine generators.

The project participant has mentioned 23/08/2011, the date of signing of EPC Contract, in the PDD as the start date of the project activity. The DOE agrees 23/08/2011 as the start date of the project activity as actions prior to 23/08/2011 did not have any substantial financial obligation on the project participant. The actions prior to 23/08/2011 involved payment to AEDB for approval of project and land. Land lease acquisition date (13/03/2008) cannot be considered as start date of the project activity as acquisition of land doesn't obligate the project owner for implementation of the project activity. Land is acquired to install wind mast and to prepare feasibility study of the project. Based on the results of the feasibility study, the project owner decides whether to implement the project activity or not. By signing the EPC contract on 23/08/2011, which covers the major investment of the project activity, the project participant committed to invest and proceed for the installation and operation of the project activity. 23/08/2011 is the earliest date at which implementation of the project activity has begun by signing the contract agreement for supply of equipment and works for the proposed CDM project activity.

The DOE validated the project activity start date provided in the PDD by reviewing the Offshore Supply Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /5/), Onshore contract for engineering, procurement, construction, operation & maintenance between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /6/), O&M Contract between



Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /7/). All contracts are dated 23/08/2011.

The following chronology of events is available in the PDD Version 1.3 (Ref /2/):

The timeline of the Project has been validated as in Table 2 below:

Table 2 Timeline of the Project

Date	Events	Reference
25/04/2005	LOI (Letter of Intent) issued by AEDB (Alternate Energy Development Board)	(Ref /14/)
11/10/2006	Technical Feasibility of Beacon Energy Limited approved by AEDB	(Ref /16/)
13/03/2008	Agreement to Lease for Land signed with AEDB	(Ref /18/)
12/07/2011	Decision to start negotiations with Nordex (investment decision)	Resolution passed through circulation FWEL-I & FWEL-II
23/08/2011	EPC (Engineering Procurement Construction) contract (start date of the project)	(Ref /5/ & Ref /6/)
30/08/2011	Submission of Tariff Petition to NEPRA (National Electric Power Regulatory Authority)	(Ref /27/)
27/10/2011	IEE (Initial Environmental Examination)	(Ref /19/)
21/07/2011	Application for Generation License	(Ref /25/)
22/12/2011	Approval of Generation License by NEPRA	(Ref /26/)
22/02/2012	CDM Prior Consideration Note	(Ref /29/) and UNFCCC CDM website
02/03/2012	IEE accepted by SEPA (Sindh Environmental Protection Agency)	(Ref /20/)
16/03/2012	Final Tariff Determination by NEPRA	(Ref /28/)
23/04/2012	CDM Local Stakeholder Consultation (LSC)	(Ref /40/)
07/05/2012	Consultancy contract with UPM GmbH (CDM developer)	(Ref /32/)
23/10/2012	LOA (Letter of Approval) Host Country issued by DNA (Designated National Authority) of Pakistan	(Ref /3/)
02/11/2012	LOA issued by DNA of United Kingdom of Great Britain & Northern Ireland	(Ref /4/)

From the table above, the validation team is able to verify that the project activity start date determined as 23/08/2011 in the PDD is appropriate and is the earliest of the dates at which either the implementation or construction or real action of the Project began. This is in accordance with the latest CDM glossary.

It is a project activity with a start date of 23/08/2011 which is after 2 August 2008. The PDD for the project activity was published for global stakeholder consultation between 25/08/2012 to 23/09/2012, which is after the project activity start date, therefore intimation of prior consideration of the CDM is necessary. By referring to the list of prior consideration notifications from the UNFCCC website and communication between the project proponent, the secretariat and the host Party DNA on 22/02/2012 (Ref /29/) regarding the commencement of a new



project activity, the validation team confirms that the notifications regarding prior consideration of the CDM have been provided by the project participants within 180 days of the project activity start date.

From the above discussions, it is seen that the project participant was aware of CDM prior to the start date of the project activity. From the available evidence it is seen that the benefits of CDM were a decisive factor in the decision to proceed with the project activity. The validation team therefore agrees that project participant has proven CDM was seriously considered in the decision to proceed with the implementation of the project activity.

The DOE hereby confirms that the Period for Comments related to this project activity is from 25 Aug 12 – 23 Sep 12 and that the CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity.

Bureau Veritas Certification hereby confirms that the proposed project activity complies with the requirements related to the prior consideration of the CDM.

3.9.2. Identification of Alternatives (116)

The approved methodology ACM0002 / Version 13.0.0 (Ref /49/) prescribes the baseline for new grid connected renewable power plant / unit as Electricity delivered to the grid by the project activity (that) 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”.

Hence, as per para 113 of VVS / Version 03.0 (Ref /56/), and para 4 Tool for the demonstration and assessment of additionality / Version 06.0.0 (Ref /51/), no further analysis of alternatives is required, since the applied methodology, ACM0002 / Version 13.0.0 has itself prescribed the pre-defined baseline scenario.

3.9.3. Investment Analysis (123)

The project participant has not performed the investment analysis and proceeded for the additionality of project activity through barrier analysis justifying the project activity as first-of-its-kind. According to tool for demonstration and assessment of additionality / Version 06.0.0 (Ref /51/), the project participant can perform the additionality of the project activity through investment analysis or barrier or may also select to perform both investment and barrier analyses.

The DOE confirms that the project participant has correctly interpreted the requirements of tool for demonstration and assessment of additionality / Version 6.0.0, and is justified in excluding the investment analysis.

3.9.4. Barrier Analysis (127)

The steps taken to assess the relevant information contained in the PDD against each barrier are described below:



The project participant has demonstrated additionality of project activity through prevailing practice barrier analysis justifying the project activity as first-of-its-kind.

The project activity is considered first-of-its-kind as the tool for demonstration and assessment of additionality / Version 06.0.0 (Ref /51/) and guidelines on additionality of first-of-its-kind project activities (Version 02, Annex 7, EB 69) states project is first in the applicable geographical area that applies a technology that is different from any other technologies able to deliver the same output and that have started commercial operation in the applicable geographical area before the start date of the project and project participants selected a crediting period for the project activity that is a maximum of 10 years with no option of renewal.

Letter from NTDC which operates WAPDA (national) grid (Ref /9/), confirmation letter from DNA Pakistan (Ref /10/), and Pakistan Energy Yearbook 2011 (Ref /39/) clearly mentions that no electricity is being generated through wind energy substantiating that no wind farm is in commercial production and no wind generated electricity is exported to the national grid of Pakistan. The project participants have also selected a fixed crediting period of maximum 10 years with no option of renewal. The first of its kind conditions are justified by the project participant in the PDD.

The validation team in consultation with technical specialist reviewed similar wind energy projects in Pakistan. No wind energy project is in commercial production and all projects are in construction phase. The validation team reviewed the details of six similar wind energy projects namely Yunus Wind Energy, Foundation Wind Energy II, Sapphire Wind Energy, Metro Power Company, Gul Ahmed Wind Power, Zorlu Wind Energy. All these projects are importing wind turbine generators and relying on foreign expertise for construction, installation, commissioning, operations and maintenance. GE (USA), Nordex (Germany), Vensys (Czech Republic), Vestas (Denmark) are the equipment manufacturers and suppliers providing equipment as well as foreign expertise to the wind energy projects.

The validation team in consultation with technical specialist agrees that the project being first-of-its-kind faces risks and potential problems. These problems include non-availability of local expertise during construction, operation and maintenance, non-availability of spares and lack of infrastructure for maintenance. The validation team agrees that as project owner Foundation Wind Energy-I Limited may incur additional cost for maintaining large inventory of spare parts in order to avoid longer downtime of wind turbine generators. The validation team in consultation with technical specialist agrees that since projects are not in commercial production in Pakistan therefore the investment risk associated with wind energy projects is high and wind energy projects are not very attractive to investors. This could be evidenced from the information published on Alternate Energy Development Board (AEDB) official website (<http://www.aedb.org/wind.htm>) that Pakistan has an indicated potential of generation 346,000 MW through wind energy however only 19 companies have shown interest in wind energy projects. 13 companies have submitted the feasibility studies while generation license has been issued to seven companies. This data itself provides evidence of investor's lack of interest in pursuing wind energy projects.

The lack of local expertise, non-availability of infrastructure and spares is evident through the Offshore Supply Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /5/), Onshore contract for engineering, procurement, construction, operation & maintenance between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /6/), O&M Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /7/). Main technology supplier is a foreign company responsible for engineering, supply, installation,



commissioning, 10 years operations and maintenance services of wind turbine generators of the project activity. No local expertise of such nature is available in Pakistan.

The DOE after reviewing the letter from NTDC (Ref /9/), Confirmation letter from DNA Pakistan (Ref /10/), Pakistan Energy Yearbook 2011 (Ref /39/), Offshore Supply Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /5/), Onshore contract for engineering, procurement, construction, operation & maintenance between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /6/), O&M Contract between Foundation Wind Energy-I Limited and Nordex-Descon JV (Ref /7/) confirms that the project activity is first-of-its-kind in Pakistan and confirms that the barrier analysis performed is credible.

3.9.5. Common Practice Analysis (130)

According to tool for demonstration and assessment of additionality / Version 06.0.0 (Ref /51/), common practice analysis is not required in case of the project activity justifies first-of-its-kind conditions.

The DOE confirms that the project participant has correctly interpreted the requirements of tool for demonstration and assessment of additionality / Version 06.0.0, and is justified in excluding the common practice analysis.

3.10. Monitoring Plan (133)

The Project uses the approved consolidated monitoring methodology ACM0002 / Version 13.0.0.

Applicability of this methodology is justified in PDD as the proposed CDM project activity involves grid connected electricity generation from wind energy. Referring to the discussions on the applicability of the methodology in section 3.8.1 above, the validation team considers that the selected monitoring methodology is applicable to the Project.

Data and Parameters Monitored

The steps taken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design are described below. Validation team considers the monitoring plan to be complying with the requirements of the methodology for the following reasons:

1. The methodology ACM0002 / Version 13.0.0. requires measurement of quantity of net electricity generation supplied by the project plant/unit to the grid in year y. The project participant will perform continuous measurement of quantity of net electricity generation supplied by the project plant / unit to the grid in year y, $EG_{\text{facility, y}}$ in MWh through energy meters. Continuous measurements will be performed and monthly recording will be taken.

As per Standard Draft Energy Purchase Agreement (EPA) of AEDB which is available on the AEDB website <http://www.aedb.org/downloads.htm>, the method of calibration and frequency of tests will be agreed between FWEL-I and NTDC (grid company) based on knowledge of the performance and the design of the installed meters and the manufacturer's recommendations. The metering points to record net electricity exported to grid shall be at the high voltage side (132kV) of the power transformer of the wind



farm. An exclusive set of current and voltage transformers (0.2FS5 & 0.2 % accuracy class respectively) to feed the current and voltage to the Metering System shall be provided by FWEL-I. The metering system shall have an accuracy class of 0.2S and will be located within the substation. Besides the Metering System, which is used for billing purposes, there will be a Back-Up Metering System installed by FWEL-I, which will be of identical type and accuracy class. Both metering systems are not procured yet and shall be procured later near the time of commissioning.

The Metering System and the Back-Up Metering System shall be jointly sealed by NTDC and FWEL-I. The metering system will be under the custody of NTDC (grid company) and FWEL-I will have no authority to test and calibrate the metering system. Testing and calibration of the Metering System shall be carried out by NTDC (grid company) after giving appropriate notice to FWEL-I in line with the agreed frequency of testing or in the event of either Party having reasonable cause to believe the meters are outside the specified limits. Testing and calibration of Back-Up Metering System will be performed by FWEL-I based on agreements with NTDC (grid company), knowledge of the performance and the design of the installed meters and the manufacturer's recommendations.

In case the Metering System has a failure, the data from the Back-Up Metering System shall be used for emission reduction calculation.

2. The methodology ACM0002 / Version 13.0.0. requires calculation of combined margin CO₂ emission factor for grid connected power generation in year y calculated using the applicable version of the "Tool to calculate the emission factor for an electricity system". The project participant will perform annual calculation of Emission factor of the WAPDA grid, $EF_{grid, y}$, in t CO₂ / MWh using latest data from Pakistan Energy Yearbook, published by Ministry of Petroleum and Natural Resources and applicable version of "Tool to calculate the emission factor for an electricity system". Appropriateness of the data will be reviewed and changes will be applied annually by the project participant. It will be recalculated on an annual basis.

The validation team considers that the description of the monitoring plan contains all necessary parameters, that they are described and that the means of monitoring described in the plan complies with the requirements of the methodology including applicable tool(s).

Implementation of the Monitoring Plan

The project participant will appoint a monitoring manager to supervise the implementation of the monitoring plan, while further staff such as engineering staff, accounting staff and internal auditing staff, will be appointed to implement the monitoring plan. The engineering staff will be responsible for data collection (meter readings), daily maintenance of equipment and the emission reduction calculation. The accounting staff will be responsible for the process of power transactions with the power grid company and power sale receipts record keeping. The auditing staff will be responsible for reviewing the data and receipt collected, ensuring the transparency. The energy meters will be installed at the interconnection point to the grid for monitoring the electricity delivered to the grid. The accuracy of the meters and the annual calibration shall be according to National standards. The project participant and the grid company are responsible for checking the meters. They will ensure that the meters are sealed and not damaged. The periodical calibration and maintenance of the meters will comply with the related standards and



regulations of the national power sector. The meters will be sealed after calibration. Neither the project owner nor the power grid company could unseal or change the meters without the presence of the other party. The project participant will archive the monitored data electronically on monthly basis and will archive the paper documents as well on monthly basis. The project participant will maintain a copy of all the paper documents. The monitored data will be kept during the whole crediting period and 2 years after the end of the crediting period or until the last issuance of CERs, whichever occurs later.

The validation team considers that the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed project activity can be reported ex post and verified.

Bureau Veritas Certification hereby confirms that the monitoring plan complies with the requirements of the methodology including applicable tool(s), the monitoring arrangements described in the monitoring plan are feasible within the project design and the project participants are able to implement the described monitoring plan.

3.11. Environmental Impacts (137)

The project participants conducted an analysis of the environmental impacts of the proposed project activity, including transboundary impacts.

As per the Pakistan Environmental Protection Agency (Review of IEE and EIA) Regulations, 2000, (Ref /59/), the project activity does not require EIA. However according to Schedule 1 of Pakistan Environmental Protection Agency (Review of IEE and EIA) Regulations, 2000, an Initial Environmental Examination (IEE) of the project activity is required. An initial environmental examination (IEE) was performed in 2008 & 2011 and IEE Reports (Ref /17/ & Ref /19/) were submitted to the Office of the Director General, Sindh Environmental Protection Agency, Government of Sindh. Environmental approval was granted by Sindh Environmental Protection Agency. The project participants have undertaken an environmental management plan and a monitoring plan in order to mitigate and compensate any environmental impact/degradation caused during the construction and operation phase.

Project participant has obtained Environmental approval from Sind Environmental Protection Agency (Ref /20/), Host Country Approval (Ref /3/) from DNA of Pakistan and it is confirmed by the Authority that the project contributes to sustainable development in Pakistan. The project activity is in compliance with all current applicable legislations.

Bureau Veritas Certification hereby confirms that the project participants have undertaken an analysis of environmental impacts and an environmental impact assessment in accordance with procedures as required by the host Party.

3.12. Local Stakeholder Consultation (140)

The project participants have completed a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed project activity.



District Agriculture Officer, Deputy General Manager, National Commission for Human Development (NCHD), Site Manager, Society for Conservation & Protection Environment (SCOPE), Sindh Radiant Organization (SRO) and World Wide Fund for Indus (WWF) were visited from 19/04/2012 to 21/04/2012. A general stakeholder meeting to discuss stakeholder concerns on the Project Activity was held on 23/04/2012 at the project activity site in Gharo, Mirpur Sakro (Ref /40/). The method of invitation to the local stakeholders was through public notices posted at different locations in the area near the project site as well as by announcement and calling stakeholders on 16/04/2012. This was confirmed through onsite interview from stakeholders who participated in the stakeholders consultation meeting (Ref /43/).

The validation team opines that the time provided [more than 1 week] to the local stakeholders for providing comments on the project activity is adequate.

The list of participants, public notices inviting participation of interested local stakeholders, and minutes of the stakeholder meeting proceedings, maintained by the project participants (Ref /40/) were verified by the validation team. The stakeholders viewed this project as contributing to local environmental benefits and socio-economy. Overall, there was agreement that the project activity was a beneficial project from the local sustainable development.

During the validation site visit, the validation team also interviewed many of the local stakeholders for their views about the project activity (Ref /43/). The villagers confirmed that the stakeholder consultation meeting was held at the project site. The villagers expressed satisfaction over the project activity and confirmed that due to the project, there is no adverse effect or damage to land, vegetation etc. It was expressed that the project activity gives employment opportunity for the local public and thus contributes to the economic growth of the region.

Bureau Veritas Certification hereby confirms that comments that are relevant for the proposed project activity have been invited from local stakeholders, the summary of the comments received as provided in the PDD is complete, the project participants have taken due account of all comments received and have described this process in the PDD.

4. COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

The PDD using methodology ACM0002 / Version 13.0.0 was webhosted on the UNFCCC for global stakeholders comments as per CDM requirements. The project was webhosted from 25/08/2012 to 23/09/2012.

Comments were received from 02 persons. The project participant provided response to these comments. The validation team took due account of these comments and the respective responses while making the validation opinion. The details of the comments received, responses by the project participants and the explanation of how due account of these is taken by the validation team are attached as Appendix B with this validation report.



5. VALIDATION OPINION

Bureau Veritas Certification has performed a validation of the Foundation Wind Energy-I Limited 50 MW Wind Farm Project, which is located in Gharo, Kutti Kun New Island in Taluka Mirpur Sakro, District Thatta, Sindh Province of Islamic Republic of Pakistan. The validation was performed on the basis of UNFCCC criteria for the CDM, and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) desk review of the project design document and additional background documents; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion.

The project correctly applies the approved consolidated baseline and monitoring methodology ACM0002 / Version 13.0.0 and uses the applicable tool for the demonstration and assessment of additionality.

By synthetic description of the project, the project is likely to result in reductions of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated annual emission reductions of 89,214 tCO₂e during the ten years of its fixed crediting period.

The review of the project design documentation and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and the relevant host country criteria. Bureau Veritas Certification thus requests registration of the project as a CDM project activity.

Mr. Sanjay Patankar
Internal Technical Reviewer
26/12/2012

Mr. H.B. Muralidhar
Team Leader
26/12/2012



6. REFERENCES

Category 1 Documents:

Documents provided by project participants that relate directly to the GHG components of the project.

- /1/ Webhosted PDD / Version 1.0, dated 14/07/2012
- /2/ Final revised PDD, Version 1.3, dated 21/12/2012
- /3/ Host country approval for the project activity vide Reference No. F. No. MoCC/CDM/HCA-1(55)/CDM 2012 dated 23/10/2012
- /4/ Sponsor country approval for the project activity vide Reference No. EA/UPM/10/2012, dated 02/11/2012
- /5/ Excerpts from Offshore agreement for supply of equipment between Foundation Wind Energy-I Limited and Nordex Singapore Equipment Private Limited – Descon FZE Joint Venture, dated 23/08/2011 – Original seen during onsite validation visit
- /6/ Excerpts from Offshore agreement for engineering, procurement, construction, operation and maintenance between Foundation Wind Energy-I Limited and Descon Engineering Limited – Descon Integrated Projects Private Limited – Nordex Singapore Service Private Limited Joint Venture, dated 23/08/2011 – Original seen during onsite validation visit
- /7/ Excerpts from Agreement for eight year operation and maintenance service and supply between Foundation Wind Energy-I Limited and Nordex Singapore Service Private Limited – Descon Engineering Limited Joint Venture, dated 23/08/2011 – Original seen during onsite validation visit
- /8/ Technical specifications of Nordex N100/2500 WTG
- /9/ Letter No. COO/CPA/CE-II/MT-IV/CC/3847-49 dated 05/11/2012 from National Transmission & Despatch Company Limited regarding Commercial Operation Date of wind power plants in Pakistan
- /10/ Letter dated 14/11/2012 from DNA Pakistan regarding Commercial Operation Date of wind power plants in Pakistan
- /11/ Minutes of special central board of directors meeting held on 01/03/2010 regarding acquisition of Beacon Energy Limited wind farm project
- /12/ No objection certificate No. 302/CCP/MERGER/2010 dated 18/06/2010 from Competition Commission of Pakistan along with covering letter regarding acquisition of 100% of the share capital of Beacon Energy Limited by Fauji Foundation
- /13/ Certificate of incorporation on change of name “Beacon Energy Limited” to “Foundation Wind Energy-I Limited” issued by Securities and Exchange Commission of Pakistan on 27/12/2010
- /14/ Letter No. B/4/2/2005 dated 25/04/2005 from AEDB to Beacon Energy Limited as letter of intent for 50 MW wind power generation project
- /15/ Feasibility study report of Beacon Energy Limited dated 10/10/2006
- /16/ Letter No. B/3/1/2006 dated 11/10/2006 from AEDB to Beacon Energy Limited as approval of feasibility study
- /17/ Initial Environmental Examination (IEE) Report of Beacon Energy Limited dated 11/04/2008, and subsequent environmental approval from Sind Environmental Protection Agency dated 27/04/2009 Ref. No. EPA/2008/11/18/IEE/14
- /18/ Land lease agreement between Beacon Energy Limited and AEDB dated 13/03/2008
- /19/ Initial Environmental Examination (IEE) Report of Foundation Wind Energy-I Limited dated 27/10/2011



- /20/ Letter No. EPA/2008/11/18/IEE/14/2012 dated 02/03/2012 from Environmental Protection Agency, Government of Sindh as Environmental Approval of the project activity based on the IEE Report
- /21/ Letter No. GMPP/CEMP/TRP-380/7078 dated 30/11/2010 from National Transmission & Despatch Company Limited (NTDC) for vetting of grid interconnection study
- /22/ Letter No. COO/CPPA/CE/MT-III/Planning/8307-18 dated 04/12/2010 from National Transmission & Despatch Company Limited (NTDC) for vetting of grid interconnection study
- /23/ Letter No. B/3/1/BEL/07 dated 15/12/2011 from AEDB to Foundation Wind Energy-I Limited for verification of power production estimates
- /24/ Letter No. B/3/1/BEL/07 dated 27/02/2012 from AEDB to Foundation Wind Energy-I Limited as final approval of feasibility study
- /25/ Letter No. PD-4712/BEL from Foundation Wind Energy-I Limited to National Electric Power Regulatory Authority (NEPRA) dated 21/07/2011 as application for generation license
- /26/ Generation License No. WPGL/12/2011 dated 22/12/2011 issued by NEPRA
- /27/ Tariff petition dated 30/08/2011 filed to NEPRA
- /28/ Letter No. NEPRA/TRF-188/FWEL-2011/2043 dated 16/03/2012 issued by NEPRA for tariff determination
- /29/ Copy of F-CDM-Prior consideration form dated 22/02/2012 sent to UNFCCC secretariat and DNA Pakistan, along with covering letter No. PD-4702/BEL to DNA Pakistan
- /30/ Letter of intent for the CDM project activity from DNA Pakistan to Foundation Wind Energy-I Limited dated 23/05/2012
- /31/ Letter from UPM GmbH to Fauji Foundation regarding CDM consultancy services dated 14/12/2010
- /32/ CDM Consultancy contract with UPM GmbH dated 07/05/2012
- /33/ Declaration by Company Secretary Foundation Wind Energy-I Limited dated 02/10/2012 about no involvement of ODA or grant funding in the project activity
- /34/ Policy for Development of Renewable Energy for Power Generation 2006 issued by Government of Pakistan
- /35/ Pakistan Energy Yearbook 2007 published by Ministry of Petroleum & Natural Resources
- /36/ Pakistan Energy Yearbook 2008 published by Ministry of Petroleum & Natural Resources
- /37/ Pakistan Energy Yearbook 2009 published by Ministry of Petroleum & Natural Resources
- /38/ Pakistan Energy Yearbook 2010 published by Ministry of Petroleum & Natural Resources
- /39/ Pakistan Energy Yearbook 2011 published by Ministry of Petroleum & Natural Resources
- /40/ Stakeholders consultation report comprising meeting details, copy of public advertisement, comments from stakeholders, photographs of the meeting; compiled by Arch Associates on 23/04/2012
- /41/ WAPDA grid emission factor calculation Excel sheet
- /42/ Emission reductions calculation Excel sheet
- /43/ Site visit attendance / interview list of representatives of project participants, consultants, and stakeholders dated 20/09/2012 & 24/09/2012
- /44/ Modalities of Communication Form (F-CDM-MOC) filled for the project activity
- /45/ Letter dated 31/05/2012 from UPM GmbH to Bureau Veritas Certification (DOE) regarding global stakeholders comments



/46/ Excel sheet analysis of global stakeholders comments compiled by UPM GmbH

Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents used for cross-check.

- /47/ Guidelines for completing the project design document form / Version 01.0, EB66 Annex8
- /48/ PDD Form, CDM-PDD / Version 04.1
- /49/ ACM0002 / Version 13.0.0 - Consolidated baseline methodology for grid connected electricity generation from renewable sources
- /50/ Tool to calculate the emission factor for an electricity system / Version 2.2.1, EB63 Annex19
- /51/ Tool for the demonstration and assessment of additionality / Version 06.0.0, EB65 Annex21
- /52/ Guidelines for the reporting and validation of plant load factors / Version 01, EB48 Annex11
- /53/ Guidelines on completeness check of request for registration / Version 01, EB48 Annex60
- /54/ F-CDM-MOC / Version 02.1, Form for CDM Modalities of Communication in VVS track
- /55/ F-CDM-Prior Consideration / Version 01, Prior Consideration of the CDM Form
- /56/ CDM Validation and Verification Standard / Version 03.0, EB70 Annex3
- /57/ CDM Project Standard / Version 02.0, EB65 Annex2
- /58/ CDM Project Cycle Procedure / Version 03.0, EB70 Annex4
- /59/ Pakistan Environmental Protection Agency (Review of IEE and EIA) Regulations, 2000.

Persons interviewed:

Persons interviewed during the validation or persons that contributed with other information that are not included in the documents listed above.

Foundation Wind Energy-I Limited

- /1/ Mr. Muhammad Ali Shaukat, Financial Analyst
 - /2/ Mr. Waseem Ali, Arch Associates (Consultant of Foundation Wind Energy-I Limited)
 - /3/ Mr. Imran Ahmed, Arch Associates (Consultant of Foundation Wind Energy-I Limited)
 - /4/ Mr. Aon Muhammad, QA/QC Engineer, Descon Integrated Projects (Private) Limited (Contractor of Foundation Wind Energy-I Limited)
 - /5/ Mr. Muhammad Touseef, QA/QC Engineer, Descon Integrated Projects (Private) Limited (Contractor of Foundation Wind Energy-I Limited)
- UPM Umwelt-Projekt-Management GmbH
- /6/ Mr. Arif Alam, CEO Axis Environment Services (Local Representative of UPM GmbH)
- Local Stakeholder
- /7/ Mr. Muhammad Iqbal, Mechanical Workshop Owner
 - /8/ Mr. Dost Muhammad, Labourer
 - /9/ Mr. Ghulam Abbas, Labourer

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- /10/ Mr. Akhtar Ali, Shopkeeper
- /11/ Mr. Abdul Jabbar, Welding Workshop
- /12/ Mr. Mustansar Hussain, Pesticides Sales Officer



7. CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

Mr. H.B. Muralidhar	Bureau Veritas Certification, India	Lead auditor in Bureau Veritas Certification for Environment Management System, Quality Management System and Occupational Health and Safety Management System. Graduate in Electrical engineering with 25 years of experience in power generation and distribution related fields as well as in management system auditing. He has undergone intensive training on Clean Development Mechanism. He is the technical expert & conducted Validation / Verification for more than 50 CDM Projects.
Mr. Imran Altaf Bhatti	Bureau Veritas Certification, Pakistan	Team Member, Climate Change Verifier. Lead Auditor and Lead Trainer in Bureau Veritas Certification for Environment Management System, Quality Management System, Occupational Health and Safety Management System. Lead Auditor and Lead Trainer for Social Accountability Management System and Auditor for Energy Management System and supply Chain Security Management System. Graduate in the field of Mechanical Engineering and post graduate diploma in Business Administration. Has more than 5 years of Industrial work experience and 10 years experience in the field of auditing quality, environmental and occupational health and safety management systems. He has undergone training on Clean Development Mechanism. He is involved in the Validation of CDM projects in Pakistan.

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Mr. Sanjay Patankar	Bureau Veritas Certification, India	<p>Technical Reviewer, Climate Change Lead Verifier.</p> <p>Educational qualifications: B.E. (Mech.) M.E. (Mech.)</p> <p>He has over 20 years of experience in engineering manufacturing industry covering various functions like enterprise management, product design, engineering, tool & die design, improvements in the production shop, quality assurance & control and systems planning and implementation, including ISO 9001 based quality management systems. Working for the last 2 years in Bureau Veritas Certification (India) Private Ltd. as Lead Auditor for ISO 9001, 14001 and OHSAS 18001 standards/specifications. Has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.</p>
Mr. Senthil Kumar. V	Bureau Veritas Certification, India	<p>Specialist Supporting ITR, Climate Change Lead Verifier.</p> <p>He is a Environmental Engineer with over 7 years of experience in the field of Consultancy related to Training and Implementation of Management Systems (ISO : 9000, 14000 & 18000) for various organizations. For the last 6 years, he is involved in different type of Clean Development Mechanism Projects. He has also experience in offering project management services to various renewable energy projects. Has undergone training related to Clean Development Mechanism and is currently involved in validation and verification of CDM project activities.</p>

APPENDIX A: CDM PROJECT VALIDATION PROTOCOL

Table 1 Validation requirements based on VVS version 03.0 (EB 70 Annex 3), PS version 02.0 (EB 65 Annex 2), PCP version 03.0 (EB 70 Annex 4), and Guidelines for completing the PDD form version 01.0 (EB 66 Annex 8)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Part I Cover Page					
(a) Is the title of the project activity provided?	PDD		Yes Title: Foundation Wind Energy-I Limited 50 MW Wind Farm Project	OK	OK
(b) Is the version number of the PDD indicated?	PDD		Yes, Current version number: 1.3	OK	OK
(c) Is the completion date of the PDD provided in DD/MM/YYYY format?	PDD		Yes, Date of completion: 21/12/2012	OK	OK
(d) Are project participants indicated?	PDD		Project participants: 1. Foundation Wind Energy-I Limited 2. UPM Umwelt-Projekt-Management GmbH Both project participants are private entities Letter of Approval from DNA of each host party and Modalities of Communication form are not provided.	CL 2	OK
(e) Is the host party(ies) indicated?	PDD		Yes – Islamic Republic of Pakistan	OK	OK
(f) Is the sectoral scope and selected methodology (ies) indicated?	PDD		Yes, Sectoral scope: 1 Methodology: ACM0002 / Version 13.0.0	OK	OK
(g) Is the estimated amount of annual average GHG	PDD		Yes, the estimated amount of annual average GHG emission reductions has been	CAR 2	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
emission reductions indicated?			provided – 89,214 tCO ₂ e		
Part II PDD					
A. Description of project activity					
A.1 Purpose and general description of project activity					
A.1.1 Is a brief description of the project activity provided, including a summary of the scope of activities/ measures that are to be implemented within the project activity?	PDD PS	31(b)	Yes, the purpose of the project activity is to generate zero-emission wind power electricity and deliver it to fossil fuel based WAPDA grid. The project activity is a greenfield plant.	CAR 1 CAR 3	OK
A.1.2 Are the scenario existing prior to the start of project and baseline scenario indicated?	PDD		Yes, the baseline scenario is the same as the scenario existing prior to the project activity. The baseline scenario is continuation of generation of electricity from fossil fuel based power plants connected to WAPDA grid. The project activity is a greenfield plant.	OK	OK
A.1.3 Does it explain how the project activity will reduce GHG emissions or increase GHG removals?	PS	31(c)	Yes, the proposed CDM project activity shall generate zero-emission wind power electricity and deliver it to fossil fuel based WAPDA grid.	OK	OK
A.1.4 Is the estimated of annual average and total GHG emission reductions for the chosen crediting period provided?	PDD		Yes, the estimated amount of annual average GHG emission reductions has been provided – 88,231 tCO ₂ e	OK	OK
A.1.5 Is a brief description of how the project activity contributes to sustainable development provided?	PDD		Yes	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.1.6 In order to determine whether the description of the proposed project activity in the PDD is accurate, complete, and provides an understanding of the proposed CDM project activity, does the DOE conducted a physical site visit to assess the Project? If not, please justify.	VVS	65	Yes, the validation team performed the physical verification of the site on 24/09/2012. Document review/interview with the project participants of the proposed CDM project activity was done on 20/09/2012.	OK	OK
A.1.7 For all other proposed CDM project activities not referred to in VVS paragraphs 65-66, does the DOE undertaken the validation of project description by reviewing available designs and feasibility studies and should conduct comparison analysis with equivalent projects, as appropriate.	VVS	67	Not Applicable	OK	OK
A.1.8 If the proposed CDM project activity involves the alteration of an existing installation or process, does the project description state the differences resulting from the project activity compared to the pre-project situation?	VVS	68	Not Applicable as the project is a greenfield project.	OK	OK
A.2 Location of project activity					
A.2.1 Is the host party(ies) indicated?	PDD		Yes – Islamic Republic of Pakistan	OK	OK
A.2.2 Is region/state/province etc. indicated?	PDD		Yes – Sind province	OK	OK
A.2.3 Is City/Town/Community etc. indicated?	PDD		Yes – Kutti Kun New Island in Taluka Mirpur Sakro, District Thatta	OK	OK
A.2.4 Are the details of physical location of the project activity provided?	PDD		The project is located in Pakistan, Sindh Province, Thatta District, Gharo, Kutti Kun New Island in Taluka Mirpur Sakro, within a narrow corridor, spanned by the following	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl																														
			<div>coordinates:</div> <table><tr><th>Latitude</th><th>Longitude</th></tr><tr><td>24° 36' 49.52" N</td><td>67° 24' 49.76" E</td></tr><tr><td>24° 36' 47.39" N</td><td>67° 24' 41.36" E</td></tr><tr><td>24° 37' 05.22" N</td><td>67° 24' 21.75" E</td></tr><tr><td>24° 37' 14.56" N</td><td>67° 23' 52.80" E</td></tr><tr><td>24° 37' 15.40" N</td><td>67° 23' 37.86" E</td></tr><tr><td>24° 37' 10.34" N</td><td>67° 23' 23.85" E</td></tr><tr><td>24° 36' 50.36" N</td><td>67° 23' 24.32" E</td></tr><tr><td>24° 36' 29.99" N</td><td>67° 23' 38.34" E</td></tr><tr><td>24° 35' 47.12" N</td><td>67° 23' 38.35" E</td></tr><tr><td>24° 35' 27.60" N</td><td>67° 23' 51.89" E</td></tr><tr><td>24° 35' 47.55" N</td><td>67° 24' 20.82" E</td></tr><tr><td>24° 36' 07.93" N</td><td>67° 24' 20.35" E</td></tr><tr><td>24° 36' 23.63" N</td><td>67° 24' 34.82" E</td></tr><tr><td>24° 36' 20.24" N</td><td>67° 24' 50.70" E</td></tr></table>	Latitude	Longitude	24° 36' 49.52" N	67° 24' 49.76" E	24° 36' 47.39" N	67° 24' 41.36" E	24° 37' 05.22" N	67° 24' 21.75" E	24° 37' 14.56" N	67° 23' 52.80" E	24° 37' 15.40" N	67° 23' 37.86" E	24° 37' 10.34" N	67° 23' 23.85" E	24° 36' 50.36" N	67° 23' 24.32" E	24° 36' 29.99" N	67° 23' 38.34" E	24° 35' 47.12" N	67° 23' 38.35" E	24° 35' 27.60" N	67° 23' 51.89" E	24° 35' 47.55" N	67° 24' 20.82" E	24° 36' 07.93" N	67° 24' 20.35" E	24° 36' 23.63" N	67° 24' 34.82" E	24° 36' 20.24" N	67° 24' 50.70" E		
Latitude	Longitude																																		
24° 36' 49.52" N	67° 24' 49.76" E																																		
24° 36' 47.39" N	67° 24' 41.36" E																																		
24° 37' 05.22" N	67° 24' 21.75" E																																		
24° 37' 14.56" N	67° 23' 52.80" E																																		
24° 37' 15.40" N	67° 23' 37.86" E																																		
24° 37' 10.34" N	67° 23' 23.85" E																																		
24° 36' 50.36" N	67° 23' 24.32" E																																		
24° 36' 29.99" N	67° 23' 38.34" E																																		
24° 35' 47.12" N	67° 23' 38.35" E																																		
24° 35' 27.60" N	67° 23' 51.89" E																																		
24° 35' 47.55" N	67° 24' 20.82" E																																		
24° 36' 07.93" N	67° 24' 20.35" E																																		
24° 36' 23.63" N	67° 24' 34.82" E																																		
24° 36' 20.24" N	67° 24' 50.70" E																																		
A.3 Technologies and measures																																			
A.3.1 Are there a list and the arrangement of the main manufacturing/ production technologies, systems and equipment involved?	PDD		The technical description of the technology and equipment has been provided. The project activity involves Nordex N100/2500 Gamma wind turbines. Total 20 WTGs shall be installed having 2.5 MW capacity each.	CAR 4 CAR 5 CAR 6 CAR 7	OK																														
A.3.1.1 Is the information about the age and average lifetime of the equipment based on manufacturer's specifications and industry standards, and existing and forecast installed capacities, load factors and efficiencies	PDD		The life time of the equipment is stated as 20 years which as per the equipment suppliers prescription. The same has been checked in the offshore supply agreement.	OK	OK																														

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
included in the description?					
A.3.1.2 Are the monitoring equipments and their location in the systems included in the description?	PDD		The description of the same is provided in section B.3 of the webhosted PDD.	OK	OK
A.3.2 Are energy and mass flows and balances of the systems and equipment included in the project activity provided?	PDD		Not Applicable.	OK	OK
A.3.3 Are the types and levels of services provided by the systems and equipment that are being modified and/or installed under the project activity and their relation, if any, to other manufacturing/ production equipment and systems outside the project boundary provided?	PDD		Not Applicable.	OK	OK
A.3.4 Does the description clearly explain how the same types and levels of services provided by the project activity would have been provided in the baseline scenario?	PDD		Yes, in the baseline scenario the equivalent amount of electricity generated by the proposed CDM project activity would have been generated by fossil fuel based power plants connected to WAPDA grid.	OK	OK
A.3.5 Is a list of facilities, systems and equipment in operation under the existing scenario prior to the implementation of the project activity provided?	PDD		The project activity is a Greenfield project and there were no other power plant which was in existence prior to this project.	CAR 4	OK
A.3.6 Is a list of facilities, systems and equipment in the baseline scenario provided?	PDD		Not Applicable	OK	OK
A.3.7 Is a description of how technologies and measures and know-how to be used are transferred to the	PDD		The technology to be implemented is shall be transferred from Germany.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
Host Party(ies) included?					
A.4 Party(ies) and project participant(s)					
A.4.1 Are following information provided in a tabular format?					
A.4.1.1 List of project participants and parties	PDD		Parties involved: 1. Islamic Republic of Pakistan 2. United Kingdom of Great Britain and Northern Ireland Project participants: 1. Foundation Wind Energy-I Limited 2. UPM Umwelt-Projekt-Management GmbH	CL 2	OK
A.4.1.2 Identification of Host Party	PDD		Yes – Islamic Republic of Pakistan	OK	OK
A.4.1.3 Indication whether the Party wishes to be considered as project participant	PDD		None of the parties involved wishes to be considered as project participant	OK	OK
A.5 Public funding of project activity					
A.5.1 Is it indicated whether the project activity receives public funding from Annex I Parties?	PDD		There is no public funding available for this project activity.	CL 4	OK
A.5.2 In case where public funding from Annex I Parties is involved, are followings provided? (a) Information on Parties providing public funding (b) Attached in Appendix 2: the affirmation obtained from such Parties that such funding does not result in a diversion of official development	PS	34	Not Applicable, as there is no public funding availed for this project activity.	CL 4	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
assistance, is separate from, and is not counted towards the financial obligations of those Parties					
B. Application of selected approved baseline and monitoring methodology					
B.1 Reference of methodology					
B.1.1 Is the selected methodology (ies) indicated with exact reference (number, title and version)?	PDD		ACM0002 – Consolidated baseline methodology for grid-connected electricity generation from renewable sources / Version 13.0.0 is applied.	OK	OK
B.1.2 Are the baseline and monitoring methodologies selected by the project participants the valid versions of those approved by the Board?	VVS	70	The applied methodology is approved by the Executive Board at its 67 th Meeting.	OK	OK
B.1.3 Are there any tools and other methodologies to which the selected methodology indicated?	PDD		Yes, Tool for the demonstration and assessment of additionality / Version 06.0.0 And Tool to calculate the emission factor for an electricity system / Version 2.2.1	OK	OK
B.1.4 Has specific guidance and/or clarifications provided by the Board with respect to the approved methodology and any applicable tools been applied?	VVS	71	Not Applicable.	OK	OK
B.1.5 Is there any deviation or clarification requested for the approved methodology?	VVS	78-81	No, there is no deviation or clarification requested for the approved methodology.	OK	OK
B.2 Applicability of methodology					

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.2.1 Is the selected baseline and monitoring methodology applicable to the project activity and that the selected version valid at the time of submission of the proposed project activity for registration?	VVS	73-75	The selected baseline and monitoring methodology is applicable to the project activity and is valid from 11 May 2012.	OK	OK
B.2.2 Does the project activity meet each of the applicability conditions of the approved methodology or other methodology component referred to therein?	PDD VVS	76	Yes	OK	OK
B.3 Project boundary					
B.3.1 Are the emission sources and GHGs included in the project boundary for the purpose of calculating project emissions and baseline emissions described using the table provided?	PDD		Yes	OK	OK
B.3.2 Is a flow diagram of the project boundary presented, physically delineating the project activity?	PDD		Yes	OK	OK
B.3.3 Does the flow diagram include the equipment, systems and flows of mass and energy described? In particular, is the emission sources and GHGs included in the project boundary and the data parameters to be monitored indicated in the diagram?	PDD VVS	82	Yes	OK	OK
B.4 Establishment and description of baseline scenario					

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.4.1 Is an explanation how the baseline scenario is established in accordance with the selected baseline methodology provided?	PDD VVS	89	Yes, the applied methodology prescribes grid as the pre-defined baseline for greenfield projects.	OK	OK
B.4.2 When establishing the baseline scenario, and where “future anthropogenic emissions by sources are projected to rise above current levels due to the specific circumstances of the host Party”, do the project participants follow the “Guidelines on the consideration of suppressed demand in CDM methodologies”?	PS	42	Not applicable	OK	OK
B.4.3 Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVS	113, 115	Yes, the applied methodology prescribes grid as the pre-defined baseline for greenfield projects.	OK	OK
B.4.4 If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVS	114	Not Applicable, as the applied approved methodology prescribes the baseline.	OK	OK
B.4.5 Does the list of alternatives given in the PDD ensure that: (a) One of the options that the project activity is undertaken without being registered as a proposed CDM project activity (b) The list contains all plausible alternatives (c) The alternatives comply with all applicable and enforced legislation	VVS	114	Not Applicable, as the applied approved methodology prescribes the baseline.	OK	OK

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B.4.6 Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	PDD VVS	89	Yes, the applied methodology prescribes grid as the pre-defined baseline for greenfield projects.	OK	OK
B.4.7 Is the baseline identified for the proposed project activity the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed project activity?	VVS	88	Yes, the applied methodology prescribes grid as the pre-defined baseline for greenfield projects.	OK	OK
B.4.8 Does the selected methodology require use of tools (such as the “Tool for the demonstration and assessment of additionality” and the “Combined tool to identify the baseline scenario and demonstrate additionality”) to establish the baseline scenario?	VVS	89	Yes, the project activity falls under the large scale category and the Project Participants have used the “Tool for the demonstration and assessment of additionality” the applied approved methodology prescribes the baseline as Grid.	OK	OK
B.4.9 Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVS	90	No, as the applied approved methodology prescribes the baseline.	OK	OK
B.4.10 Are the documents and sources referred to in the PDD correctly quoted and interpreted and are they crosschecked with other verifiable and credible sources, such as local expert opinion, if available?	PDD VVS	91	Yes	OK	OK
B.4.11 Does the PDD provide a description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity?	VVS	92	Not Applicable, as the applied approved methodology prescribes the baseline.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.4.12 Have all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed project activity?	VVS	93	The applied approved methodology prescribes the baseline.	OK	OK
B.4.13 Has relevant national and/or sectoral policies and circumstances (type E+ or E-), such as sectoral reform initiatives, local fuel availability, power sector expansion plans, and the economic situation in the project sector been taken into account?	VVS	93	Yes, the same have been taken into account.	OK	OK
B.4.14 Is a transparent description of the baseline scenario provided?	PDD		Yes the same has been provided.	OK	OK
B.5 Demonstration of additionality					
B.5.1 Is the project activity demonstrated additional in accordance with the selected methodology (ies)?	PDD		Yes, the PP has demonstrated that proposed CDM project activity is additional.	CAR 8 CAR 9 CAR 10 CAR 11 CAR 12 CL 1 CL 5 CL 6	OK
B.5.2 Where the procedure in the selected methodology(ies) and/or tool involves several steps, is it described how each step is applied and is the outcome of each step transparently documented?	PDD		The PP has demonstrated additionality based on the Tool for Demonstration and Assessment of Additionality, Version 6.0, EB 65.	OK	OK
B.5.3 Is the method selected to demonstrate additionality clearly indicated?	PDD		Yes, The project activity is first-of-its-kind and	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			barrier due to prevailing practice is used.		
B.5.4 If investment analysis is used:					
B.5.4.1 Are all relevant assumptions and parameters used in the analysis listed?	PDD		Yes, the assumptions and parameters have been listed.	OK	OK
B.5.4.2 Is the latest version of the "Guidelines on the assessment of investment analysis" applied?	VVS	118	Not applicable	OK	OK
B.5.4.3 Is project activity one of the following cases in regards to investment analysis:	VVS	119			
B.5.4.3.1 The proposed project activity would produce no financial or economic benefits other than CDM-related income;	VVS	119(a)	Not applicable	OK	OK
B.5.4.3.2 The proposed project activity is less economically or financially attractive than at least one other credible and realistic alternative;	VVS	119(b)	Not Applicable.	OK	OK
B.5.4.3.3 The financial returns of the proposed project activity would be insufficient to justify the required investment.	VVS	119(c)	Not applicable	OK	OK
B.5.4.4 Has the accuracy of financial calculations carried out for investment analysis been verified as follows:	VVS	120			
B.5.4.4.1 Determine the suitability of the financial indicator selected by the project participants and conduct a thorough assessment of all	VVS	120(a)	Not applicable	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
parameters and assumptions used in calculating such financial indicators, and determine the accuracy and suitability of these parameters using available evidence and applying its expertise in relevant accounting practices					
B.5.4.4.2 Cross-check the parameters against third-party or publicly available sources, such as invoices or price indices	VVS	120(b)	Not applicable	OK	OK
B.5.4.4.3 Review, as appropriate, feasibility reports, public announcements and annual financial reports related to the proposed project activity and the project participants	VVS	120(c)	Not applicable	OK	OK
B.5.4.4.4 Assess the correctness of computations carried out and documented by the project participants; and	VVS	120(d)	Not applicable	OK	OK
B.5.4.4.5 Assess, where applicable, the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions.	VVS	120(e)	Not applicable	OK	OK
B.5.4.5 If benchmark analysis is used:					
B.5.4.5.1 Is the benchmark clearly indicated?	PDD		Not applicable	OK	OK
B.5.4.5.2 Is the type of benchmark applied suitable for the type of financial indicator presented?	VVS	121(a)	Not applicable	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
B.5.4.5.3 Does the risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity?	VVS	121(b)	Not applicable	OK	OK
B.5.4.5.4 Is it reasonable to assume that no investment would be made at a rate of return lower than the benchmark?	VVS	121(c)	Not applicable	OK	OK
B.5.4.6 If cost comparison is used:					
B.5.4.6.1 Are the scenarios compared described?	PDD		Not Applicable	OK	OK
B.5.4.7 If PPs rely on values from FSR:	VVS	122			
B.5.4.7.1 Has the FSR been the basis of the decision to proceed with the investment in the project?	VVS	122(a)	Not applicable	OK	OK
B.5.4.7.2 Are the values used in the PDD and associated annexes fully consistent with the FSR? If inconsistencies occur, was the appropriateness of the values validated?	VVS	122(b)	Not Applicable	OK	OK
B.5.4.7.3 On the basis of its specific local and sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision?	VVS	122(c)	Not Applicable	OK	OK
B.5.5 If barriers analysis is used:					
B.5.5.1 Is the "Guidelines for objective demonstration and assessment of barriers" followed?	PS	48	Yes, The project activity is first-of-its-kind and	OK	OK

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			barrier due to prevailing practice is used.		
B.5.5.2 Is it ensured that only the most relevant barriers selected?	PDD		Yes, The proposed CDM project activity is first-of-its-kind as no other similar project had achieved COD prior to the start date of the proposed CDM project activity.	OK	OK
B.5.5.3 Is the credibility of the barriers justified with key facts and/or assumptions and the rationale?	PDD		Yes	OK	OK
B.5.5.4 Is it ensured that issues that have a direct impact on the financial returns of the project activity are not considered as barriers but assessed by investment analysis? This does not refer to either: (a) Risk related barriers (b) Barriers related to the unavailability of sources of finance for the project activity	VVS	125	Yes	OK	OK
B.5.5.5 Were the barriers determined as real?	VVS	126(a)	Yes, Pakistan Energy Yearbook of 2011 clearly shows that the national grid is not supplied with electricity generated from wind energy. No commercial production of electricity through wind energy is substantiated through Pakistan energy Year Book published by Ministry of Petroleum and Natural Resources, Government of Pakistan.	OK	OK
B.5.5.6 Were the barriers determined as preventing the implementation of the project activity but	VVS	126(b)	Yes	OK	OK

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not the implementation of at least one of the possible alternatives?					
B.5.6 Common Practice Analysis					
B.5.6.1 If the project type is first-of-its kind, do the project participants consider “Guidelines on additionality of first-of-its-kind project activities”?	VVS PS	128 49(a)	Yes, The project activity is first-of-its-kind and barrier due to prevailing practice is used as per Tool for the demonstration and assessment of additionality	OK	OK
B.5.6.2 If the project type is not first-of-its kind, has common practice analysis been conducted considering “Guidelines on common practice”?	VVS PS	128 49(b)	Not applicable, the proposed CDM project activity is first-of-its-kind and hence common practice analysis is not required.	OK	OK
B.5.6.3 Was it assessed whether the geographical scope of the common practice analysis is appropriate for the assessment related to the project activity’s technology or industry type?	VVS	129(a)	Not applicable	OK	OK
B.5.6.4 Was it determined to what extent similar and operational projects, other than CDM project activities, and have been undertaken in the defined region?	VVS	129(b)	Not applicable	OK	OK
B.5.6.5 Are similar and operational projects, other than CDM project activities, already “widely observed and commonly carried out” in the defined region? Is it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVS	129(c)	Not applicable	OK	OK

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B.5.7 Prior consideration of the clean development mechanism					
B.5.7.1 If the project activity start date prior to the date of publication of the PDD for stakeholder comments, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	PDD VVS	105	Yes, the project activity start date is prior to the date of publication of the PDD for stakeholder comments.	OK	OK
B.5.7.2 Is the start date of the project activity, reported in the PDD, the earliest date at which either the implementation or construction or real action of a project activity begins?	VVS	106	Yes, the start date of the project activity is mentioned as 23/08/2011, which is date on which the supply agreement was signed between the project participant and technology supplier.	OK	OK
B.5.7.3 If the project activity requires construction, retrofit or other modifications, is it ensured that the date of commissioning not considered as the project activity start date?	VVS	106	No, the project activity is a Greenfield project.	OK	OK
B.5.7.4 Is it a project activity with a start date on or after 02 August 2008, or before 02 August 2008?	VVS	106	The start date is after 02 August 2008, viz., 23/08/2011.	OK	OK
B.5.7.5 For a project activity with a start date on or after 02 August 2008, are the following provisions to be satisfied:			No, the project activity start date is after the 02 August 2008 viz., 23/08/2011. Hence section B.5.7.5.1 to 5.2 would not be applicable.	OK	OK
B.5.7.5.1 Has the PP informed the Host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of	VVS	107	Yes, the Project Participant on 22/02/2012 has informed UNFCCC and DNA Pakistan of	OK	OK

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their intention to seek CDM status within 180days of the project activity start date?			the commencement of the project activity and of their intention to seek CDM status within 180 days of the project activity start date which is 23/08/2011. This is within the stipulated 180 day period.		
B.5.7.5.2 Do the project participants inform the secretariat of the progress of the project activity every subsequent two years after the initial notification, until the PDD regarding the project activity has been published for global stakeholder consultation or, a new baseline and monitoring methodology is proposed or a revision of an approved baseline and monitoring methodology is requested for the project activity before the start date?	PCP	9	Not Applicable	OK	OK
B.5.7.6 For a project activity with a start date before 02 August 2008, are the following elements to be satisfied:	VVS	108	No, the project activity start date is after the 02 August 2008 viz., 23/08/2011. Hence section B.5.7.6 .1 to 6.3 would not be applicable.	OK	OK
B.5.7.6.1 Are evidence of their awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project provided?	VVS	108	Not Applicable	OK	OK
B.5.7.6.2 Are evidence that continuing and real actions were taken to secure CDM status for the	VVS	108-110	Not Applicable	OK	OK

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project in parallel with its implementation provided?					
B.5.7.6.3 Is an implementation timeline of the proposed CDM project activity provided?	PS	28(c)	Not Applicable	OK	OK
B.6 Emission reductions					
B.6.1 Explanation of methodological choices					
B.6.1.1 Does the PDD explain how the methods or methodological steps in the selected methodology, for calculating project emissions, baseline emissions, leakage emissions and emission reductions are applied?	PDD VVS	96	Yes, the explanation has been provided.	OK	OK
B.6.1.2 In case the methodology(ies) include different scenarios or cases, does the PDD indicate and justify which scenario or cases applies to the project activity?	PDD		Yes	OK	OK
B.6.1.3 In case the methodology(ies) provide different options to choose from, does the PDD indicate and justify which option is chosen for the project activity?	PDD VVS	97	Yes	OK	OK
B.6.1.4 In case the methodology (ies) allow different default values, does the PDD indicate and justify which of the default values have been chosen for the project activity?	PDD		Not applicable	OK	OK
B.6.2 Data and parameters fixed ex ante					

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B.6.2.1 If data and parameters will not be monitored throughout the crediting period of the proposed project activity but have already been determined and will remain fixed throughout the crediting period, are all data sources and assumptions: (a) Appropriate and correct? (b) Applicable to the proposed CDM project activity? (c) Resulting in a conservative estimate of the emission reductions?	PDD VVS	98	No information has been provided in §B.6.2. of the PDD.	CAR 13	OK
B.6.2.2 For each piece of data or parameter, are tables provided in accordance with the instructions?	PDD		No information has been provided in §B.6.2. of the PDD.	CAR 13	OK
B.6.3 Ex ante calculations of emission reductions					
B.6.3.1 Is a transparent ex ante calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology provided?	PDD		Yes provided.	CL 8	OK
B.6.3.2 Is the information how each equation is applied, in a manner that enables the reader to reproduce the calculation, provided?	PDD		Yes provided.	OK	OK
B.6.3.3 Is the information of additional background	PDD		Yes provided.	CAR 14 CAR 15	OK

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information and/or data provided in Appendix 4, including relevant electronic spreadsheets?				CAR 16 CAR 17 CAR 18 CL 7	
B.6.3.4 Is a sample calculation for each equation used provided, substituting the values used in the equations?	PDD		Not Applicable.	OK	OK
B.6.4 Summary of the ex ante estimates of emission reductions					
B.6.4.1 Are the results of the ex ante estimation of emission reductions for all years of the crediting period, provided in a tabular format?	PDD		The information of ex ante estimation of emission reductions for all years of the crediting period, has been provided in a tabular format.	OK	OK
B.7 Monitoring Plan					
B.7.1 Data and parameters to be monitored					
B.7.1.1 Is specific information on how the data and parameters that need to be monitored would actually be collected during monitoring included?	PDD		Yes	OK	OK
B.7.1.2 For each data or parameter, is the information completed, in a tabular format:					
B.7.1.2.1 The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and	PDD		Yes	OK	OK

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justify which data sources should be preferred.					
B.7.1.2.2 Is an estimate of the data/ parameter that will be monitored during the crediting period provided?	PDD		Yes	OK	OK
B.7.1.2.3 Where data or parameters are to be measured, does it specify the measurement methods and procedures, standards to be applied, accuracy of the measurements, person/entity responsible for the measurements, and, in case of periodic measurements, the measurement intervals?	PDD		Yes	OK	OK
B.7.1.2.4 Is a description of the QA/QC procedures including the calibration procedures, where applicable, provided?	PDD		Yes	OK	OK
B.7.1.2.5 Is the purpose of data indicated?	PDD		Yes	OK	OK
B.7.1.3 Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVS	131	Yes	OK	OK
B.7.1.4 Does the monitoring plan contain all necessary parameters?	VVS	132(a)	Yes	OK	OK
B.7.1.5 Do the means of monitoring described in the plan comply with the requirements of the methodology including applicable tool(s)?	VVS	132(a)	Yes	OK	OK
B.7.1.6 Are the monitoring arrangements described in	VVS	132(b)	Yes	OK	OK

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the monitoring plan feasible within the project design?					
B.7.1.7 Are the means of implementation of the monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified?	VVS	132(b)	Yes	OK	OK
B.7.2 Sampling plan					
B.7.2.1 Are there any data and parameters monitored in section B.7.1 above to be determined by a sampling approach?	PDD		The parameters monitored would not be determined by a sample approach, hence the same is not applicable.	OK	OK
B.7.2.2 Is a description of the sampling plan provided in accordance with the recommended outline for a sampling plan in the "Standard for sampling and surveys for CDM project activities and programme of activities"?	PDD		Not Applicable	OK	OK
B.7.3 Other elements of monitoring plan					
B.7.3.1 Is the operational and management structure, that the project operator will implement in order to monitor emission reductions and any leakage generated by the project activity, described in the PDD?	PDD PS	56(a)	The operation and management structure which would be responsible for monitoring the emission reductions has been described in the webhosted PDD.	OK	OK
B.7.3.2 Are the responsibilities for and institutional arrangements for data collection and archiving clearly indicated?	PDD PS	56(c)	The responsibilities have been defined	OK	OK

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B.7.3.3 Does the monitoring plan include provisions to ensure that data monitored and required for verification and issuance be kept and archived electronically for two years after the end of the crediting period or the last issuance of CERs, whichever occurs later?	PS	56(b)	Yes	OK	OK
B.7.3.4 Does the monitoring plan include uncertainty levels, methods and the associated accuracy level of measuring instruments to be used for various parameters and variables?	PS	56(e)	Yes	OK	OK
B.7.3.5 Does the monitoring plan include specifications of the calibration frequency for the measuring equipments?	PS	56(f)	Yes	OK	OK
C. Duration and crediting period					
C.1 Duration of project activity					
C.1.1 Start date of project activity					
C.1.1.1 Is the start date of the project activity stated, in the format of DD/MM/YYYY?	PDD		Yes, the start date of the project activity is stated in the required format of DD/MM/YYYY (23/08/2011)	OK	OK
C.1.1.2 Does it describe how the start date has been determined and provide evidence to support this date?	PDD		The description provided in PDD states that date of signing the supply agreement with the technology supplier is the start date of the proposed CDM project activity. The same meets the requirement of Guidelines for Completing the PDD and CDM Glossary of Terms.	OK	OK

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C.1.2 Expected operational lifetime of project activity					
C.1.2.1 Is the expected operational lifetime of the project activity stated in years and months?	PDD		Yes, the operational life time is stated in years (20) and months (0).	OK	OK
C.2 Crediting period of project activity					
C.2.1 Type of crediting period					
C.2.1.1 Is the type of crediting period chosen for the project activity stated?	PDD		Yes, the Project Participant has chosen a Fixed Crediting period.	OK	OK
C.2.1.2 In case a renewable crediting period was chosen, does it indicate whether it is the first, second or third?	PDD		Not applicable	OK	OK
C.2.2 Start date of crediting period					
C.2.2.1 Is the start date of crediting period stated in the format of DD/MM/YYYY?	PDD		The start date of the crediting period is stated as 01/01/2014 or the date of registration, depending on whatever is later.	OK	OK
C.2.3 Length of crediting period					
C.2.3.1 Is the length of crediting period stated in years and months?	PDD		The length of the crediting period is stated in years (10) and months (0)	OK	OK
D. Environmental impacts					
D.1 Analysis of the environmental impacts					
D.1.1 Is a summary of the analysis of the environmental impacts of the project activity and references to all related documentation provided?	PDD		Yes	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
D.2 Environmental impact assessment					
D.2.1 If an environmental impact assessment is required, are conclusions and references to all related documentation provided?	PDD		Yes	OK	OK
D.2.2 Have the project participants undertaken an analysis of environmental impacts activity, including transboundary impacts, and whether those impacts are considered significant by the project participants or the host Party?	VVS	134	Yes	OK	OK
D.2.3 If the host Party requires an environmental impact assessment, have the environmental impact assessment approved by local government?	VVS	135	Yes	OK	OK
E. Local stakeholder consultation					
E.1 Solicitation of comments from local stakeholders					
E.1.1 Did the project participants complete a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed project activity?	VVS	138	Yes, the project participant has completed the local stakeholder consultation process.	OK	OK
E.1.2 Is the process by which comments from local stakeholders have been invited provided?	PDD		Yes	OK	OK
E.2 Summary of comments received					
E.2.1 Are stakeholders that have made comments identified?	PDD		Yes the same has been adhered in section E.2 of the webhosted PDD.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
E.2.2 Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVS	139 (a)	The comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited has been presented in the webhosted PDD.		OK	OK
E.2.3 Is the summary of comments provided complete?	PDD VVS	139 (b)	Yes, the summary of comments provided is complete.		OK	OK
E.3 Report on consideration of comments received						
E.3.1 Is information provided to demonstrate that all comments received have been considered?	PDD VVS	139 (c)	No, the minute of meeting of the stakeholder meeting has not been provided.		OK	OK
F. Approval and authorization						
F.1 General						
F.1.1 Is it indicated whether the letter(s) of approval from Party(ies) available at the time of submitting the PDD to the validating DOE?	PDD		No, the Letter of Approval has not been provided.		OK	OK
F.2 Approval			Islamic Republic of Pakistan	United Kingdom of Great Britain and Northern Ireland		
F.2.1 Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval?	VVS	38	LoA is not provided	LoA is not provided	CL 2	OK
F.2.2 Does the letter of approval from DNA of each Party confirm that :	VVS	39	LoA is not provided	LoA is not provided	CL 2	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
(a) The Party is a Party of the Kyoto Protocol (b) The participation is voluntary (c) In the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country (d) Refers to the precise proposed CDM project activity title in the PDD being submitted for registration						
F.2.3 Is(are) the letter(s) of approval unconditional with respect to (F.2.2) above?	VVS	40	LoA is not provided	LoA is not provided	CL 2	OK
F.2.4 Has (ve) the letter(s) of approval been issued by the respective Party's DNA? If there is doubt with respect to (F.2.2) above, was it verified with the DNA that the letter of approval is valid for the proposed CDM project activity under validation?	VVS	41,42	LoA is not provided	LoA is not provided	CL 2	OK
F.2.5 Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVS	51	LoA is not provided		CL 2	OK
F.3 Authorization						
F.3.1 Has each project participant been authorized by at least one Party involved in a letter of approval?	VVS	45	Please provide LoA		CL 2	OK
F.3.2 Is the information in tabular form in the PDD consistent with the contact information for project participants provided?	VVS	46	Please provide LoA		CL 2	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
F.3.3 Are any entities other than those approved as project participants included in the PDD?	VVS	47	Please provide LoA	CL 2	OK
F.3.4 Has the approval of participation issued from the relevant DNA? And if in doubt, was it verified with the DNA that the approval of participation is valid for the proposed CDM project participants?	VVS	48	Please provide LoA	CL 2	OK
Part III Others					
A. Appendixes of PDD					
A.1 Appendix 1: Contact information of project participants					
A.1.1 For each organization listed in section A.4 of PDD, is the table in PDD completed, with the following mandatory fields: Organization, City, postcode, Country, Telephone and Fax, e-mail and Name of contact person?	PDD		Yes, the same has been completed and found to be adequate.	OK	OK
A.2 Appendix 2: Affirmation regarding public funding					
A.2.1 If applicable, is the affirmation obtained from Parties providing public funding to the project Activity attached?	PDD		Not applicable	CL 4	OK
A.3 Appendix 3: Applicability of the selected methodology(ies)					
A.3.1 Is the background information on the applicability of the selected methodology provided?	PDD		Not Applicable	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
A.4 Appendix 4: Further background information on ex ante calculation of emission reductions					
A.4.1 Is the background information on the ex ante calculation of emission reductions provided?	PDD		Yes the same has been provided.	CAR 15 CAR 16 CAR 17 CAR 18 CL 9 CL 10	OK
A.5 Appendix 5: Further background information on monitoring plan					
A.5.1 Is the background information used in the development of the monitoring plan provided?	PDD		Not Applicable	OK	OK
A.6 Appendix 6: Summary of post registration changes					
A.6.1 Is a summary of the post registration changes provided?	PDD		Not Applicable, since the same cannot be envisaged at the moment.	OK	OK
B. Global Stakeholder Consultation					
B.1.1 Is there any comment on the PDD of the proposed project activity received during Global Stakeholder Consultation process?	VVS	34	Yes, the PDD was webhosted for Global Stakeholder Consultation process, comments from 2 stakeholders were received on the project activity.	OK	OK
B.1.2 If yes, have all comments been taken into account during the validation of the proposed project activity?	VVS	35	Yes, PP need to provide response on the comments from stakeholders	OK	OK
B.1.3 If comments indicate that the proposed project	VVS	36	PP need to provide response on the	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
activity does not comply with the CDM requirements and are not substantiated, is there any further clarification from the entity providing the comment?			comments from stakeholders		
B.1.4 If yes, how comments received have been taken due account?	VVS	36	PP need to provide response on the comments from stakeholders	OK	OK
B.1.5 If no, are the comments as originally provided proceeded to assess?	VVS	36	PP need to provide response on the comments from stakeholders	OK	OK
C. Modalities of Communications (MoC)					
C.1.1 Has the corporate identity of all project participants and focal points included in MoC statement, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories been validated by:	VVS	53			
C.1.1.1 Directly checking evidence for corporate, personal identity and other relevant documentation; or	VVS	54(a)	PP to provide the Modalities of Communication.	CL 3	OK
C.1.1.2 Notarized documentation; or	VVS	54(b)	PP to provide the Modalities of Communication.	CL 3	OK
C.1.1.3 Written confirmation from the project participant or the coordinating/managing entity that all corporate and personal details, including specimen signatures, are valid and accurate.	VVS	54(c)	PP to provide the Modalities of Communication.	CL 3	OK
C.1.2 If (C.1.1.3) above was chosen, is it ensured that	VVS	55	PP to provide the Modalities of	CL 3	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the MoC statement is received from a project participant with whom the DOE has a contractual relationship?			Communication.		
C.1.3 If (C.1.1.3) above was chosen, is it ensured that the official who submits the MoC statement to the DOE and the official who signed the written confirmation (if a different person) is/are duly authorized to do so on behalf of the respective project participant?	VVS	56	PP to provide the Modalities of Communication.	CL 3	OK
C.1.4 If it is unable to validate the requirements by applying C.1.1.1 to C.1.1.3 above, are any further validation activities performed?	VVS	57	PP to provide the Modalities of Communication.	CL 3	OK
C.1.5 Has the latest version of the form "Modalities of Communication statement" (F-CDM-MOC) been used?	VVS	60(a)	PP to provide the Modalities of Communication.	CL 3	OK
C.1.6 Is the information required as per F-CDM-MOC, including its annex 1, correctly completed?	VVS	60(b)	PP to provide the Modalities of Communication.	CL 3	OK
C.1.7 Do the project participant's authorized signatories signing the F-CDM-MOC correspond to the project participant's authorized signatories included in F-CDM-MOC, annex 1?	VVS	60(c)	PP to provide the Modalities of Communication.	CL 3	OK

Table 2: Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CAR 1 At least once in the PDD each and every abbreviation has to be explained. This is applicable for all abbreviations used in the PDD.	A.1.1.	Explanations for all abbreviations have been included in PDD version 1.2.	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 2 Estimated amount of annual average GHG emission reduction at title page of the PDD is not consistent with the emission reductions calculated in the PDD.	Part I (g)	Calculation was not correct. After Grid emission factor calculation has been corrected, updated emission reductions have been included in PDD version 1.2.	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 3 In §A.3. of the PDD, amount of electricity generation is not consistent with §A.1. of the PDD.	A.1.1.	The electricity generation has been corrected to 144,500 MWh.	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 4 §A.3. of the PDD doesn't provide: a) Description of how environmentally safe and sound technology, and know-how to be used, is transferred to the Host Party. b) Description of baseline scenario c) Arrangement of the technology, system, and equipment. If required, illustrate it by a schematic.	A.3.1.	a) The description in Section A.3 has been revised. b) The description in Section A.3 has been revised. c) A general schematic of a WTG, which explains the main components, has been included in Section A.3.	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 5 In §A.3. of the PDD, description of emission	A.3.1.	Included information as per methodology: "Emission sources and	Based on the updated information in PDD, Version 1.2. CAR is closed.

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
sources and GHG involved in the project activity is not provided.		<i>GHG involved in the proposed project are CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity."</i>	
CAR 6 It is not clear from §A.3. of the PDD that whether the WTG used in the proposed CDM project activity shall be 50 Hz or 60 Hz.	A.3.1.	The project employs 50 Hz WTGs. Therefore, "60 Hz" has been deleted.	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 7 Please provide information of equipment to be provided by DESCON in §A.3. of the PDD.	A.3.1.	Equipment provided by the contractor has now been mentioned in Section A.3 of the PDD. The evidence (EPC contract, Schedule 35) is provided to the DOE together with PDD version 1.2.	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 8 In §B.5. of the PDD, discuss in detail how incentive from the CDM was seriously considered in the decision to proceed with the project activity.	B.5.1.	The wind power project developers formally gained knowledge about CDM from the Renewable Energy Policy 2006, which sufficiently defines CDM benefits for a renewable energy project as well as CER Revenue Distribution Mechanism between project proponent and power purchaser. Please see Section 8.3.3 on Page 12 of the attached Renewable Energy Policy 2006. The former project owner Beacon	Based on the updated information in PDD, Version 1.2. CAR is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		<p>Energy Limited conducted a Feasibility Study in 2006, in which CDM was discussed and suggested to be applied for the project. When Fauji Foundation acquired the project from Beacon Energy Limited on 05/06/2010, the Feasibility Study of the project had been provided to Fauji Foundation. Consequently, the Fauji Foundation continued to pursue CDM in its project planning.</p> <p>Furthermore, UPM and Fauji Foundation met in Islamabad in December 2010 to discuss CDM development. A letter delineating the CDM development process that was written shortly after this meeting is provided to the DOE.</p> <p>All these evidences took place before the investment decision on 23/08/2011 (Finalisation of EPC contract) and thus demonstrate FWEL-I's seriousness about CDM.</p> <p>All this information is now also included in the PDD in chapter B.5.</p>	

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CAR 9 During on-site audit it was found that the date of investment decision mentioned in the table in §B.5. of the PDD is incorrect. Please correct the information in the PDD.	B.5.1.	Investment decision was on 23/08/2011, as on this date the EPC contract was finalized. This was validated during the on-site audit. As the term "investment decision" is not defined in the CDM Glossary of Terms (EB66, Annex 63), the phrase in the PDD was changed to "start date of the project".	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 10 Under sub-step 1b of the additionality tool, please discuss whether implementation of the proposed CDM project activity is a legal binding or not.	B.5.1.	Added in Section B.5 under Outcome of Step 1b: <i>"The proposed CDM project is voluntary action and not legally binding."</i>	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 11 In §B.5. of the PDD, please define applicable geographical area for determination of prevailing practice (first-of-its-kind) barrier.	B.5.1.	Inserted footnote: <i>"As per Tool for the demonstration and assessment of additionality (Version 06.0.0) (EB65 Annex21) the applicable geographical area covers the entire host country as a default."</i>	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 12 In discussion of first-of-its-kind barrier and in §B.5. mention voltage level (132 kV) for export of electricity to national grid.	B.5.1.	Has been included now.	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 13 IN §B.6.1. of the PDD, please discuss specifically w.r.t. to the proposed CDM project activity that	B.6.2.1.	The PDD now states that leakage is neglected in accordance with the methodology.	Based on the updated information in PDD, Version 1.2. CAR is closed.

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
how the leakage is zero.			
CAR 14 Please provide information of data and parameters for grid emission factor in §B.6.2. of the PDD.	B.6.3.3.	As the grid emission factor is a monitoring parameter, it is included in B.7.1.	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 15 Steps for calculation of grid emission factor are not as per EB63 Annex19. Exclude step 5.	B.6.3.3.	Steps for calculation of grid emission factor have been corrected as per EB63 Annex 19.	Based on the updated information and recalculation of Grid emission Factor, CAR is closed.
CAR 16 Please mention in the PDD and justify according to EB63 Annex19, how existence of significant transmission constraints between WAPDA and KESC have been determined. In the PDD, it should be also explicitly mentioned that KESC has been identified as connected electricity system. Please provide some further evidence/publically available information source to verify that KESC is a connected electricity system with significant transmission constraints to WAPDA grid.	B.6.3.3.	Now mentioned in Step 1 of the of the grid emission factor calculation in Appendix 4 of the PDD, that the criteria as suggested by the tool to calculate the emission factor for an electricity system, are not applicable, as 1) a spot market for electricity does not exist in Pakistan 2) there is no official data available with regard to the operation of the transmission line between different electricity systems. Therefore, the national grid is applied as suggested by the tool to calculate the emission factor for an electricity system. Further clarification according to the tool to calculate the emission factor for an	Based on the updated information in PDD, Version 1.2. CAR is closed.

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		electricity system has been added in Step 1. It is further explicitly mentioned, that KESC is a connected electricity system, but as there is no official data publically available about the transmissions between WAPDA and KESC, it cannot be explicitly mentioned, that KESC is a connected electricity system with significant transmission constraints to WAPDA grid.	
CAR 17 As required by EB63 Annex19, for calculation of BM, the option chosen should be mentioned in the CDM-PDD. Calculation of BM in the PDD has not been explained according to latest version of the tool EB63 Annex19. Approach mentioned on page 15 of the tool (EB63 Annex19) with options (a) to (f) should be applied and justified and BM should be calculated accordingly.	B.6.3.3.	Calculation of BM in the PDD has now been explained according to latest version of EB63 Annex 19.	Based on the updated information in PDD, Version 1.2. CAR is closed.
CAR 18 For calculation of CM, please explicitly mention in the PDD that option (a) Weighted average CM has been selected.	B.6.3.3.	Now it is also explicitly mentioned in Step 6, that Option (a) Weighted average CM has been selected, as evident from the grid emission factor calculation sheet provided to the DOE.	Based on the updated information in PDD, Version 1.2. CAR is closed.

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CL 1 Please provide copy of ERPA.	B.5.1.	ERPA has been delayed due to unforeseen events and has been excluded from the PDD.	Based on the justification by Project Participant, CL is closed.
CL 2 For each project participant, please provide Letter of Approval (LoA) from DNA of each party involved in the proposed CDM project activity.	A.4.1.1.	Both LoAs are provided to the DOE together with PDD version 1.2.	Based on the submission of the LOAs, CL is closed.
CL 3 Please provide Modalities of Communication (MoC) form.	C.1.1.1.	The signed MoC is provided to the DOE together with PDD version 1.2.	Based on the submission of the MoC Form, CL is closed.
CL 4 Please provide evidence/affirmation that no public funding & ODA is involved in proposed CDM project activity.	A.5.1.	Statement of PP is provided to the DOE together with PDD version 1.2.	Based on the evidence of affirmation by Project Participant, CL is closed.
CL 5 Please provide evidences for the milestones mentioned as "expected" in the table in §B.5. of the PDD. Update the PDD with actual dates, if available, accordingly.	B.5.1.	Expected milestones from table in Section B.5 have not been reached yet. Due to unforeseen events ERPA and Power Purchase Agreement have been delayed. As they are no necessity of the CDM in this case, they have been excluded from the timeline in the PDD. Table has been updated accordingly. PDD has been updated.	Based on the justification by Project Participant, CL is closed.
CL 6 Please provide copy of power purchase agreement.	B.5.1.	Power Purchase Agreement has been delayed due to unforeseen events and has been excluded from the PDD.	Based on the justification by Project Participant, CL is closed.

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CL 7 Please provide grid emission factor calculation spreadsheet clearly mentioning source of data. Provide evidence for input data.	B.6.3.3.	Grid emission factor calculation spreadsheet is provided to the DOE together with PDD version 1.2. Data can be evidenced from the Pakistan Energy Yearbooks 2007-2011 by the Ministry of Petroleum and Natural Resources.	Based on the submission of grid emission factor calculation spreadsheet clearly mentioning input data, CL is closed.
CL 8 Please provide emission reduction calculation spreadsheet clearly mentioning source of data. Provide evidence for input data.	B.6.3.1.	Emission reduction spreadsheet and grid emission factor calculation is provided together with PDD version 1.1.	Based on the submission of emission reduction calculation spreadsheet clearly mentioning source of data, CL is closed.
CL 9 For calculation of grid emission factor, please clarify whether DNA of the host country has published a delineation of the project electricity system and connected electricity system?	A.4.1.	Mentioned in PDD version 1.2 in Step 1 of the of the grid emission factor calculation in Appendix 4, that host country DNA has not published a delineation of the project electricity system and connected electricity systems. Further clarification according to the tool to calculate the emission factor for an electricity system has been added in Step 1.	Based on the updated information in PDD, Version 1.2. CL is closed.
CL 10 For grid emission factor calculation, please justify here with data how low-cost/must-run resources constitute less than 50% of total grid generation.	A.4.1.	For the five years 2006/07, 2007/08, 2008/09, 2009/2010 and 2010/2011 it can be demonstrated from the cell F8 in the respective OM calculation tabs of the updated/corrected grid emission	Based on the updated information in PDD, Version 1.2. CAR is closed.

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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		factor calculation excel sheet, which is provided together with PDD version 1.2. In the PDD in Step 3 of the grid emission factor calculation in Appendix 4 it is now mentioned that the annual shares of low-cost/must run constituted less than 50% of total grid generation in the past five years.	

Appendix B: GLOBAL STAKEHOLDERS COMMENTS

Global stakeholders' comments	Project owner's response	Validation team conclusion
<p>1) DOE to ensure that the PDD values are consistent and ensure that the CDM project is a genuine project.</p> <p>2) DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also.</p> <p>3) Careful study must be done so that the DPR/FR is not in different versions made and submitted with different purposes to different agencies, which is totally unacceptable, illegal and unethical.</p> <p>4) Project owner should show some undertaking letter from bank manager to DoE stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DoE at face value, but must be checked independently. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE.</p> <p>5) DPR/FR values must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must</p>	<p>The comments submitted to the DOE by the global stakeholders provide no project specific information or data, but only general advice and questions. Not a single comment can be identified to provide or refer to information or data that is specific to the proposed project. Moreover, in the past, a large number of proposed CDM projects have received literally identical comments. An exemplary list of such projects was provided to the DOE for further evaluation on 31/05/2012.</p> <p>UPM is convinced that the proposed project does fully comply with all relevant laws, regulations and guidelines. As the comments do not provide specific information on possible flaws, UPM kindly requests the DOE to contact the author(s) of the submitted comments and request them to provide specific information and data that questions the integrity of the proposed project, to substantiate the previous submission(s) and clarify which comments are applicable to this specific project. If no specific reproaches can be</p>	<p>Based on the evidences and justification provided by the project participant, the DOE agrees that the comments are not justified. The project activity is approved by AEDB, representing Government of Pakistan. During the site visit, review of documents and interviews with stakeholders, DOE was provided with substantial evidence that the project activity is genuine. All evidences reviewed were found credible and authentic with approvals and endorsements by relevant regulatory and statutory authorities. The DOE has no doubt over the authenticity of the project activity and confirms it to be genuine and free from doubt.</p>

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<p>make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts.</p> <p>6) DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant.</p> <p>7) DOE must not entertain this project any more if found the DPR/FR is tampered with at any point in time. PP cannot give different DPR's and FR's. They must submit only the one given to Banks and other agencies while obtaining loans and decision making time.</p> <p>8) Has the PP considered the CDM revenues while envisaging the project? Without CDM the project was not viable, is it right? This project is having a debt component? Then how bankers or lenders gave the loan? Have the bankers or lenders considered the CDM revenues while agreeing to give loan to this projects? If not this project should be rejected right away by DOE by terminating the contract forthwith. If yes, where is the proof? What is the date of the evidence document from bank? Is this document printed now a days or earlier. DOE to independently check the same. If the document is available from Bank it must be checked from all angles so that it is genuine and not forged and date changed by putting back dated. This is normally done, DOE to be aware of this please. Please check the communication the PP had during that time with banks, emails and postal receipts and the weights and dates mentioned on the receipts. Do not believe in courier bills and</p>	<p>provided, we do not consider these comments genuine, as they are identically provided to many projects of different types and in different geographic regions.</p>	
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receipts since these can be cooked up easily. Insist on government owned postal service receipts only. If the project is fully equity project then on what basis the PP has invested full equity in to the project while considering the CDM revenue? DOE to check the same in detail and bring out the facts. Is there any past record of this PP to invest or not to invest at returns what he is talking about in this project? Proper evidences must be reviewed and digged out by the DOE and take decision on the project based on established facts. Do not ask documents from PP, DOE to collect the same from different sources to do independent evaluation.

9) Is the project equipment purchased second hand equipment or sourced from cheap foreign sources? If yes, the issue must be probed by DOE since invoices will invariably be inflated and forged. Total project costs mentioned by PP will not be the same as originals. Hence no additionality. These facts must be probed in full by DOE by checking all documents and money transactions along with bank statements and certified accounts by a legally acceptable financial analyst.

10) From DOE side which auditor has done marketing and business development for acquiring this business of validating this project? With whom he or she was co-ordinating at PP or CER buyer? The same person who has done the marketing and business development to acquire the business do validation or participate in any manner what so ever in the validation process? One cannot do like that. It is against the accreditation rules and norms followed since

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ages. DOE should send auditors from different offices or countries to do this validation audit. DOE must take care of impartiality and accreditation rules. Due to the targets set by the DOE managements auditors are doing marketing and meeting clients and giving promises that the project will be taken care. Is it acceptable and fair? This must be stopped. No auditor should do marketing. Only non-auditing staff should do marketing. DOE to ensure the same please.

11) If applicable only: Is these machines, equipment was a part of any bundle of CDM activity envisaged and developed earlier. DOE to check the same through independent sources also. Once some bundles are non-additional and getting negative validation from a DOE, PP is rolling out the same project as an individual project which is not a CDM project at all. DOE to verify the same from independent sources and also take undertaking in the form of an affidavit from the PP's that any misrepresentation or false statement with respect this would attract strict legal action from UNFCCC and DOE. Furthermore the registered project must be de-registered in case of any future findings contradicting the submissions made by the project owner.

12) DOE to be more careful so that this is a genuine CDM project. What is the exact project cost? The project cost is covering what? Each value considered must be validated with proof. The machinery is second hand purchased or fresh and new from an OEM? In either case DOE to check all the quotations, proposals, purchase orders, invoices, way bills, transport bills, proof of payments like bank statements. DOE

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to check with banks by way of written confirmation the amount transacted, to whom the money is paid, when the money is paid, is the party paid is the correct party as shown in the purchase orders. It may so happen that the values, party names, dates are fabricated and misrepresented in this project. DOE should terminate their contract for this project immediately. This is the only way out to protect the value of CDM process. If the PP is purchasing second hand or second quality equipment and inflating the purchase order values and invoices, this must be probed thoroughly and real values to taken for additionality calculation. Then I'm sure the additionality is not there at all in such a situation.

13) How is the base line defined in this project? Is Base line hypothetically defined with no proper evidences and proper justification? In such case, DOE cannot take the base line as suggested by the PDD. Please check that there are real emission reductions beyond the real and factual base line. It may so happen that this project qualifies for no CER's. DOE cannot assume values and things as giving by this PP. Whatever values are considered throughout the project in all documents including the real DPR (not the one prepared for CDM, the one given to the banks and others), they must be validated, verified and double checked. Do not ask PP for DPR. Ask the parties who have been given DPR by the PP. Get directly from the bank and others by each page of the DPR and Feasibility report signed. Such document can be considered as a real DPR or FR. UNFCCC CDM process cannot be degraded by fabricating and misinterpreting the project base line and additionality.

<p>1. Purpose of the project and how the proposed project activity reduces greenhouse gas emissions are not briefed in the PDD. Refer section A.2.</p> <p>2. How environmentally safe and sound technology is used for the project and details of technology transfer is not demonstrated adequately. Refer A.4.2</p> <p>3. Non- debundling nature of the project activity is not adequately justified as per EB54 Annex 13 (Debundling tool). Refer A.4.5.</p> <p>4. Please check the project boundary of the project activity is not based on the guidance of the applicable project category.</p> <p>5. Why has option A (Combined margin) been chosen for calculating emission factor is not justified. Refer B.6</p> <p>6. The justification of choosing IRR as financial indicator is not adequately justified. Whether it is equity or project IRR, pre-tax or post tax is not mentioned in the PDD.</p> <p>7. The emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants.</p> <p>8. Basis of choosing PLR as benchmark is not adequately demonstrated in the PDD</p> <p>9. All the issues of investment analysis guidelines are not discussed in the PDD. Refer B.5.</p> <p>10. Justification of parameters including O&M, insurance, loan, derating, escalation, and tariff are not demonstrated with justification. Refer B.5.</p> <p>11. Please provide a proof for proposed debt to equity taken at the investment decision. Refer B.5</p>	<p>The comments submitted to the DOE by the global stakeholders provide no project specific information or data, but only general advice and questions. Not a single comment can be identified to provide or refer to information or data that is specific to the proposed project. Moreover, in the past, a large number of proposed CDM projects have received literally identical comments. An exemplary list of such projects was provided to the DOE for further evaluation on 31/05/2012.</p> <p>UPM is convinced that the proposed project does fully comply with all relevant laws, regulations and guidelines. As the comments do not provide specific information on possible flaws, UPM kindly requests the DOE to contact the author(s) of the submitted comments and request them to provide specific information and data that questions the integrity of the proposed project, to substantiate the previous submission(s) and clarify which comments are applicable to this specific project. If no specific reproaches can be provided, we do not consider these comments genuine, as they are identically provided to many projects of different types and in different</p>	<p>Based on the evidences and justification provided by the project participant, the DOE agrees that the comments are not justified. The project activity is approved by AEDB, representing Government of Pakistan. During the site visit, review of documents and interviews with stakeholders, DOE was provided with substantial evidence that the project activity is genuine. All evidences reviewed were found credible and authentic with approvals and endorsements by relevant regulatory and statutory authorities. The DOE has no doubt over the authenticity of the project activity and confirms it to be genuine and free from doubt.</p>
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<p>12. Proof for PLF is not justified.</p> <p>13. Date of offer is not provided</p> <p>14. Project cost is not as per state norms. Refer B.5.</p> <p>15. O&M charges and its escalation is not as per norms</p> <p>16. IT rate assumed is not as per standard practice.</p> <p>17. The application of MAT which is based on tax holiday while calculating WACC is not appropriate.</p> <p>18. The PP has not explained and justified the key assumptions and rationale.</p> <p>19. The PP and consultant has not Illustrate in a transparent manner all data used to determine the baseline emissions.</p> <p>20. Not demonstrated that the proposed project activity is additional as per options provided under attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities.</p> <p>21. National policies and circumstances relevant to the baseline of the proposed project activity are not being summarized clarify.</p> <p>22. Explain and justify all relevant methodological choices for the proposed project activity</p> <p>23. Data that is calculated with equations provided in the approved category or default values specified in the category should not be included in the compilation.</p> <p>24. CER revenue assumed is not consistently applied</p> <p>25. Project cost is not as per norms, DOE has to check and clarify.</p> <p>26. The project cost of the project should be based on offer and not on purchase order or tariff order.</p>	<p>geographic regions.</p> <p>List of projects having identical comments was provided to DOE by email of 14/11/2012.</p>	
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<p>27. O&M charges considered are on higher side. Pls. clarify.</p> <p>28. Benchmark calculation is not as per WACC tool (EB53 Annex 8)</p> <p>29. Whether pre-tax or post tax IRR is selected is not demonstrated in the PDD.</p> <p>30. The basis of calculation of benchmark is not documented in the section B.5. PLR is not acceptable benchmark for the project. WACC based on Government bonds, risk premiums should be taken.</p> <p>31. Prior consideration of CDM which is important for the determination of additionality is not documented in the section B.5 of the PDD.</p> <p>32. Date of PPA is not mentioned in the prior consideration of CDM</p> <p>33. The selection of simple OM based on low cost/must run resources is not adequately justified. Refer B.6.1</p> <p>34. PP has not provided for each parameter the chosen value or, where relevant, the qualitative information.</p> <p>35. Please Provide the actual value applied. Where time series of data is used, where several measurements are undertaken or where surveys have been conducted, provide detailed information.</p> <p>36. Explain and justify the choice for the source of data.</p> <p>37. Ex-ante option of calculating OM is not adequately demonstrated. Step 3 of Refer B.6.1</p> <p>38. Power plants registered as CDM project activities should be included in the sample group that is used to calculate the operating margin if the criteria for including the power source in the sample group apply. This argument is not</p>		
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<p>demonstrated. B.6.1</p> <p>39. The selection of option (out of two) for calculating OM is not adequately documented with justification. CEA calculation is based on net electricity generation, the average efficiency of each power unit and the fuel types used in each power unit. Step 4 of B.6.1</p> <p>40. The argument that CEA data for build margin is calculated as per Emission factor tool is not documented. B.6.1</p> <p>41. Spread sheet is not provided. The data should be presented in a manner that enables reproducing of the calculation of OM, BM, and CM.</p> <p>42. The justification of negligible project emissions for wind project is not as per AMS. I. D ver 16.0 EB 54).</p> <p>43. The emission factor value (Southern grid) for calculating baseline emission is wrong. Refer B.6.3</p> <p>44. Net electricity should be continuously monitored, hourly measured and at least monthly recorded. Refer B.7.1</p> <p>45. Metering regulations as per CEA norms is not adequately followed in monitoring plan. Refer B.7.2.</p> <p>46. Where the values have been measured, include a description of the measurement methods and procedures that comply with the guidance provided under general guidance.</p> <p>47. Provide a detailed description of the monitoring plan, including an identification of the data to be monitored and the procedures that will be applied during monitoring.</p> <p>48. The PP should include sources of data that will be actually used for the proposed project activity (e.g. which exact national statistics, actual measurement etc.).</p>		
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49. Where the parameters are to be measured in accordance with the guidance of the approved project category or the general guidance to the indicative methodologies, specify the measurement methods and procedures including accepted industry standards or national or international standards which will be applied, which measurement equipment is used, how the measurement is undertaken.

50. Which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person / entity that should undertake the measurements and what is the measurement interval?

51. Please provide a detailed description of the monitoring plan. Describe the operational and management structure that the project operator will implement in order to monitor emission reductions.

52. Clearly indicate the responsibilities for and institutional arrangements for data collection and archiving.

53. The monitoring plan should reflect good monitoring practice appropriate to the type of project activity. Provide any relevant further background information.

54. Please describe the process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.

55. Project participants shall describe a project activity in a manner which allows the local stakeholders to understand the project activity.