# CDM VALIDATION REPORT

# CE Oaxaca Cuatro S. de R.L de C.V

# VALIDATION OF THE PROJECT ACTIVITY:

# Oaxaca IV Wind Energy Project

**AENOR REFERENCE: 2010/059/CDM/03**

**VERSION:2**

VALIDATION REPORT

# Oaxaca IV Wind Energy Project

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|---|---|---|---|---|
| **Validation Report:** | AENOR Reference nº: | Version of this report: | Date: | |
| | **2010/059/CDM/03** | 2 | 11/05/2012 | |
| **PDD:** | Title: | GSC publication date: | Comments received: | |
| | **Oaxaca IV Wind Energy Project** | **27/10/2010** | ☐Yes ☒ No | |
| **Parties involved:** | Host Party: | Other involved Parties: | | |
| | **Mexico** | **N/A** | | |
| **Project Participant(s):** | In host Party: | In other involved Parties: | | |
| | CE Oaxaca Cuatro S. de R.L de C.V | **N/A** | | |
| **Size of the project activity:** | ☐ Small scale<br>☒ Large scale | | | |
| **Applied methodology/ies:** | Title: | Code: | Nº version | Scope: |
| | **Consolidated baseline methodology for grid-connected electricity generation from renewable sources** | **ACM0002** | **12.1.0** | **1** |
| **Applied tools:** | Title: | Version: | | |
| | **Tool to Calculate the Emission Factor for an Electricity System** | **2.2.1** | | |
| | Title: | Version | | |
| | **Tool for the Demonstration and Assessment of Additionality** | **05.2** | | |
| **Emission reductions (ER):** | GSC PDD: | Final PDD: | | |
| ☒**Annual average of the ER ($tCO_2e$)**<br>☐ **Total ER ($tCO_2e$)** | **260,417** | **245,015** | | |
| **Previous versions of this document:** | | Version: | Date: | |
| | | **1** | **2012/04/20** | |
| | | 2 | | |
| | | 3 | | |
| | | 4 | | |
| **Report prepared by:** | Climate Change Unit. AENOR | | | |

## *Abbreviations*

| | |
|---|---|
| ACM0002 v 12.1.0 | Consolidated baseline methodology for grid-connected electricity generation from renewable sources |
| BM | Build Margin |
| CAR | Corrective Action Request |
| CCGT | Combined Cycle Gas Turbine |
| CDM | Clean Development Mechanism |
| CER | Certified Emission Reductions |
| CFE | Comisión Federal de Electricidad (Federal Electricity Commission) |
| CL | Clarification |
| CRE | Comisión Reguladora de Energía (Energy Regulation Commission) |
| DECISION 3/CMP.1 | Modalities and Procedures for a Clean Development Mechanism as Defined in Article 12 of the Kyoto Protocol |
| DNA | Designated National Authority |
| EB | Executive Board of the CDM of the Kyoto Protocol |
| EIA | Environmental Impact Assessment |
| GHG | Greenhouse Gasses |
| GWhe | Electrical Giga Watt hour |
| GWht | Thermal Giga Watt hour |
| IMNG | Interconnected Mexican National Grid |
| IPCC | Intergovernmental Panel on Climate Change |
| LSPEE | Ley del Servicio Público de Energía Eléctrica (Electricity Public Service Law) |
| MP | Monitoring Plan |
| MWh | Mega Watt hour |

***Table 1: Abbreviations***

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# 1 INTRODUCTION

This validation concerns a project implemented by the PP in Mexico to reduce emissions of CO2 by generating renewable energy coming from wind resources. The objectives of the validation exercise are to confirm that the project meets the necessary CDM criteria, that the project follows the approved methodology, ACM0002 (Version 12.1.0), and that the proposals presented in the PDD will lead to a realistic determination of the emission reductions.

The scope of the validation covers the additionality assessment (investment analysis), the Environmental Impact Study and the stakeholder consultation. In addition, it covers the baseline methodology, the calculation of the emission factor (ex-ante) and the monitoring methodology to quantify the emissions reductions during the operational life of the project.

The project includes the installation of a 102 MW wind farm in La Venta Municipality, State of Oaxaca, in southern Mexico.

This plant will generate electric energy that would otherwise continue being generated with fossil fuels power plants.

## 1.1 Objective

CE Oaxaca Cuatro S. de R.L de C.V has commissioned AENOR to validate "Oaxaca IV Wind Energy Project". The purpose of the validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP), 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 reasonable and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and it is considered necessary to provide assurance of the quality of the project.

UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed upon in the Bonn Agreement and the Marrakech Accords.

## 1.2 Scope

The scope of the validation is to assess all aspects of GHG reduction involved in the project, including the project design, the baseline, the determination of the emission factor of the grid, and the procedures proposed for monitoring the emissions reductions in the future.

The following documents were reviewed as part of the scope of the activity:

- PDD (initial/1/ and final version/2/), including baseline study and monitoring plan.
- Approved Methodology: ACM0002 (Version 12.1.0)/3/
- Decision 3/CMP.1 and relevant decisions from the EB
- Associated documentation (environmental requirements, investment analysis, etc.)
- Letter of approval from the DNA of Mexico/4/.

AENOR recognizes that the project activity is helping the country to fulfil its goals of promoting sustainable development. The Project is expected to be in line with the host-country's specific CDM requirements as it:

- reduces GHG emissions in Mexico compared to the business-as-usual scenario
- helps to develop the local communities
- creates local employment opportunities during the construction and operation of the Project

The validation scope is defined as an independent and objective review of the PDD, the project's baseline study and monitoring plan, and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. AENOR, based on the Specific Instruction for Kyoto Protocol CDM Project Activities (IE/DTC/0039), has used a risk-based approach

in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The validation is not meant to provide any consultancy services to the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the PDD.

# 2 METHODOLOGY

The project assessment aims to be a risk-based approach and is based on the methodology developed in the Validation and Verification Manual (version 01.2)/5/.

The validation of the project started in October 2010 and concluded in May 2012. The validation was performed in several phases, starting with a desk review of the PDD against the approved methodology and CDM and other relevant criteria. The desk review was followed by a site visit to the project site and main stakeholders in Mexico.

In order to ensure transparency, a validation protocol was customized for the project, according to Specific Instruction IE-DCT-039. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results derived from validating the identified criteria.

The validation protocol serves the following purposes:

- It organizes, provides 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.

The sequence of the validation is given in the table below:

| Topic | Date |
|---|---|
| Submission of PDD for global stakeholder consultation process | **27/10/2010** |
| On-site visit | **30/11/2010** |
| Validation Protocol - Version 01. | **15/12/2010** |
| Final Validation Report | **11/05/2012** |

***Table 2. Sequence of the main validation activities.***

## 2.1 Appointment of team members and technical reviewers

The list of involved personnel and the qualification status are summarized in the table below:

| Name | Qualification | |
|---|---|---|
| | Position in the team | Technical areas |
| José Luis Fuentes Pérez | Technical Expert and Chief Validator | TA.1.2, |
| Marcelino Pellitero Martínez | Technical Expert and Validator | TA.1.2 |
| Carmen González | Technical Reviewer | TA.1.2 |
| Jose Antonio Gesto | Technical Reviewer-Financial Expert | TA.1.2 |

***Table 3: List of the personnel involved***

Technical areas (TA) mentioned above correspond to the following:

| TA code | Technical area |
|---|---|
| TA 1.1 | Thermal energy generation from fossil fuels and biomass including thermal electricity from solar (COMPLEX); |
| TA 1.2 | Energy generation from renewable energy sources. |
| TA 2.1 | Electricity distribution; |
| TA 2.2 | Heat distribution |
| TA 3.1 | Energy demand |
| TA 4. 1 | Cement sector (COMPLEX); |
| TA 4.2 | Aluminum (COMPLEX); |
| TA 4.3 | Iron and steel (COMPLEX); |
| TA 4.4 | Refinery (COMPLEX) |
| TA 5.1 | Chemical process industries (COMPLEX). |
| TA 6.1 | Construction. |
| TA 7.1 | Transport. |
| TA 8.1 | Mining and mineral processes, excluding those included in TA 8.2 below; |
| TA 8.2 | Oil and gas industry, coal mine methane recovery and use (COMPLEX). |

| TA code | Technical area |
|---|---|
| TA 9.1 | Metal production. |
| TA 10.1 | Mining and mineral processes, excluding those included in TA 10.2 below; |
| TA 10.2 | Oil and gas industry, coal mine methane recovery and use (COMPLEX). |
| TA 11.1 | Chemical process industries (COMPLEX); |
| TA 11.2 | GHG capture and destruction. |
| TA 12.1 | Chemical process industries (COMPLEX). |
| TA 13.1 | Waste handling and disposal; |
| TA 13.2 | Animal waste management. |
| TA 14.1 | Forestry |
| TA 15.1 | Agriculture |
| TA 15.2 | Animal waste management. |

## 2.2 Document review

The Project Design Document submitted by the PP was reviewed against the approved methodology and against CDM and other relevant criteria. Additional background documents related to the project design, baseline and financial analysis were also made available before and during the on-site visit in Mexico.

To address the corrective actions and clarification requests that arose from the desk review and on-site visit, the consultants revised the project design document submitted in October 2010 and developed a new version (version 2).

## 2.3 Follow-up actions

The AENOR validation team composed of José Luis Fuentes Pérez and Marcelino Pellitero Martínez conducted interviews with project developers in Mexico to confirm selected information and to resolve issues identified in the document review.

On 30 November 2010 the AENOR validation team carried out the visit to the project site. During this day, representatives from Project Participant were interviewed, in addition to relevant local stakeholders such as local authorities and local inhabitants of towns affected by the project. Also, the AENOR team visited construction site.

| Interviewed organization Person/Position | Interview topics |
|---|---|
| Reinaldo Morales Jiménez. President of "Ejidatarios" Committee.<br>Espidio López Carrasco. "Ejidatarios" Oaxaca. Finance Committee.<br>Magdalena García Mora. Acciona Energía<br>Paz Nachón López. Acciona Energía. | ✓ Compliance with applicable law.<br>✓ Opinion about the project.<br>✓ Knowledge of the environmental impacts.<br>✓ Benefits for the community.<br>✓ Landowners' current socioeconomic situation.<br>✓ Consultation with municipal authorities, landowners and other stakeholders.<br>✓ Project's sustainable development contribution. |

**Table 4: Interview topics**

## 2.4 Findings

The objective of this validation phase was to resolve the requests for corrective actions and clarifications and any other outstanding issues that needed to be clarified for AENOR's positive conclusion on the project design. The corrective action requests (CARs) and clarification requests (CLs) raised by AENOR were resolved during communications with the project participants. To guarantee the transparency of the validation process, the concerns raised and responses given are described in this report and also documented in the validation protocol in Appendix 1.

Since modifications to the Project design were necessary to resolve AENOR's concerns, the Client decided to revise the documentation and finally resubmitted the project design document (version 2). After reviewing the revised and resubmitted project documentation, AENOR issued this final validation report and opinion.

## 2.5 Internal Quality Control

As final step of the validation, the validation report and the protocol have to undergo an internal quality control by means of a technical review following the procedures of AENOR. The technical reviewer is a competent person of AENOR, independent from the team that carried out the validation of the project activity.

# 3 VALIDATION FINDINGS

## 3.1 Approval

Approval requirements have been validated with evidence of the LoA requested through **CAR 1 which has been correctly closed.**

Letter of Approval from Mexican DNA has been provided to the validation team directly from the Project Participant. The LoA was issued in November 2010 (No. 259/2010) by the Interministerial Commission on Climate Change. AENOR confirms that the LoA is unconditional with respect to the following:

- P.R. of Mexico is a Party of the Kyoto Protocol.
- The LoA authorizes CE Oaxaca Cuatro S. De R.L de C.V as a voluntary Project Participant and confirmed its project contributes to Mexico's sustainable development.
- The LoA refers to the precise proposed CDM project activity title in the PDD being submitted for registration.

The validation did not reveal any information that indicates that the project can be seen as a diversion of ODA funding towards Mexico.

## 3.2 Participation

One Party, Mexico is involved in the project.

AENOR confirms that participation of the PP has been approved by the party involved in the Kyoto Protocol, by means of the LoA issued from DNA. AENOR checked the website of the Mexican DNA and website of UNFCCC confirms that LoA from Mexico has been issued by the Mexican DNA, and it is valid for the proposed CDM project activity. AENOR does not doubt the authenticity of the letter of approval received from PP, hence AENOR confirms that LoA is in compliance with paragraphs 45-48 of the VVM v.1.2. No additional specification of the project activity is contained in the LoA.

The project participant has been listed in section A.3 of the final PDD. This information is consistent with the information provided in Annex 1 and throughout the PDD, once the information has been corrected as requested through **CAR 2 and CAR 8, both already closed**. AENOR confirms that no entities other than the approved as project participant are included in these sections of the final PDD.

## 3.3 Project Design Document

Due to the clarifications and corrective actions requested during the validation process, the Project Participant has made a final version of the PDD, version 2 which includes all issues raised to the PP either corrected or clarified.

The PDD is in compliance with relevant forms and guidance stated by the CDM documentation under VVM Track.

## 3.4 Project description

**Title of the project activity:** Oaxaca IV Wind Energy Project.

**Project Participants:** CE Oaxaca Cuatro S. de R.L de C.V

**Host Party**: Mexico.

**Description:** This project activity consists of the installation in Oaxaca State of 68 turbines with a total installed capacity of 102 MW.

The Oaxaca IV wind farm is 102 MW of installed capacity, equipped with 68 turbines of 1.5 MW each one. Electricity generated by the project will be delivered to National Interconnected Grid via the Ixtepec Substation.

The main objective of the Project is to generate electricity from wind resources, thus increasing the percentage of renewable sourced power in the Interconnected System and at the same time contributing to the environmental, social and economic sustainability of the country.

The National Interconnected Grid is dominated by thermal power plants. The combined emission factor of the Interconnected Grid is 0.5805 tCO2e/MWh. Emissions reductions will be achieved by the implementation of the project activity, displacing an equivalent amount of electricity that would have been supplied by the National Interconnected Grid in the absence of the project activity. The annual average of estimated reductions (t CO2e) over the crediting period will be 245,015.

The project activity is expected to have a total installed capacity of 102 MW, and an annual average output of 422,076 MWh. The **CL7 was raised to PPs to** clearly identify in the PDD the operational lifetime of the project**.** As a result, the PP provided AENOR team with the "Statement of Compliance" by Germanischer Lloyd Industries Services GmBH /6/ which clearly identifies the expected operational lifetime of the project as 20 years. Thus, final version of the PDD shows throughout its sections consistent information on this matter. Hence, **CL 7 is closed.**

Moreover, the lifetime is also in parallel with other registered project checked by AENOR such as Oaxaca I Wind Farm /7/.

The purpose of the project activity, type of technology used and the contribution of the project to sustainable development are described in the PDD. The information provides the reader with a clear understanding of the proposed CDM project activity.

Through reviewing the licenses, permits and desk review of other documents of the project mentioned in section "references", on site visit assessment and interviews with the Project Participant and stakeholders, CARs and CLs have been detected in order to provide information in the PDD consistent with referenced documents. All these CARs and CLs have been correctly closed and they are appropriate discussed in this report. Hence, in the opinion of AENOR the project description in the final PDD is accurate and complete.

The location of the project activity is provided in Section A.4.1 of the PDD. The Project is located in La Venta Municipality, Region of Tehuantepec, Oaxaca State, Mexico. To provide the geographical coordinates of the project activity in decimals was requested from PPs through CAR 3. This issue has been considered by the PP. The project activity will be located in La Venta municipality, on coordinates 16°36'36.21" N and 94°47'23.98" W (decimal coordinates: 16.61005925 latitude and -94.78999567 longitude) which allows clear identification of the project site, hence**, CAR 3 is closed**.

Section A.4.3 of the final PDD gathers in its table the main technical specifications of turbines, and other equipment. With regard to this, data sources, calculation and technical specifications of the equipment were requested through **CL 2**. Evidence has been provided by PP and cross-checked to confirm that data stated in final PDD are consistent with those provided in the evidence. The project involves the installation of turbines models as follows: AW-1500 fabricated by Acciona Windpower. The PP has provided to the validation team with a technical brochure by Acciona Windpower /8/ along with the Statement of Compliance by Germanischer Lloyd Industries Services GmBH confirming the main characteristics of equipment.

On the other hand, and for checking the load factor of the power plant (47.24%) and the power generation, the wind power study /9/ by Acciona Energy has been provided. The study details the capacity factor and net generation of the wind farm.

AENOR has cross-checked with other approved and implemented similar CDM wind projects such as /7/, /10/ in the same region that values provided are reasonable and credible.
AENOR has verified that ex-ante load factor and power supply in the final PDD for the wind farm are the same that those stated in the wind study. Moreover, AENOR has checked that the study was performed by Acciona Energia, an Engineering company with wide experience in power generation industry (windpower generation).

As the data sources to determine the plant load factor data are from a reliable and credible source /9/ and resulting values of load factor are reasonable compared with similar project in the Region of Tehuantepec,

AENOR does not doubt of the veracity of the information provided in the PDD and considers that the load factor have been determined in compliance with the "Guidelines for the reporting and validation of plant load factors v.1" /11/.

As the issues explained in this item were corrected, and all evidence and calculation provided to the validation team, **CL2 is closed.**

The forecasted total amount of GHG emission reductions from the project in the final PDD is estimated at 2,450,150 tonnes of CO2 equivalents (tCO2e) during the 10 years crediting period.

The project start date is properly defined as 8 March 2010 as it is justified in section 3.6.1. The start date of the crediting period has been determined as 16 May 2012 or effective date of registration, whichever is later. To assess the consistent of this latter date a schedule /12/ of the implementation of the project was requested to the PP through **CL3** that was provided. The chosen date is realistic and credible, based on that schedule, as well as fulfilling with the CDM requirements. Thus, **CL 3 is closed.**

## 3.5 Baseline methodology

### 3.5.1 Applicability of the selected methodology to the project activity

The PDD describes the baseline methodology, which complies with the approved consolidated baseline methodology ACM002 (Version 12.1.0) for grid-connected electricity generation from renewable sources. The version of the methodology was updated to version 12.1.0, despite the fact that version 12.0 was applied in the PDD submitted for GSC. Thus, the version of the methodology has been correctly addressed in the final PDD and calculations, validated by the AENOR validation team.

In addition, the final PDD identifies in section B.2 the applicability conditions of the approved methodology and states how the project activity fulfils these conditions.

It is clearly stated in final PDD that the Project implies the installation of new grid-connected windpower plant at site where there were not renewable energy power plants operating prior to the implementation of the project activity (Greenfield plants). The electricity generated by the Project will be supplied to the National Interconnected System which is dominated by fossil fuel fired power plants.
In order to confirm the applicability of the methodology to the project activity the main licenses, permits and authorizations were requested to the PP in the **CL 1.** Accordingly, the generation permit granted by CRE /13/, the construction permit granted by the La Venta Municipality /14/, the tender act of granting by the CFE /15/ and the environmental resolution by the SEMARNAT /16/ have been provided to the validation team. These documents confirm that the project will be implemented as described in the PDD, then **CL 1 is closed** and the applicable methodology correctly chosen.

Based on site visits, interviews with stakeholders and relevant documents provided by PPs during the validation process such as permits and licenses provided, AENOR confirms the applicability conditions of the selected methodology to the project activity, as well as the version of this methodology used. The rest of applicability conditions related to hydropower plants, capacity additions, retrofits or replacements projects are not applicable to the proposed project activity.

### 3.5.2 Project boundary

**CAR 4** was raised to the PP to correctly define the project boundary throughout the PDD to be in compliance with the applicable methodology.

Finally, the PDD shows as project boundary the site where the wind power plant of the project is located and the power plants connected physically to the National Interconnected Grid that the project is connected to. Hence, **CAR 4 is closed.**

The geographic and system boundaries for the National Interconnected System (NIS) are clearly identified and information on the characteristics of the grid are published in the Electric Sector Forecast (Prospectivas del Sector Eléctrico) by the Energy Secretary of the Mexican Energy Ministry (SENER) publicly available and checked by AENOR; hence, AENOR considers that the project boundary is appropriate.

The project boundary was assessed considering information gathered from the visit, along with the relevant documents such as reports by SENER. Considering these sources the delineation in the final PDD of the project boundary is correct and meets the requirements of the selected baseline methodology.
In addition, all emission sources and gases related to the baseline scenario, project scenario, and leakage are clearly identified and described in a complete manner in section B.3 of the PDD. $CO_2$ is the main emission source and is included in the baseline scenario, but the gases $CH_4$ and $N_2O$ are not included in the project boundary in compliance with the methodology. $CO_2$, $CH_4$ and $N_2O$ are not included in the project activity as an emission source as per methodology. No leakage emissions are considered as per the applicable methodology.

The project activity is not expected to result in emissions other than those allowed by the methodology, and there are no greenhouse gas emissions occurring within the proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

### 3.5.3 Baseline identification

Regarding the baseline identification, the project activity is the installation of a new grid-connected windpower plant. The baseline scenario in accordance with ACM0002 (version 12.1.0) for grid-connected electricity generation from renewable energy sources is the equivalent electricity delivered to the grid by the project activity that would otherwise have been generated by the operation of grid-connected power plants in the Mexican Interconnected National Grid and 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" version 2.2.1 /17/.

The PDD provides information about the Mexican electric sector and a forecast for installed power capacity to describe this baseline with more detail. These data validated by the validation team are in parallel with SENER's official information data (Electric Sector Forecast 2009-2024) indicating that electricity generation from fossil fuel plants is the dominant scenario.

The approved methodology that is selected by the proposed CDM project activity prescribes the baseline scenario and no further analysis is required, thus it is not necessary to identify credible alternatives to the project activity in order to determine the most realistic baseline scenario. (VVM 1.2, paragraph 105). Therefore, the baseline determination is considered as transparent and reasonable.

### 3.5.4 Algorithms and/or formulae used to determine emission reductions

For the baseline calculation, the **CAR 7** was raised to the PP in order to provide the spreadsheet calculation and clarify the consideration of imports in the build margin. As the project participant has provided the calculations to reproduce them and imports have been addressed in the PDD, **CAR 7 is closed.**

The consideration of imports to calculate the Build Margin has been clarified and appropriate addressed in step 1 of section B.6.1 of the final PDD. According to information provided and checked by AENOR for BM calculation the spatial extent is limited to the project electricity system.

In addition, AENOR has checked that data used in emission reductions calculation have been the most recent data at the time of submission of the PDD to the DOE for validation, considering that the PDD was submitted for GSC on 27 October 2010. This matter has been clarified with PP and also with the Energy Secretary of Mexico through an official communication /18/.

The baseline calculation has been carried out considering the applicable methodology ACM0002 version 12.1 and the "Tool to Calculate the Emission Factor for an Electricity System" version 2.2.1. The tool has been also updated to this version by the PP in regard with the PDD to GSC.

All steps of the tool to calculate the emission factor and methodology have been correctly quoted in the final PDD, and assumptions and formulae applied in an appropriate way.

As calculation and official data sources have been provided to the validation team, AENOR has validated that data and assumptions considered in PDD and spreadsheet calculations are consistent with official data.

Therefore, taking into account the evidence and data provided by the PP, it is the opinion of AENOR that all documentation used is relevant for establishing the baseline scenario and is correctly quoted and interpreted in the final PDD. The assumptions and data used in the identification of the baseline scenario are appropriately justified, supported by evidence and can be deemed reasonable. In addition, relevant national and/or sectoral policies and circumstances are considered and listed in the final PDD.

The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

All the assumptions and data, including their references and sources, used by the project participants are listed in the PDD.

According to the baseline methodology, the emission factor has been calculated in a transparent and conservative manner using the "Tool to calculate the emission factor for an electricity system" following six steps:

**Step 1.-Identify the relevant electric power system.**

Using the boundary definition of the applicable methodology, the spatial extent of the project boundary includes all power plants physically connected to the Mexican Interconnected National Grid to which the CDM project power plant is connected. This has been validated to be in compliance with the "2009-2024 Electric Sector Forecast" of SENER /19/.

For the purpose of determining the OM emission factor, imports have been considered in the calculation. Taking into account the tool, the emission factor is considered 0 tCO2/MWh for imports from connected electricity systems in other host countries. There are no imports from other systems inside Mexico. Moreover, electricity exports are not subtracted from electricity generation data in baseline calculations.

For the purpose of determining the BM emission factor, the spatial extent is limited to the project electricity system. The electricity imports from USA have not increased during last years and represent a small percentage of the total electricity generation.

**Step 2.- Choose whether to include off grid power plants in the project electricity system.**

The option I, only grid power plants are included in the calculation.

**Step 3.- Select a method to determine the operating margin (OM).**

For the calculation of the OM emission factor, the simple OM emission factor calculation method is selected because low cost/ must-run projects constitute less than 50% of the total grid generation (20.98%) as confirmed by the Electric Sector Forecast 2009-2024 (Prospectivas del Sector Eléctrico 2009-2024) by SENER.

It has been validated that the option of simple OM and the ex-ante option with a 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation (years 2006,2007 and 2008) without requirement to monitor and recalculate the emission factor during the crediting period has been selected for the project.

**Step 4.-Calculate the operating margin emission factor according to the selected method.**

It has been validated that Simple OM is calculated using option B, based on data from 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.

$EF_{grid,OM,y}$ is calculated as 0.6487 tCO2e/MWh, a value lower than 0.6925 tCO2e/MWh considered in the PDD submitted to GSC. The difference is due to several data in the first PDD were taken incorrectly from the data sources: SENER reports: "2009-2024, 2008-2017 /20/ and 2007-2016 /21/ Electric Sector Forecast". Once data

have been corrected, AENOR have reproduced again the calculations to confirm that the revised values considered in calculation are consistent with the official ones.

Other data used in the OM and BM calculations such as the EFCO2,i,y is calculated in tCO2/TJ according to the Reviewed 2006 IPCC Guidelines for Greenhouse Gas Inventories ; FCi,y is expressed in TJ/day in the Forecast Reports, thus the total annual consumption per fuel type can be calculated by multiplying by 365; Carbon content and oxidation factor are from IPCC 2006 Guidelines on GHG Inventory (The Revised 2006 Guidelines for National Greenhouse Gas Inventories, IPCC) /22/.

Formulae and factors used to calculate the Operating Margin and the Build Margin are properly described in the final PDD and they are considered correct and transparent. Efficiency factors for GT (Gas Turbine), CCGT (Combined Cycle Gas Turbine) and IC (Internal Combustion) plants and self-use rates are obtained from the official document "Electric Sector Forecast 2009-2024" in a conservative way. The formula used to obtain emissions data is:

Operation Margin (tCO2/MWh)= Amount of fossil fuel type consumed in the project electricity system in year y (TJ) x CO2 emission factor (tCO2/TJ)/net electricity generated and delivered to the grid by all power sources serving the system (MWh).

CO2 emission factor of fossil fuel (t CO2/TJ) = IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of the 2006 IPCC Guidelines on National GHG Inventories.

Amount of fossil fuel type consumed in the project electricity system (TJ) = Fuel consumption (TJ/day) x 365 days.

**Step 5.- Calculate the build margin emission factor (BM).**

The sample group of power units used to calculate build margin is defined as the set of power capacity additions in the electricity system that comprises 20% of the system capacity, instead of system generation of the five power plants that have been built more recently. This option comprises the larger annual generation (21.39%). Moreover, none of the power units that belong to the set that comprises the larger annual electricity generation (SET>20%) started to supply electricity more than 10 years ago.

Moreover, for the proposed project activity, option 1) of the applicable methodology has been chosen in terms of vintage of data, i.e., for the fixed crediting period the BM emission factor will be calculated ex-ante, based on the most recent information available on plants already built in the year 2008.

EFgrid ,BM, y is calculated as 0.3759 tCO2e/MWh in the final PDD, which is lower than 0.3904 tCO2e/MWh, then conservative in the baseline context. The difference is due to several data in the first PDD were taken incorrectly from the data sources: SENER reports: "2009-2024, 2008-2017 and 2007-2016 Electric Sector Forecast".

The formula used to obtain emissions data is:

Build Margin = Net quantity of electricity generated and delivered to the grid by power unit (MWh) x CO2 emission factor (tCO2/MWh)/ Net quantity of electricity generated and delivered to the grid by power unit (MWh).

CO2 emission factor of power unit is calculated using option A2 of the tool, to be in compliance with the formula:

CO2 emission factor =3,6x CO2 emission factor of fossil fuel type (t CO2/G)]/ net energy conversion efficiency of power unit (%)

In order to be conservative, the most efficient technology (lowest emission factor) for all new installed power plants has been used in the calculation, which is 51.66% for combined cycle power plants, 39.42% for gas turbine, and 45.07% for internal combustion power plants, based on data source "Electric Sector Forecast 2009-2024".

Calculations have been reproduced and AENOR deems they are in compliance with the methodology, the Emission Factor Tool and data sources.

**Step 6.-Calculate the combined margin (CM) emissions factor.**

The option a) weighted average CM is chosen for calculating the combined margin, according to the applicable "Tool to calculate the emission factor for an electricity system". Based on this option the default weights: OM = 0.75 for Operating Margin and BM = 0.25 for build margin in the fixed crediting period of Windpower Projects are adopted.

As per baseline methodology ACM0002 and the "Tool to Calculate the Emission Factor for an Electricity System", the baseline emission considered are the emission reduction ERy during the crediting period which is the difference between baseline emissions and project emissions, as no leakage emissions are considered by the methodology.

These are:

1) Baseline emissions: baseline emissions (BEy in tCO2) are equal to baseline emission factor (EF grid CM y, in tCO2/MWh) times the net electricity supplied to the grid (EGy in MWh).

2) No Project Emissions for wind sources and no leakage have been considered for the proposed project activity according to the applicable methodology.

3) Emission reductions: ERy= BEy – PEy= BEy= EF grid CM y × EGy

With reference to the "Tool to Calculate the Emission Factor for an Electricity System", the simple OM emission factor (EFgrid,OM,y) is calculated as 0.6487 tCO2e/MWh. Similarly, the build margin emission factor (EFgrid,BM,y) is calculated ex-ante as 0.3759 tCO2e/MWh.

Therefore the combined baseline emission factor is determined ex-ante and will remain fixed during the crediting period,

EF grid CM y =0.6487 ×0.75 +0.3759 ×0.25=0.5805 (tCO2e/MWh)

According to the estimated annual electricity delivered to the grid for the fixed crediting period (422,076 MWh), the estimated annual average emission reductions of the Project is 245,015 tCO2e, which represents a reasonable estimation using the assumptions given by the Project and average lower than 260,417 tCO2e considered in the PDD submitted for GSC, then a conservative approach.

AENOR confirms that all assumptions and data used by the PP are listed in the final PDD, including their references and sources. Furthermore, all documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD, and all values used in the PDD are considered reasonable in the context of the proposed CDM project activity.

The baseline methodology ACM0002 and the tool have been applied correctly to calculate project emissions, baseline emissions, leakages and emission reductions. All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

## 3.6 Additionality

### 3.6.1 Starting date of the project activity and prior consideration of the CDM

It was foreseen that the start date of the project activity is 8 March 2010.

Regarding this matter, **CL4 and CAR 6** were raised to the PP to provide evidence in order to demonstrate whether the start date was defined according to the current definition of the "Starting date" as stated in the "Glossary of the CDM terms" version 5 /23/ and a timetable of the main events of the project to validate how the prior consideration of the CDM was considered according to the "Guidance on the demonstration and assessment of prior consideration of the CDM" v.4 EB 62 /24/.

As a result, the PP has provided timeline of the project with their evidence in order to assess whether the selected date as starting date of the project is the earliest date at which either implementation or

construction or real action of the project begins or how the prior consideration of the proposed project activity is fulfilled.

| Date | Event | Support/Reference |
|---|---|---|
| 11/02/2010 | Date for presenting offers to the public tender organized by CFE | CFE tender information /25/ |
| 08/03/2010 | Date when CE Oaxaca Cuatro S. de R.L. de C.V. won the CFE tender by the award of contract. | CFE resolution for the award of contract /15/ |
| 08/04/2010 | Date when CE Oaxaca Cuatro S. de R.L. de C.V.. signed the PPA with CFE | Copy of the PPA /26/ |
| 16/04/2010 | Date when CE Oaxaca Cuatro S. de R.L. de C.V.. signed the Engineering, Procurement and Construction (EPC) contract. | Copy of the EPC contract /27/ |
| 13/05/2010 | Date when the Regulatory Energy Commission (CRE) gave the Independent Production permit. | Copy of the Independent Production permit /13/ |
| 10/06/2010 | Date that CE Oaxaca Cuatro sent the Prior Consideration of the CDM of the project Oaxaca IV Wind Farm to the UNFCCC and the Mexican DNA (Interministerial Commission on Climate Change) | Copies of the emails, in this emails CE Oaxaca Cuatro sent the Prior Consideration of the CDM to the UNFCCC and the Interministerial Commission on Climate Change /28/ |
| 14/06/2010 | Date that Interministerial Commission on Climate Change confirm the reception of the Prior Consideration of the CDM | Copy of the email, in this email the Interministerial Commission on Climate Change confirms the reception of the Prior Consideration of the CDM to CE Oaxaca Cuatro/29/ |
| 06/07/2010 | Date that UNFCCC confirm the reception of the Prior Consideration of the CDM | Copy of the email, in this email the UNFCCC confirms the reception of the Prior Consideration of the CDM to CE Oaxaca Cuatro /30/ |
| 14/07/2010 | Date when the Construction License was obtained. | Copy of the Construction License. /14/ |
| 14/07/2010 | Date when the license of scheme change of land use, from agricultural to joint use (agricultural-industrial) was obtained. | Copy of the License of scheme change. /31/ |
| 27/10/2010 | Starting date of the public comment period for validation on the UNFCCC website | UNFCCC reference |

| Date | Event | Support/Reference |
|---|---|---|
| 12/11/2010 | Date of issuance of the Letter of Approval by the Interministerial Commission on Climate Change (Mexican DNA) | Copy of the Letter of Approval /4/ |

The selected starting date corresponds to the date on which the resolution of the CFE for the contract was awarded to CE Oaxaca Cuatro S. de R.L de C.V, i.e, 8 March 2010 (same date at PDD version 1). Next relevant hint represents the signature of the PPA between the PP and the CFE on 8 April 2010. Since the contract forces to the PP with strong commitments to carry out the project, under big potential penalties in case of breaches and, for sake of conservativeness, in the opinion of the AENOR validation team the 8 March 2010, i.e, the award of the contract by the CFE is the earliest date at which the real implementation of the project activity begins.

Regarding the prior consideration of the CDM and taking into account the "guidance on the demonstration and assessment of prior consideration of the CDM" v.4, as the project starting date is after 02 August 2008 and, the PDD was submitted for global stakeholder consultation on 27 October 2010, i.e., after the project starting date, the PPs have informed to the Host Party DNA (Mexico) and UNFCCC in writing of the commencement of the project activity and of their intention to seek CDM status.

PP has provided the validation team with the notification letters to the Mexican DNA and UNFCCC dated on 10 June 2010 and the "confirmation of receipt" from Mexican DNA and UNFCCC. In addition, AENOR has ensured that notification to the UNFCCC secretariat has been provided checking the publicly available list on the UNFCCC web page.

Therefore, both Mexican DNA and UNFCCC notifications have been provided within six months of the project activity start date in compliance with the "Guidelines on the demonstration and assessment of prior consideration of the CDM".

All evidence provided to the validation team are credible and reliable, hence in the opinion of the AENOR validation team the CDM project activity was seriously considered in the decision to implement the project activity.

**Hence, CL4 and CAR 6 are closed.**

### 3.6.2 Analysis of the additionality

The additionality of the Oaxaca IV Wind Energy Project as required by ACM0002 version 12.1.0 is demonstrated by applying the "Tool for the Demonstration and Assessment of Additionality" version 05.2 /32/.

During the validation process one Corrective Action Request (**CAR 5**) was raised regarding the additionality of the project activity explained in the first version of the PDD. Ultimately, in the opinion of the validation team, all actions requested were resolved by the PP, since the new criteria and assumptions considered comply with the methodology and tool of additionality. Therefore **CAR 5 has been closed.** The new assumptions are explained in the next paragraphs.

Applying Step 1 of the tool, three alternative baseline scenarios to the project have been identified and discussed in the final PDD. These are:

- Alternative 1: Execution of the project without its registration as CDM.
- Alternative 2: Continuation of the current situation: PP does not implement the project; hence the national grid consumers will continue using electricity from the National grid with a higher emission factor (Baseline scenario).
- Alternative 3: Construction of the power generation plants from renewable sources with equivalent electricity output within the Mexican electrical system, like biomass or hydropower plants.

The alternatives presented in Step 1 are complete, realistic and credible and comply with the regulation in place, following the Public Service of Electrical Energy Law ("Ley del Servicio Público de la Energía Eléctrica")/33/.

Concerning Step 2, the PP has chosen the investment analysis. An IRR benchmark analysis has been used by the PP to demonstrate the additionality of the project activity. It has been demonstrated that the project IRR without CDM revenues is estimated to be 8.78%. The project IRR post-tax is lower than the post-tax benchmark of 10.81% adopted by the Project Participant. As per the "Tool for the Demonstration and Assessment of Additionality" version 05.2 a relevant benchmark for a project's IRR can be derived from Government bond rates, increased by a suitable risk premium to reflect the private investment or project type. Thus, a post-tax benchmark has been derived from the Mexican Government treasury bonds raised by the country-specific risk premium indicated by the OECD. According to the current Mexican income tax law, shareholders do not pay income tax on dividends received, since they can accredit the taxes paid by the company distributing the dividends, making this benchmark a fully post tax benchmark. Furthermore, similar post-tax benchmark (Government bond rate+ OECD risk premium) has been used for similar registered projects in Mexico /7/ /44/.

The average January 2010 value, for a 10-year Government Bonds rate of 7.81% raised by the country-specific risk premium of 3% indicated by the OECD at January 2010, was considered to arrive at the benchmark of 10.81%. The IRR benchmark of 10.81% is validated to be suitable for the project activity by AENOR´s validation team in compliance with paragraph 12, Annex 5 of the EB62 report /37/ and paragraph 114 (b) of the VVM version 1.2.

The references from the Central Bank of Mexico /34/ and the OECD /35/ have been verified and crosschecked by AENOR and are found to be a conservative assumption in the CDM/additionality context; hence, they have been accepted by the validation team (the risk premium considered in this project activity is significantly lower than others used in former registered wind farm projects in Mexico). The IRR improves to 9.79% on considering CDM revenues, being, therefore, the financial returns of the proposed CDM project activity insufficient to justify the required investment.

The validation team verified that taxes and depreciation used in the investment analysis comply with Mexican legal requirements i.e. 30% value of the income tax for year 2012 and 29% from year 2013 onwards, and depreciation periods for civil works, machinery and equipment /36/.

Following Annex 5 of EB62 "Guidelines on the Assessment of Investment Analysis" /37/, it has been validated that the project IRR calculation reflects the expected operation of the underlying project activity (a technical lifetime of 20 years), that the capital cost of the assets and their depreciation as an expense to the project were not both treated to constitute a double counting of this cost, and that the cost of financing expenditures (i.e., loan repayments and interest) was not included in the calculation of the project IRR in the final version of the PDD and the IRR calculation spreadsheet /38/.

AENOR has verified and confirmed that the values used in the financial analysis are consistent with the value of the source and that information was available at the starting date of the project (08/03/2010) and was thus likely to have been considered in the decision given this short period of time between the investment decision /25/ and the action for the implementation of the project activity, it is unlikely in the context of the project that the input values would have materially changed. References are included in the PDD and IRR calculation spreadsheet.

The financial worksheets have been shown and verified to be correct. The assumptions used, the base documents and the financial calculations have also been verified.

In addition, during the assessment of this project, the reasonableness of the parameters used in the project IRR calculation were analysed by comparison with similar projects signed as CDM projects in the same area and publicly available data, as follows:

**Power tariff**

As mentioned in the PDD the project activity will be developed under the independent production formula considered by the "Law of Public Service of Electrical Energy". Under this scheme it is mandatory to sell the energy to CFE at a fixed price.

Therefore, the energy generated will be sold to CFE at an average price of 98.5 US$/MWh during the operation of the proposed project activity. AENOR has checked the contract signed between CFE and the PP /26/ and found the tariff values used in the financial model to be the same. Calculations were also found to be correct.

In addition, AENOR checked the PDDs of wind farm projects in Mexico and found the tariff used in the investment analysis and the final PDD, within the range of tariffs for registered CDM projects. The validation team also checked that even with the application of the highest tariff, the project IRR does not cross the benchmark.

Table 6. Comparison of tariffs among similar registered CDM projects in Mexico.

| Project | Capacity (MW) | Tariff (US$/MWh) | Indexed (Y/N) |
|---|---|---|---|
| Project 108: Bii Nee Stipa /39/ | 200.00 | 63 | Yes |
| Project 728 : Eurus Wind Farm /40/ | 249.00 | 69 | Yes |
| Project 517 : Bii Nee Stipa III /41/ | 164.00 | 73 | Yes |
| Project 1586: Santo Domingo Wind Energy Project /42/ | 160.00 | 61 | Yes |
| Project 1581: Bii Stinu Wind Energy Project /43/ | 164.00 | 61 | Yes |
| Project 2390: Fuerza Eolica del Istmo Wind Farm /44/ | 50.00 | 80 | No |
| Project 3860 : Eléctrica del Valle de México Wind Farm /45/ | 67.50 | 104 | No |
| Project 4634 : Piedra Larga Wind Farm /10/ | 90.00 | 68 | Yes |
| Project 4684 : Oaxaca I Wind Farm /7/ | 102.00 | 66 | No |
| **Oaxaca IV Wind Energy Project** | **102.00** | **68**[1] | **Yes** |

Source: http://cdm.unfccc.int/Projects/registered.html and Project Proponent.

Therefore, AENOR considers that the value for the tariff used for the IRR calculation as has been done in the PDD is appropriate and was valid and applicable at the time of the investment decision.

**Annual Power Generation**

The wind farm plant capacity factor of 47.24% was found to be to be within the range of similar projects signed as CDM in the same area, and is, therefore, accepted by AENOR's validation team.

[1] This is the tariff established in the Power Purchase Agreement (PPA) for the first year of operation. The PPA also establishes the tariff for the following years, resulting in an average tariff of 98.5 US$/MWh during the operational lifetime of the Project activity.

In addition, electricity generation was determined by a third party, Acciona Energía with data from the wind resource measurement, taking into account the on-site topography, geomorphology, air density, wind turbine efficiency and other basic data /9/.

Therefore, AENOR confirms that the above procedure for the annual power supply estimation is common practice for wind farm projects in Mexico.

Table 7: Comparison of the annual running hours among similar registered CDM projects in Mexico

| Project | Capacity (MW) | Annual operation hours | Load Factor (%) | Annual output GWh |
|---|---|---|---|---|
| Project 108: Bii Nee Stipa | 200.00 | 3,650 | 42.00% | 730.00 |
| Project 728 : Eurus Wind Farm | 249.00 | 3,951 | 45.10% | 983.60 |
| Project 517 : Bii Nee Stipa III | 164.00 | 3,592 | 41.00% | 590.40 |
| Project 846 : La Venta II /46/ | 83.30 | 3,694 | 42.17% | 307.73 |
| Project 1150: La Ventosa Wind Energy Project /47/ | 102.00 | 3,686 | 42.08% | 376.00 |
| Project 1586: Santo Domingo Wind Energy Project | 160.00 | 4,291 | 48.98% | 686.56 |
| Project 1581: Bii Stinu Wind Energy Project | 164.00 | 3,910 | 44.63% | 641.24 |
| Project 2390: Fuerza Eolica del Istmo Wind Farm | 50.00 | 4,279 | 48.85% | 214.00 |
| Project 3860 : Eléctrica del Valle de México Wind Farm | 67.50 | 4,319 | 49.30% | 295.51 |
| Project 4634 : Piedra Larga Wind Farm | 90.00 | 4,066 | 46.41% | 365.93 |
| Project 4684 : Oaxaca I Wind Farm | 102.00 | 3,674 | 41.94% | 374.75 |
| **Oaxaca IV Wind Energy Project** | **102.00** | **4,138** | **47.24%** | **422.08** |

Source: http://cdm.unfccc.int/Projects/registered.html and Project Proponent.

Therefore, according to the "Guidelines for the reporting and validation of plant load factors" and the crosschecking shown above, AENOR considers that the annual grid-connected electricity generation is reasonable and appropriate.

**Total Static Investment**

The total investment costs of US$ 205,726,000 have been derived from third party entities, Acciona Windpower which provided a quotation corresponding to equipment, machinery /48/, Siemens which provided a quotation for the transmission lines and substation /49/, and Acciona Energía which provided quotation for the different works enclosed under preoperative works e.g. wind farm layout, geological studies, fauna studies, non-destructive tests, topography, etc /50/. The PP has provided evidence of these investment costs and AENOR's validation team has checked that the total figure matches the amount stated in the financial model. In addition, PP has provided the EPC contract /27/ which shows that more than 95% of the static investment costs stated in the financial model are already committed.

The comparison results confirm that the investment of 2,017US$/KW stated in the PDD is within the range of the investment per MW for the registered CDM projects (See Table 8 below.)

Table 8: Comparison of investment per MW among similar registered CDM projects in Mexico

| Project | Capacity (MW) | Total investment US$ 1,000 | Investment per MW US$ 1,000 |
|---|---|---|---|
| Project 108: Bii Nee Stipa | 200.00 | 270,000 | 1,350 |
| Project 728 : Eurus Wind Farm | 249.00 | 395,412 | 1,588 |
| Project 517 : Bii Nee Stipa III | 164.00 | 205,000 | 1,250 |
| Project 846 : La Venta II | 83.30 | 103,712 | 1,245 |
| Project 1586: Santo Domingo Wind Energy Project | 160.00 | 369,280 | 2,308 |
| Project 1581: Bii Stinu Wind Energy Project | 164.00 | 367,051 | 2,238 |
| Project 2390: Fuerza Eolica del Istmo Wind Farm | 50.00 | 122,904 | 2,458 |
| Project 3860 : Eléctrica del Valle de México Wind Farm | 67.50 | 151,837 | 2,249 |
| Project 4634 : Piedra Larga Wind Farm | 90.00 | 186,516 | 2,072 |
| Project 4684 : Oaxaca I Wind Farm | 102.00 | 192,234 | 1,885 |
| **Oaxaca IV Wind Energy Project** | **102.00** | **205.726** | **2,017** |

Source: http://cdm.unfccc.int/Projects/registered.html and Project Proponent

According to the above project discussion, and since the value used in the financial analysis is consistent with the value of the source, it is AENOR's opinion that the total investment used in the PDD was reasonable, valid and applicable at the time of the investment decision.

**Annual Costs (Running costs)**

The applied annual operational costs have been crosschecked with the "Good Practice Guide for Wind Farms in Mexico" /51/ by Herman Snel (report funded by the Global Environment Facility and implemented by the United Nation Program for Development (UNDP). This report considers an average annual operational cost of 5%-7% regarding the total investment of the project.

As long as the average annual operational costs of the project activity are 5.36%, the validation team of AENOR has assessed that operational costs of the project activity are in line with those values, and then they are consider appropriate.

Annual land costs of US$ 928,000 were estimated by the PP according to its experience developing Eurus Wind Farm in the same region. PP has provided the up-to-date summary of the contracts signed /52/ which shows that more than 74% of the land costs stated in the financial model are already committed. Annual CPI escalation is included in the clauses of the contracts signed between landowners and the PP checked by AENOR /53/. The inflation scenario has also been checked and was found to derive from the inflation forecast of the Central Bank of Mexico /54/, thus in AENOR's opinion the land costs and its annual escalation deems appropriate. Besides, AENOR has validated that with zero land costs the project IRR is still below the benchmark.

It is common practice in wind energy projects that the manufacturer´s warranty covers the wind turbines for the first years of operation. This fact has been assessed by the validation team of AENOR in the proposed project activity.

In this project activity, during the first two years, the manufacturer's warranty is applicable, which implies a low level of operational expenses for the owner. According to that, only the costs related to the asset insurance, balance of plant, land and administration are considered as operational costs by the Project Proponent in the investment analysis, being most of the O&M costs (spare parts and work force) covered by Acciona Windpower´s warranty (manufacturer and technology provider).

Once the warranty expires, the spare parts and manpower are already considered as O&M costs in the investment analysis which involves an escalation in the O&M costs, after the second year of operation in accordance with the annual O&M quotations provided by Acciona Energía /55/. According to these quotations, the wind farm has 5 stages in its operational lifetime: years 1st to 2nd (guarantee period); years 3rd to 5th O&M 68,450 US$/turbine; 85,344 US$/turbine for years 6th to 10th; 115,510 US$/turbine for years 11th to 15th and 154,075 US$/turbine for years 16th to 20th. O&M costs are indexed to the Mexican CPI long term forecast provided by the Central Bank of Mexico at the beginning of every stage. AENOR has checked that the quotations match the amounts stated in the financial model.

Lastly, to verify if the report and data considered were appropriate for the project activity, the reasonableness of the applied average annual O&M costs (1.71 cUS$/KWh), were found to be to be within the range of similar projects signed as CDM project in the same area (see Table 8 below) and therefore accepted by the validation team of AENOR.

Table 9. Comparison of O&M costs among similar registered CDM projects in Mexico

| Project | Capacity (MW) | O&M costs (c US$/KWh) |
|---|---|---|
| Project 728 : Eurus Wind Farm | 249.00 | 1.66 |
| Project 1581: Bii Stinu Wind Energy Project | 164.00 | 1.90 |
| Project 846 : La Venta II | 83.30 | 1.08 |
| Project 2390: Fuerza Eolica del Istmo Wind Farm | 50.00 | 0.95 |
| Project 3860 : Eléctrica del Valle de México Wind Farm | 67.50 | 0.55 |
| Project 4634 : Piedra Larga Wind Farm | 90.00 | 1.29 |
| Project 4684 : Oaxaca I Wind Farm | 102.00 | 0.67 |
| **Oaxaca IV Wind Energy Project** | **102.00** | **1.71** |

Source: http://cdm.unfccc.int/Projects/registered.html and Project Proponent

Also, total generation costs of the Project (6.58 cUS$/KWh) were validated by AENOR's team, crosschecked with the Electricity generation average costs provided by SENER in its "National Energy Balance 2003 for Mexico" /56/ (7.40 cUS$/KWh), and were found to be conservative, hence they were accepted by AENOR's validation team.

Taking into account the documents provided by the PP and the different crosschecks carried out by AENOR's validation team, the applied annual operational costs and the assumptions made were considered reasonable and appropriate.

**Sensitivity Analysis**

The PDD includes a sensitivity analysis to demonstrate that the conclusion regarding the financial/economic attractiveness withstands reasonable variations in the critical assumptions.

For this purpose, variations in the range of +/- 10% for the parameters of electricity price, total investment costs and O&M costs have been considered, since that range is reasonable for the project context and these variables constitute more than 20% of either total project costs or total project revenues. The electricity price is not analysed since there is a PPA between CFE and PP where the electricity prices are already established, thus no variation is possible.

The sensitivity analysis shows that without the income from CER sales the IRR of the proposed project is also lower than the benchmark, even when the possible variations of the main parameters are considered. It was confirmed that the conclusion obtained in the analysis mentioned above highly suggests that the project activity is unlikely to be financially attractive.

In addition, AENOR has validated that higher variations in the parameters that would make the project IRR reach the benchmark are not likely to occur due to the following facts:

- 14.9% decrease in the total investment costs. Prices, including those for the main equipment and raw materials, have been increasing in recent years in Mexico /57/. In addition, the investment cost per MW of the project was found to be in line with similar registered projects in the area; therefore, it is unlikely that the total investment will decrease by 14.9%, such that the project IRR reaches the benchmark.
- 86.6% decrease in the total O&M costs. As told above, prices have been increasing in recent years in Mexico. In addition the O&M cost of the project was found to be within the range of similar registered projects in the area; therefore, it is unlikely that total O&M costs will decrease by 86.6%, such that the project IRR reaches the benchmark.
- 15.9% increase in electricity generation. The annual electricity output determined by a third party, Acciona Energía, an engineering firm specialised in the wind energy sector, resulting in a plant capacity factor of 47.24%. In addition, the maximum load factor of CDM registered projects in the area is 48.98%; therefore, it is unlikely that the load factor of the project will increase to 54.75%, such that the project IRR reaches the benchmark.

AENOR reviewed and confirmed all related documents. The assessments clearly show that investment is unlikely to be 14.9% lower, electricity generation 15.9% higher and O&M costs 86.6% lower.

In summary, it is AENOR's opinion that the additionality of the project is sufficiently demonstrated based on the investment analysis, that the project is not a likely baseline scenario, and that those emission reductions are, therefore, additional.

**Barrier analysis**

The barrier analysis has not been selected to demonstrate the additionality.

**Common practice analysis**

According to the tool, a common practice analysis is carried out. AENOR assessed the geographical scope of the common practice analysis and found it appropriate. The analysis shows that there is only one activity similar to the project activity in Mexico without CDM support: La Venta III project with 101 MW.

La Venta III is being developed under a national large-scale renewable energy program called PERGE /58/ with a grant given by GEF (through FMAM). These funds and incentives are not available for the proposed project activity. Therefore the proposed project clearly differentiates from this project, and cannot be taken as common practice in Mexico.

In summary, based on our local and sectoral expertise it is AENOR's opinion that the additionality of the project is sufficiently demonstrated based on the investment analysis, that the project is not a likely baseline scenario, and that those emission reductions are, therefore, additional.

## 3.7 Monitoring Plan

### 3.7.1 Compliance of the monitoring plan with the approved methodology

**CL 5** was raised to the PP for correctly considering the same nomenclature of the parameters to be monitored in the PDD in compliance with the applicable methodology and the tool. Finally, the last version of the PDD shows in section B.7.1 the parameters to be monitored in an appropriate way. Then, **CL 5 is closed.** The Project uses the approved consolidated monitoring methodology ACM0002 Version 12.1.0 for emissions grid-connected electricity generation from renewable sources.

Applicability of this methodology is justified in the final PDD as it involves grid-connected renewable power generation using wind energy.

The combined margin emission factor is determined ex-ante based on the most recent information available. Accordingly, the monitoring plan includes net electricity generated supplied to the grid by the project activity. Data may be verified against receipt of sales.

As stated in the methodology ACM0002 Version 12.1.0 and in the PDD, the main monitoring parameter is the following:

- EG facility, y: Quantity of Net Electricity (MWh) generated supplied by the project plant to the grid in year y at Ixtepec substation: This data shall be measured continuously and at least recording monthly.
  Since this project activity shares the transmission line to Ixtepec substation with another project B (Oaxaca II, which has been also validated by AENOR) where a main meter and back up meter will be installed for measuring the electricity delivered to the grid for the both projects, the EGfacility will be calculated as per the formula:

$$EGfacility, y = \left(\frac{\text{EG project, y}}{EG\ project, y + EG\ another, y} * EG\ output, y\right) - EG\ import, y$$

As a consequence, the following parameters will be also monitored:

- **EG $_{output,y}$:** Electricity supplied to the grid by the proposed project and 'another project B' during year y. This data will be continuously measured and at least monthly recording with a bidirectional main meter M3 and a M3 back meter at Ixtepec substation.
- **EG $_{import,y}$:** Electricity purchased from the grid by the proposed project and 'another project B' during year y. This data will be continuously measured and at least monthly recording with a bidirectional main meter M3 and a M3 back meter at Ixtepec substation.
- **EG $_{project,y}$:** Electricity generated by the proposed project during year y and measured at the project site Oaxaca IV substation. This data will be continuously measured and at least monthly recording with a bidirectional main meter M2 and a M2 back meter.
- **EG $_{another,y}$:** Electricity generated by the another project B during year y and measured at the project site B substation (Oaxaca II substation). This data will be continuously measured and at least monthly recording with a bidirectional main meter M1 and a M1 back meter.

Based on formula applied and considering that electricity imported by the proposed project activity and the "project B" will be deducted from electricity supplied to the grid, AENOR considers this approach as conservative. On the other hand, AENOR has checked other similar registered projects with sharing meters such as project numbers 3934/59/ and 3894 /60/.

Moreover, further information concerning the calibration requirements was requested from the PP through the **CL 6.** As a consequence, section B.7.1 of the final PDD has been further developed on that matter. Bidirectional meters will be installed at the project site, project B site and Ixtepec substation. This metering equipment will comply with the CFE regulations and will be annually calibrated by the CFE to ensure that the error from equipment shall not exceed +/- 0.2%. Therefore, **CL 6 is closed.**

Oaxaca IV Wind Energy Project complies with the methodology ACM0002 Version 12.1.0, therefore in the PDD the main monitoring parameter is the EG facility, y Quantity of Net Electricity *(KWh)* generated supplied by the project plant to the grid in year y and the other parameters included in the formula.

In the opinion of the AENOR team all necessary parameters required by the selected approved methodology are contained in the monitoring plan. They are clearly described and the means of monitoring described in the plan comply with the requirements of the methodology. Thus, the monitoring plan is in compliance with the applicable methodology.

On the other hand, the PP has developed a CDM Manual for the operational and management of the monitoring activities. The Manual has been provided to the AENOR team and details information to gather, record, process, and manage data to calculate the emission reductions, considers training actions, details responsibilities and authorities of monitoring activities, defines procedures for collecting, archiving, measuring and calculation procedure and procedures for quality assurance and quality control.

### 3.7.2 Implementation of the Monitoring Plan

After the review of evidence provided by the PP, the interview and communications with PP, AENOR confirms that monitoring arrangements described in the monitoring plan are feasible within the project design and that the means considered for the implementation, including data management, quality and assurance control procedures, are sufficient to ensure that the emission reductions achieved resulting from the proposed CDM project activity can be reported ex post and verified.

Therefore, in opinion of the AENOR validation team the PP will be able to implement the monitoring plan.

## 3.8 Comments by Local Stakeholders

In order to assess the adequacy of the local stakeholder consultation, during the on-site visit the AENOR team requested the PP not only provide evidence about the consultation process, but also to hold interviews with the local stakeholders relevant for the project activity. With regard to this, it was requested through **CL 9** to provide evidence about the consultation process. As a result, the minutes of the meetings with stakeholders /61/ have been provided, thus **CL9 is closed.**

The consultation process was carried out on 20-22 October 2010 with local stakeholders and 11 October 2010 with national stakeholders that have been evidenced by the minutes of meetings.

Relevant local and national stakeholders, such as local residents from the communities affected by the wind farm, SENER o Mexican DNA were invited to the consultation process for the proposed CDM project activity. During the on-site visit, the AENOR team held interviews with some of the local stakeholders affected by the project activity in order to know their opinions about the implementation of the project. By means of documents reviewed and the interviews performed, AENOR considers that the summary of the comments received during the consultation process, along with the PPs responses included in section E.2 of the PDD is complete. The main conclusions of the meetings and opinions collected from questionnaires are included in the PDD, section E.2. A complete summary of the comments received during the process is included in the PDD. But also, the information in section E.3 of the PDD gives a summary of how the comments received from local stakeholders were considered.

Hence, in the opinion of the AENOR team the local stakeholder consultation process was suitability performed.

## 3.9 Environmental Impacts

As explained in section 3.5.1 above, the E.I.A /62/ was requested along with its approval /16// to the PP and provided, but also further information about main measures established in the resolution of SEMARNAT was raised to the PP to include in the PDD through the **CL8.**

Final PDD states in its section D, further information about the main environmental impacts gathered in the resolution S.G.P.A/DGIRA.DG.66345.10 and measures to diminish them. Then**, CL8 is closed.**

All the impacts would be within an acceptable limit by carrying out corresponding mitigation measures as per the statement of the E.I.A. Moreover, AENOR confirms that environmental information in PDD is consistent with the resolution of SEMARNAT and that the PP has followed a correct analysis of environmental impacts in accordance with procedures as required by the host party.

Therefore, in the opinion of AENOR, the Project will not have any significant impacts on the environment since measures of pollution avoidance and controls as well as ecological protection measures have been considered.

In addition, AENOR confirms that the host party's DNA confirmed the contribution of the project to the sustainable development of the Mexico during the on-site visit and through the approval letter as:

- Reduces GHG emissions in Mexico compared with the business-as-usual scenario.
- Helps to stimulate the growth of the renewable sources in Mexico.
- Creates local employment opportunities during the construction, operation and maintenance of the project.
- Improves the livelihood of the local communities. In fact, during the on site visit, AENOR could verify several activities of a social sustainability plan in Oaxaca implemented in local communities.

# 4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to Decision 3/CMP.1, the validator shall make publicly available the PDD and receive, within 30 days, comments on the validation requirements from parties, stakeholders and UNFCCC accredited NGOs and make them publicly available.

AENOR published the project documents on CDM website (http://unfccc.cdm.int) on 27 October 2010 and invited comments by parties, stakeholders and non-governmental organisations. No comments were received.

# 5 VALIDATION OPINION

AENOR has performed a validation of the Oaxaca IV Wind Energy Project, in Mexico. The validation process was performed on the basis of all issues and criteria of UNFCCC for CDM projects, the host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting. The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plans; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion. In the course of the validation process corrective actions and clarifications were raised; all have been successfully closed

The Project participant used the "Tool for demonstration and assessment of additionality" version 05.2, and the "Guidance on the demonstration and assessment of prior consideration of the CDM" version 04 to demonstrate the additionality of the Project. In line with this tool, the PDD provides an investment analysis to determine that the project activity itself is not the baseline scenario. The methodology ACM0002 v 12.1.0 and the tool to calculate the emission factor for an electricity system version 2.2.1 was also applied to determine the emission factor of the Mexican Grid.

The investment analysis demonstrates that the proposed project activity 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.

The review of the project design documentation and additional documents related to baseline and monitoring methodology; and the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided AENOR with sufficient evidence to validate the fulfillment of the stated criteria.

In detail the conclusions can be summarized as follows:

- The project is in line with all relevant host country criteria of Mexican DNA and all relevant UNFCCC requirements for CDM. The LoA from Mexico is dated in November 2010.

- The project additionality is sufficiently justified in the PDD.

- The monitoring plan is transparent and adequate.

- The calculation of the project emission reductions has been carried out in a transparent and conservative manner, so that the calculated emission reductions of 2,450,150 tCO2e are most likely to be achieved within the fixed crediting period.

In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria. The validation is based on the information made available to us and the engagement conditions detailed in this report.

The validation has been performed using a risk based approach, as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, AENOR cannot be held liable by any party for decisions made or not made based on the validation opinion, which goes beyond the purpose.

Date. 11 May 2012

| | |
|---|---|
| Luis Robles Olmos | Jose Luis Fuentes Pérez |
| Authorized person | Validation Team Leader |

# 6 CORRECTIVE ACTION REQUESTS, CLARIFICATIONS AND FORWARD ACTION REQUESTS

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| FINDING | Nº 1 | | |
| Classification | CAR ☒ | CL ☐ | FAR ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | Letter of approval by the DNA of Mexico has to be provided. | | |
| **PP RESPONSE #1** | LoA is provided | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK since LoA is provided and checked to be consistent and appropriate according to the VVM. V.1.2 | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | CAR/CL CLOSED ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| FINDING | Nº 2 | | |
| Classification | CAR ☒ | CL ☐ | FAR ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | Name of organization specified in annex 1 of the PDD does not match with the name in section A.3.. | | |
| **PP RESPONSE #1** | Final PDD has been updated | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK, since final PDD has been updated and data are consistent throughout the PDD. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | CAR/CL CLOSED ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| FINDING | Nº 3 | | |
| Classification | CAR ☒ | CL ☐ | FAR ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | The project is located in La Venta Municipality. Oaxaca State. Mexico.<br>Latitude and longitude of the site shall be indicated in decimal points. | | |
| **PP RESPONSE #1** | Coordinates have been provided in decimals format | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as PDD has been corrected with coordinates in decimals which are consistent with CDM requirements. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | CAR/CL CLOSED ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| **FINDING** | **Nº 4** | | |
| **Classification** | **CAR** ☒ | **CL** ☐ | **FAR** ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | The project boundary defined in section A.2 of the PDD shall be consistent with the applied methodology. | | |
| **PP RESPONSE #1** | Project boundary has been corrected to be consistent with the methodology. | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as PDD has been corrected. Then, the final PDD gathers a definition of the project boundary in compliance with the applicable methodology in its section A.2. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| **FINDING** | **Nº 5** | | |
| **Classification** | **CAR** ☒ | **CL** ☐ | **FAR** ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | The PDD justifies that the project itself is not a likely baseline scenario through the demonstration of its additionality by applying the "Tool for the demonstration and assessment of additionality" version 05.2<br>The additionality analysis of the project is justified by investment analysis. Further evidence about the chosen financial benchmark, about the appropriateness of the input values used (techno-economic parameters and assumptions) in the investment analysis shall be provided i.e. tariff, power supply, electricity generation, investment costs, O&M costs etc.<br>Input values used in all investment analysis should be valid and applicable at the time of the investment decision.PDD shall clearly state the time when investment decision took place. Full interlinked spreadsheets of the IRR calculations and sensitivity analysis have to be provided to the validation team. | | |
| **PP RESPONSE #1** | | | |
| *It shall address the corrective action taken in details* | The appropriateness of the input values has been explained in the PDD and the relevant evidences and spreadsheets have been provided to the validation team. | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | Required evidence have been provided as well the interlinked spreadsheets and found to be correct. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| **FINDING** | **Nº 6** | | |
| **Classification** | **CAR** ☒ | **CL** ☐ | **FAR** ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | The prior consideration of the CDM has to be demonstrated according to the latest "Guidance on the demonstration and assessment of prior consideration of the CDM" and evidence has to be provided to the validation team.<br>The PDD shall include a timetable indicating all the relevant information regarding the development of the project itself and the main events related to the CDM development of the project. | | |
| **PP RESPONSE #1** | A timeline with evidence has been provided to the validation team and included in the PDD. | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK, as evidence provided is consistent and prior consideration is demonstrated as per CDM requirements. A complete timeline has been provided along with the evidence. AENOR has assessed the different milestones and considers that prior consideration is correctly demonstrated. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| **FINDING** | **Nº 7** | | |
| **Classification** | **CAR** ☒ | **CL** ☐ | **FAR** ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | Spreadsheet calculation has to be provided to the validation team to reproduce it.<br>It shall be clarified in PDD whether imports are used to calculate the BM in compliance with the applicable tool. | | |
| **PP RESPONSE #1** | Spreadsheet has been provided and issues on imports appropriate clarified in the PDD. | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as PDD has been provided and issues corrected and clarified. Calculation has been provided. AENOR has reproduced it and the results are the same. Formulae and data are detailed in the PDD and they are in compliance with the methodology and tools associated. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| FINDING | Nº 8 | | |
| Classification | CAR ☒ | CL ☐ | FAR ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | Information about the person/entity is also considered a project participant shall be included in the PDD. | | |
| **PP RESPONSE #1** | Section B.8 of the PDD has been modified | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as information has been corrected and included in the final PDD. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| **FINDING** | **Nº 1** | | |
| **Classification** | **CAR** ☐ | **CL** ☒ | **FAR** ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | The E.I.A approval has to be provided to the validation team, as well as further information regarding other laws, permits, or authorizations such as:<br>- Generation Permit<br>- Fulfilment with the Municipality legal framework.<br>- Construction permit | | |
| **PP RESPONSE #1** | Evidence requested by AENOR have been provided | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as evidence requested have been provided. Main permits and licenses requested have provided. They confirm that the proposed project can be implemented as described in the PDD. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| **FINDING** | **Nº 2** | | |
| **Classification** | **CAR** ☐ | **CL** ☒ | **FAR** ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | Data sources and calculations used to estimate those values have to be provided to the validation team, along with technical specifications of turbines to be used in accordance with "Guidelines for the reporting and validation of plant load factors" version 01. | | |
| **PP RESPONSE #1** | Information on load factor and generation has been provided to the validation team with their data sources. | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as evidence and data sources are consistent with information in the PDD. Technical specifications and calculations related to the load factor have been provided. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| FINDING | Nº 3 | | |
| Classification | CAR ☐ | CL ☒ | FAR ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | The implementation schedule of the project activity shall be provided to the validation team. | | |
| **PP RESPONSE #1** | A schedule has been provided to the validation team | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as the schedule is provided and consistent with information in the PDD. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| **FINDING** | **Nº 4** | | |
| **Classification** | **CAR** ☐ | **CL** ☒ | **FAR** ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | The starting date defined in the PDD is March 08 2010 taking into account the definition of the CDM glossary terms v.5. However, the evidence of the fact considered in that date should be provided to the validation team. | | |
| **PP RESPONSE #1** | Evidence has been provided | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK since evidence have been provided. Once all evidence has been provided and milestones defined, in the opinion of AENOR the chosen date is the earliest according to the glossary terms. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| FINDING | Nº 5 | | |
| Classification | CAR ☐ | CL ☒ | FAR ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | In section B.7.1 of the PDD shall consider parameters stated in the applicable methodology and tools applied. | | |
| **PP RESPONSE #1** | Monitoring section of the PDD has been corrected to be in compliance with the methodology | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as parameters have been considered as per the methodology. Further information has been detailed in the PDD and this is in compliance with the methodology and tools. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | CAR/CL CLOSED ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| FINDING | Nº 6 | | |
| Classification | CAR ☐ | CL ☒ | FAR ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | Calibration frequency of meters to be installed shall be clarified and evidence provided. | | |
| **PP RESPONSE #1** | Further information on calibration requirements have been included in the PDD. | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as calibration requirements has been provided. Further explanation has been included in the final PDD in its section B.7.1 and B.7.2 related to calibration requirements. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | CAR/CL CLOSED ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| **FINDING** | **Nº 7** | | |
| **Classification** | **CAR** ☐ | **CL** ☒ | **FAR** ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | Lifetime of the project activity shall be clearly and consistently defined in the PDD. | | |
| **PP RESPONSE #1** | Evidence has been provided to demonstrate the lifetime of the project. | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as evidence has been provided and information is consistent throughout the PDD. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| **FINDING** | **Nº 8** | | |
| **Classification** | **CAR** ☐ | **CL** ☒ | **FAR** ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | Further information shall be provided in the PDD regarding measures to diminish the main negative impacts. As well, E.I.A shall be provided to the validation team. | | |
| **PP RESPONSE #1** | Further information has been detailed in the PDD on environmental issues. | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK since further information has been provided in the final PDD. Main negative impacts are detailed and measures to diminish them also considered. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

| PROJECT ACTIVITY | Oaxaca IV Wind Energy Project | | |
|---|---|---|---|
| FINDING | Nº 9 | | |
| Classification | CAR ☐ | CL ☒ | FAR ☐ |
| **Description of finding**<br>*Describe the finding in unambiguous style; address the context (e.g. section)* | Minutes of the meetings and other support documentation shall be provided to the validation team. | | |
| **PP RESPONSE #1** | Minutes have been provided. | | |
| *It shall address the corrective action taken in details* | | | |
| *It shall provide and indentified the evidences proposed (if applicable)* | | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues. In case of non-closure additional corrective action and DOE assessments (#2, #3, etc.) shall be added* | OK as minutes have been provided. They confirm the information detailed in the PDD. | | |
| **PP RESPONSE #2** | *This section shall be filled by the PP.* | | |
| *Corrective action* | | | |
| *Evidences proposed* | | | |
| **DOE Assessment #2** | | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | **CAR/CL CLOSED** ☒ | To be checked during the periodic verification ☐ | |

# 7 REFERENCES

**Category 1 documents:** Documents provided by the project proponents that relate directly to the GHG components of the project. These have been used as direct sources of evidence for the determination conclusions.

**Category 2 documents:** Background documents related to the design and/or methodologies employed in the design or other reference documents. Where applicable, Category 2 documents have been used to check project assumptions and confirm the validity of information given in the category 1 documents.

| Category | Ref | Document Name | Date | Author/Competent Authority |
|---|---|---|---|---|
| 1 | 1 | Initial PDD version 1.0 | October 2010 | PP |
| 1 | 2 | Final PDD version 2.0 | December 2011 | PP |
| 2 | 3 | ACM0002 version 12.1.0 | | CDM-EB |
| 1 | 4 | Mexican LoA | November 2010 | PP |
| 2 | 5 | Validation and Verification Manual V.1.2 | | CDM-EB |
| 1 | 6 | Statement of Compliance BY Lloyd | | PP |
| 2 | 7 | Project 4683: Oaxaca I Wind Farm Project | | CDM-EB |
| 1 | 8 | Technical specifications of turbines | | Acciona Windpower |
| 1 | 9 | Wind power Study | 11 January 2010 | Acciona Energy |
| 1 | 10 | Project 4634 : Piedra Larga Wind Farm | | CDM-EB |

| Category | Ref | Document Name | Date | Author/Competent Authority |
|---|---|---|---|---|
| 2 | 11 | Guidelines for the reporting and validation of plant load factors v.1". | | CDM-EB |
| 1 | 12 | Project schedule | | PP |
| 1 | 13 | Generation Permit | May 2010 | CRE |
| 1 | 14 | Construction Permit | July 2010 | La Venta Municipality |
| 1 | 15 | Tender Act of granting | 8 March 2010 | CFE |
| 1 | 16 | E.I.A resolution | September 2010 | SEMARNAT |
| 2 | 17 | Tool to calculate the emission factor for an electricity system, version 2.2.1 | | CDM-EB |
| 1 | 18 | Communication with the Energy Secretary of Energy | 2010 | Energy Secretary of Energy |
| 1 | 19 | 2009-2024 Electric Sector Forecast | | SENER |
| 1 | 20 | 2008-2017 Electric Sector Forecast | | SENER |
| 1 | 21 | 2007-2016 Electric Sector Forecast | | SENER |
| 2 | 22 | Guidelines IPCC 2006 | 2006 | UNFCCC |
| 2 | 23 | Glossary CDM Terms | | CDM-EB |
| 2 | 24 | Guidance on the demonstration and assessment of prior consideration of the CDM | | CDM-EB |

| Category | Ref | Document Name | Date | Author/Competent Authority |
|---|---|---|---|---|
| 1 | 25 | CFE Tender information | February 2010 | CFE |
| 1 | 26 | Power Purchase Agreement | April 2010 | PP-CFE |
| 1 | 27 | EPC Contract | April 2010 | PP |
| 1 | 28 | Notification to UNFCCC and Mexican DNA | June 2010 | PP |
| 1 | 29 | Email from Mexican DNA | June 2010 | PP |
| 1 | 30 | EMAIL from UNFCCC | July 2010 | PP |
| 1 | 31 | License of scheme change | July 2010 | PP |
| 2 | 32 | Tool for the demonstration and assessment of Additionality. Version 05.2 | | CDM - Executive Board |
| 2 | 33 | Electricity Public Service Law | December 1993 | Government of Mexico |
| 1 | 34 | 10-year Mexican Government Bonds | 2010 | Central Bank of Mexico |
| 1 | 35 | Country Risk premium for Mexico | 2010 | OECD |
| 2 | 36 | Tax and depreciation requirements. http://www.sat.gob.mx/sitio_internet/informacion_fiscal/legislacion/52_17377.html | 2009 | Mexican Federal Government |
| 2 | 37 | Guidelines on the Assessment of Investment Analysis version 5 | July 2011 | CDM - Executive Board |

| Category | Ref | Document Name | Date | Author/Competent Authority |
|---|---|---|---|---|
| 1 | 38 | IRR calculation spreadsheet for the project. | 2011 | Project Proponent |
| 2 | 39 | Project 108: Bii Nee Stipa | | CDM - Executive Board |
| 2 | 40 | Project 728 : Eurus Wind Farm | | CDM - Executive Board |
| 2 | 41 | Project 517 : Bii Nee Stipa III | | CDM - Executive Board |
| 2 | 42 | Project 1586: Santo Domingo Wind Energy Project | | CDM - Executive Board |
| 2 | 43 | Project 1581: Bii Stinu Wind Energy Project | | CDM - Executive Board |
| 2 | 44 | Project 2390: Fuerza Eolica del Istmo Wind Farm | | CDM - Executive Board |
| 2 | 45 | Project 3860 : Eléctrica del Valle de México Wind Farm | | CDM - Executive Board |
| 2 | 46 | Project 846 : La Venta II | | CDM - Executive Board |
| 2 | 47 | Project 1150: La Ventosa Wind Energy Project | | CDM - Executive Board |
| 1 | 48 | Quotation for Equipment and Machinery | January 2010 | Acciona Windpower |
| 1 | 49 | Quotation for transmissions lines and substation | January 2010 | Siemens |
| 1 | 50 | Quotation for development works | January 2010 | Acciona Energía |

| Category | Ref | Document Name | Date | Author/Competent Authority |
|---|---|---|---|---|
| 2 | 51 | Good Practice Guide: An action plan to eliminate barriers to the development of wind energy in Mexico. | 2006 | Snel, Herman. Electric Research Institute. |
| 2 | 52 | Up-to-date summary of land costs | 2011 | Project Proponent |
| 1 | 53 | Land Contracts | 2010 | Project Proponent and Landowners |
| 2 | 54 | Mexican inflation rate scenario | January 2010 | Central Bank of Mexico |
| 1 | 55 | Quotation for O&M costs | January 2010 | Acciona Energía |
| 2 | 56 | National Energy Balance 2003 | 2003 | SENER |
| 2 | 57 | Producer Price Index (http://dgcnesyp.inegi.org.mx) | Various years | The National Institute of Statistics and Geography of Mexico (INEGI) |
| 2 | 58 | PERGE programme | | SENER |
| 2 | 59 | Registered project reference 3924 | | UNFCCC |
| 2 | 60 | Registered project 3894 | | UNFCCC |
| 1 | 61 | Stakeholders meetings | October 2010 | PP |
| 1 | 62 | E.I.A | | PP |

# ANNEX 1: CDM VALIDATION PROTOCOL

VALIDATION PROTOCOL

PROJECT: OAXACA IV WIND ENERGY PROJECT

| Validation Type | |
|---|---|
| ☒ Validation of a Project Activity | |
| Validation Team:<br>Jose Luis Fuentes Pérez<br>Marcelino Pellitero Martínez | |
| Version of this Validation Protocol: 02 | Date: 2012-05-11 |

| CHECKLIST TOPIC / QUESTION | MoV/Ref.* | COMMENTS | Draft Conclusion | Final Conclusion |
|---|---|---|---|---|
| ***A. GENERAL DESCRIPTION OF PROJECT ACTIVITY*** | | | | |
| **A.1. Approval** | | | | |
| A.1.1 Have all the Parties involved in the project activity provided a written Letter of Approval of the project activity? | DR<br>I | **Letter of approval by the DNA of Mexico has to be provided.**<br>LoA has been provided by the PP | CAR 1 | CAR 1 is closed |
| A.1.2 Do the Letters of Approval confirm that:<br>• The Party is a Party to the Kyoto Protocol<br>• The participation is voluntary<br>• The CDM project activity contribute to the sustainable development (host Party)<br>• The title of the project activity is precise and coincides with the title included in the PDD? | DR<br>I | To assess when CAR 1 is solved.<br>The LoA confirms all these issues | CAR 1 | CAR 1 is closed |
| A.1.3 Has the Letter of Approval be obtained from the project participants or directly from the DNA? In case that it has been obtained from the project participant, how has been assessed its authenticity? | DR<br>I | To assess when CAR 1 is solved.<br>LoA has been provided by PP and AENOR does not doubt of its authenticity. | CAR 1 | CAR 1 is closed |
| **A.2. Project participants** | | | | |
| A.2.1. Is the form of required for the indication of project participants correctly applied in the PDD? | DR | Yes. The project participant and Party involved are listed | OK | OK |
| A.2.2. Is the participation of all project participants | DR | To assess when CAR 1 is solved. | CAR 1 | CAR 1 is |

| | | | | |
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| approved by a Party to the Kyoto Protocol? | | PP is approved. | | closed |
| A.2.3. Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)? | DR | **Name of organization specified in annex 1 of the PDD does not match with the name in section A.3.**<br>Annex 1 has been corrected. Information is consistent throughout the PDD. | CAR 2 | CAR 2 is closed |
| **A.3. Project Design Document** | | | | |
| A.3.1. Does the used project title clearly enable to identify the unique CDM project activity? Is it consistent in all section of the PDD and in all documents? | DR | The title is clearly identified and it is consistent throughout the PDD. | OK | OK |
| A.3.2. Is there any indication concerning the version number and the date of the version? (*Note: PDDs older than 6 months are not acceptable*) | DR | No, there is not any special indication on this matter. | OK | OK |
| A.3.3. Is this consistent with the time line of the project's history? | DR | Yes. The PDD is consistent with the timeline of the project´s history. | OK | OK |
| A.3.4. Is the PDD prepared in accordance with the latest template and requirements from the CDM Executive Board? | DR | Yes. The PDD is prepared in accordance with the latest template and requirements from CDM. | OK | OK |
| A.3.5. Has the PDD published for Global Stakeholder Consultation (GSC) in UNFCCC website? | DR | Yes. The PDD was published for GSC on October 27 2010 | OK | OK |
| A.3.6. Have there been any comments during the GSC process? | DR | No comments have been received | OK | OK |
| A.3.7. Have them correctly addressed by the validation team? | DR | Not applicable. | OK | OK |

| | | | | |
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| **A.4. Description of the project activity**<br>The PDD *(section A.2)* shall contain a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity. | | | | |
| A.4.1. Is the description delivering a transparent overview of the project activities? | DR | Yes. The description delivers a transparent overview of the project activity | OK | OK |
| A.4.2. What proofs are available demonstrating that the project description is in compliance with the actual situation or planning? | DR | It was assessed during the on-site visit done by the validation team and after desk-review of evidence requested from PP that the project description is consistent with planning. | OK | OK |
| A.4.3. Is the information provided by these proofs consistent with the information provided by the PDD? | DR | Yes. The information provided by the proofs that the audit team reviewed during on site visit and after desk-review is consistent with the information included in the PDD. | OK | OK |
| A.4.4. Has the validation team conducted a physical site inspection to confirm the description of the PDD? If not, justify. | DR | Yes. The on site visit was carried out during 30th NovembeR 2010. | OK | OK |
| **A.5. Technical description of the project activity**<br>The PDD *(section A.4)* shall contain a clear description of the project activity that provides the reader a clear understanding of the technical aspects of its implementation. | | | | |
| *A.5.1. Location of the project activity* | | | | |
| A.5.1.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)? Are the latitude and longitude on the site | DR | The project is located in La Venta Municipality. Oaxaca State. Mexico.<br>**Latitude and longitude of the site shall be indicated in decimal points.** | CAR 3 | CAR 3 is closed |

| | | | | |
|---|---|---|---|---|
| indicated (decimal points)? | | Coordinates have been translated to decimals format. | | |
| A.5.1.2. How is it ensured and/or demonstrated that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)? | DR | According to the PDD version 1, the E.I.A has been approved by the SEMARNAT.<br>**The E.I.A approval has to be provided to the validation team, as well as further information regarding other laws, permits, or authorizations such as:**<br>**- Generation Permit**<br>**- Fulfilment with the Municipality legal framework.**<br>**- Construction permit**<br>Permits, licenses have been provided and they allow a clear identification of the project and demonstrate that project can be implemented. | CL 1 | CL 1 is closed. |
| *A.5.2. Category of the project activity* | | | | |
| A.5.2.1. To which category(ies) does the project activity belonging to? Is this category correctly identified and indicated? | DR | The project activity belongs to sectoral scope 1: Energy industries (renewable sources). | OK | OK |
| A.5.2.2. Does the project qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 3/CMP.1 on the modalities and procedures for the CDM? | DR | No. The project is qualified as a large scale project. | OK | OK |
| B.5.2.3. Does proposed project activity confirm to one of | DR | Not applicable. | OK | OK |

| | | | | |
|---|---|---|---|---|
| the project categories defined for small scale CDM project activities? | | | | |
| A.5.2.4. In the case of a small scale project activity, is it justified that it is not a debundled component of a larger project activity? | DR | Not applicable. | OK | OK |
| *A.5.3. Technology to be employed by the project activity* | | | | |
| A.5.3.1. Does the description of the technology to be applied provide sufficient and transparent input/information to evaluate its impact on the greenhouse gas balance? And, is the explanation how the project will reduce greenhouse gas emission transparent and suitable? | DR | The project activity consists of 68 wind turbines with a total installed capacity of 102 MW.<br>The estimated electricity delivered to the Mexican Grid is 422,076 MWh per year with the average capacity factor of 47,24%.<br>**Data sources and calculations used to estimate those values have to be provided to the validation team, along with technical specifications of turbines to be used in accordance with "Guidelines for the reporting and validation of plant load factors" version 01.**<br>Evidence provided confirm the data used in calculations. | CL 2 | CL2 is closed |
| A.5.3.2. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period? If so, does the project make provisions for meeting training and maintenance needs? | DR | PDD considers training actions during the project period. As well, an operational and management structure has been defined in a CDM Manual. | OK | OK |
| A.5.3.3. Is a schedule available for the implementation of the project and are there any risks for delays? Is the | DR | **The implementation schedule of the project activity shall be provided to the validation team**. | CL 3 | CL3 is closed |

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| schedule consistent with the starting date of the crediting period? | | The schedule confirms the consistency with the starting date of the crediting period. | | |
| A.5.4. Estimated amount of emission reductions over the chosen crediting period | | | | |
| A.5.4.1. Is the form required for the indication of projected emission reductions correctly applied? | DR | Yes. The form used is correct. | OK | OK |
| A.5.4.2. Are the figures provided consistent with other data presented in the PDD? | DR | Yes, the figures are consistent throughout the PDD. | OK | OK |
| A.5.5. Public funding of the project activity | | | | |
| A.5.5.1. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance? | DR | There is not public funding from Annex I Parties. | OK | OK |
| A.5.5.2. Is all information provided consistent with the details given in remaining chapters of the PDD *(in particular annex 2)* | DR | Information in annex 2 is consistent with rest of sections of the PDD. | OK | OK |
| B. BASELINE AND MONITORING METHODOLOGY | | | | |
| B.1. Title and reference of the approved baseline and monitoring methodology | | | | |
| B.1.1. Are reference number, version number, and title of the approved baseline and monitoring methodology | DR | Yes. The project applies approved baseline methodology ACM0002, version 12, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources". | OK | OK |

| | | | | |
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| clearly indicated? | | However, during the validation process the methodology has been updated to version 12.1.0. | | |
| B.1.2. Is the applied version the most recent one and / or is this version still applicable? | DR | Yes. This version is still applicable. | OK | OK |
| B.1.3. Does the PDD refer to the corresponding tools with their latest approved versions? | DR | Yes, the PDD refers to the tools and their versions, all of them applicable. | OK | OK |
| B.2. Applicability of the selected methodology to the project activity | | | | |
| B.2.1. Are the chosen tools considered applicable in accordance with the design of the project and the provisions of the applied methodology? | DR | Yes, tools are considered applicable in accordance with the design of the project and the provisions of the applied methodology | OK | OK |
| B.2.2. Is the choice of the methodology correctly justified by the PDD and is the project in conformance with all applicability criteria of the applied methodology? | DR | The PDD gathers in section B.2 of the PDD the justification of the applicable methodology. | OK | OK |
| Fill in the required amount of sub checklists for applicability criteria as given by the methodology applied and comment at least every line answered with "No" | | | | |

<table>
<tr><td>B.2.3. Criterion 1: “Grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity<br>(greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s)”.</td><td>DR</td><td><table><tr><th>Applicability checklist</th><th>Yes/No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>To assess when CL 1 is solved. Evidence provided confirms the applicability conditions of the methodology.</td><td>CL 1</td><td>CL1 is closed.</td></tr>
<tr><td>B.2.4 Criterion 2: The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;Hydro power plants with a new reservoir and a power density greater than 4W/m2.</td><td>DR</td><td><table><tr><th>Applicability checklist</th><th>Yes/No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Evidence provided?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>To assess when CL 1 is solved. Evidence provided confirms the applicability conditions of the methodology.</td><td>CL 1</td><td>CL1 is closed.</td></tr>
<tr><td colspan="5">B.3. Description of the Project Boundary</td></tr>
<tr><td>B.3.1 Are all the sources and gases included in the project boundary of the project activity (baseline scenario, project scenario and leakage) in accordance</td><td>DR</td><td>Yes, all sources and gases included in the project boundary of the project have been considered in compliance with the applicable methodology.</td><td>OK</td><td>OK</td></tr>
</table>

| | | | | |
|---|---|---|---|---|
| with the applied methodology? | | | | |
| B.3.2. Are the inclusion or exclusion of the sources of gases correctly justified? | DR | The PDD correctly justified in compliance with the methodology the sources of gases applicable to the project. | OK | OK |
| B.3.3. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by the PDD? | DR | **The project boundary defined in section A.2 of the PDD shall be consistent with the applied methodology.**<br>Project boundary has been redefined to be consistent with the methodology. | CAR 4 | CAR4 is closed. |
| B.3.4. In case of grid connected electricity projects, is the relevant grid correctly identified in accordance with EB guidance and the underlying methodology? | DR | The relevant grid is correctly identified. It is the Mexican Grid. | OK | OK |
| B.4. Description of the baseline scenario identification | | | | |
| B.4.1. Is the baseline scenario clearly described? | DR | Yes, the baseline scenario is electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources. | OK | OK |
| B.4.2. Have there been other alternative scenarios considered? Is it justified the selected scenario as the most likely one? | DR | The PDD follows the steps defined in the applicable methodology for determining the baseline. Other than the baseline scenario, the option of setting up project without CDM benefits and other renewable projects with similar outputs have been discussed. The selected baseline scenario seems reasonable and is in compliance | OK | OK |

| | | | | |
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| | | with methodology. | | |
| B.4.3. Does the PDD follow the steps to determine the baseline scenario required by the methodology? | DR | The baseline for the Project is determined following the method given in the approved methodology ACM0002 version 12.1.0 | OK | OK |
| B.4.4. Has the baseline scenario been determined using conservative assumptions where possible? | DR | Baseline scenario has been defined in compliance with applicable methodology. | OK | OK |
| B.4.5. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies? *(Note: refer Annex 3 EB 22)*. | DR | Yes. The baseline scenario sufficiently takes into account relevant national and/or sectoral policies. | OK | OK |
| B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity *(assessment and demonstration of additionality)*: | | | | |
| B.5.1. Is the project additionality assessed according to the applicable methodology? Detail the Tool used to demonstrate the Additionality of the project activity. | DR | The PDD justifies that the project itself is not a likely baseline scenario through the demonstration of its additionality by applying the "Tool for the demonstration and assessment of additionality" version 05.2<br>The additionality analysis of the project is justified by investment analysis.<br>**Further evidence about the chosen financial benchmark, about the appropriateness of the input values used *(*techno-economic parameters and assumptions*)* in the investment analysis shall be provided i.e. tariff, power supply, electricity generation,** | CAR 5 | CAR 5 is closed |

| | | | | |
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| | | **investment costs, O&M costs etc.**<br>**Input values used in all investment analysis should be valid and applicable at the time of the investment decision.PDD shall clearly state the time when investment decision took place.**<br>**Full interlinked spreadsheets of the IRR calculations and sensitivity analysis have to be provided to the validation team.**<br>All evidence requested and the spreadsheet has been provided.<br>**CAR 5 is closed.**<br>Yes, the project additionality has been assessed according to the applicable methodology. | | |
| B.5.2. In the case of a small scale project activity, is the additionality justified according to the applicable CDM requirements specific for small scale project activities? | DR | Not applicable. | OK | OK |
| B.5.3. Is evidence provided that CDM has been considered seriously in the decision to proceed with the project activity (CDM decision before project start) in accordance with CDM requirements? | DR | The starting date defined in the PDD is March 08 2010 taking into account the definition of the CDM glossary terms v.5.<br>CL4.<br>**However, the evidence of the fact considered in that date should be provided to the validation team.**<br>Contract with the CFE has been provided.<br>CAR 6. | CL 4<br>CAR 6 | CL4 and CAR 6 are closed. |

| | | | | |
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| | | **The prior consideration of the CDM has to be demonstrated according to the latest "Guidance on the demonstration and assessment of prior consideration of the CDM" and evidence has to be provided to the validation team.**<br>**The PDD shall include a timetable indicating all the relevant information regarding the development of the project itself and the main events related to the CDM development of the project.**<br>A timetable has been provided and evidence, too. | | |
| B.5.4. Have realistic and credible alternatives were identified providing comparable outputs or services? | DR | To assess when CAR 5 is solved.<br>Realistic and credible alternatives were identified providing comparable outputs or services. | CAR 5 | CAR 5 is closed |
| B.5.5. Is the project activity without CDM included in these alternatives? | DR | Yes, it is included | OK | OK |
| B.5.6. Is a discussion provided for all identified alternatives concerning the compliance with applicable laws and regulations? | DR | Yes, a discussion is provided in the PDD. | OK | OK |
| B.5.7. In case of using a FSR as a basis of the decision, is this analysis made in accordance with the EB Guidance? (NOTE: Paragraph 54 EB 28) | DR | Not applicable. | OK | OK |
| B.5.8. In case the PDD argues that specific laws are not enforced in the country or region: Is evidence available | DR | Not applicable. | OK | OK |

| | | | | |
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| concerning that statement? | | | | |
| B.5.9. In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately? | DR | To assess when CAR 5 is solved.<br>Investment analysis is well detailed in the PD as benchmark analysis | CAR 5 | CAR 5 is closed |
| B.5.10. In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than CDM income? | DR | Not applicable. | OK | OK |
| B.5.11. In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)? | DR | Not applicable. | OK | OK |
| B.5.12. In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)? | DR | To assess when CAR 5 is solved. I<br>Yes the Project IRR post-tax is clearly indicated. | CAR 5 | CAR 5 is closed |
| B.5.13. In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity? | DR | To assess when CAR 5 is solved.<br>Yes, calculation of financial figures is correcly done | CAR 5 | CAR 5 is closed |
| B.5.14. In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly | DR | To assess when CAR 5 is solved.<br>Yes, the Investment analysis is presented in a transparent manner. | CAR 5 | CAR 5 is closed |

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| available proofs for the utilized data? | | | | |
| B.5.15. In case of Option II or Option III: Is the sensitive analysis made taken into account the relevant parameters in accordance with EB guidance? | DR | To assess when CAR 5 is solved.<br>Yes, the sensitivity analysis is correctly performed in the PDD | CAR 5 | CAR 5 is closed |
| B.5.16. In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur? | DR | Not applicable. | OK | OK |
| B.5.17. In case of applying step 3 (barrier analysis) Is transparent and documented evidence provided on the existence and significance of these barriers? | DR | Not applicable. | OK | OK |
| B.5.18. In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers? | DR | Not applicable. | OK | OK |
| B.5.19. Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD (step 4a)? | DR | Yes, there are other similar activities in the host country. | OK | OK |

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| B.5.20. If similar activities are occurring: Is it demonstrated that in spite of these similarities the project activity would not be implemented without the CDM component (step 4b)? | DR | Yes, it is demonstrated. | OK | OK |
| B.5.21. Is it appropriately explained how the approval of the project activity will help to overcome the economic and financial hurdles or other identified barriers? | DR | Yes, it is appropriately explained how the CDM revenues will help to overcome the financial hurdles. | OK | OK |
| B.5.22. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives? | DR | Not applicable. | OK | OK |
| B.5.23. Is sufficient evidence provided to support the relevance of the arguments made? | DR | To assess when CAR 5 is solved.<br>Sufficient evidence has been provided. | CAR 5 | CAR 5 is closed |
| B.5.24. Is it demonstrated/justified that the project activity is not a likely baseline scenario? | DR | To assess when CAR 5 is solved.<br>Yes, the project is not likely to be the baseline scenario | CAR 5 | CAR 5 is closed |
| B.6. Emissions reductions | | | | |
| B.6.1. Explanation of methodological choices | | | | |

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| B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity? | DR | The CO2 emission factor has been calculated according to the methodology ACM0002 ver.12.1.0 and the "tool to calculate the emission factor for an electricity system" version 2.2.1 in the final PDD. The Operational Margin and the Build Margin have been calculated and combined to obtain the Baseline Emission factor.<br>To be clarified / modified and corrected:<br>**Spreadsheet calculation has to be provided to the validation team to reproduce it.**<br>**It shall be clarified in PDD whether imports are used to calculate the BM in compliance with the applicable tool.**<br>Spreadsheet has been provided and calculation reproduced to obtain same results. Moreover, imports have been addressed in the final PDD to calculate the BM, then CAR is closed. | CAR 7 | CAR 7 is closed |
| B.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site? | DR | Options have been correctly justified in the PDD. | OK | OK |
| B.6.1.3. Are the formulae required for the determination of emissions reductions correctly presented and used? *(Open excel, trazability of data, etc)* | DR | To assess when CAR 7 is solved<br>Requested information has been checked by AENOR and it is correctly and appropriate based on inputs, assumptions and evidence provided. | CAR 7 | CAR 7 is closed. |
| B.6.1.4 Are all the data and assumptions listed in the PDD and are appropriate and calculations result in a conservative estimate of emission reductions? | DR | To assess when CAR 7 is solved<br>The formulae required for the determination of emissions reductions are correctly presented and used.<br>Requested information has been checked by AENOR and it is correctly and appropriate based on inputs, assumptions and evidence provided. | CAR 7 | CAR 7 is closed. |
| B.6.1.5. Are the formulae required for the determination | DR | To assess when CAR 7 is solved | CAR 7 | CAR 7 is |

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| of emission reductions correctly presented? | | Requested information has been checked by AENOR and it is correctly and appropriate based on inputs, assumptions and evidence provided. | | closed. |
| *B.6.2. Data and parameters that are available at validation* | | | | |
| B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology? Is all the information required for each parameter included? | DR | Yes, the list of parameters in chapter B.6.2 is complete | OK | OK |
| B.6.2.2. Are all the data derived from official data sources or replicable records and have been correctly quoted? | DR | All data used in calculations are from official data sources and they are correctly quoted. | OK | OK |
| *B.6.3 Calculation of GHG Emission Reductions – Baseline Emissions*<br>*It is assessed whether the baseline emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.* | | | | |
| B.6.3.1 Are the calculations documented according to the approved methodology and in a complete and transparent manner? | DR | To assess when CAR 7 is solved<br>Requested information has been checked by AENOR and it is correctly and appropriate based on inputs, assumptions and evidence provided. | CAR 7 | CAR 7 is closed. |
| B.6.3.2. Have conservative assumptions been used when calculating the baseline emissions? | DR | To assess when CAR 7 is solved<br>Requested information has been checked by AENOR and it is correctly and appropriate based on inputs, assumptions and evidence provided. Conservative assumptions have been used. | CAR 7 | CAR 7 is closed. |
| B.6.3.3 Are uncertainties in the baseline emission | DR | To assess when CAR 7 is solved<br>Requested information has been checked by AENOR and it is | CAR 7 | CAR 7 is closed. |

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| estimates properly addressed? | | correctly and appropriate based on inputs, assumptions and evidence provided. Uncertainties have been addressed. | | |
| B.6.3.4. Is additional background information on baseline data provided in Annex 3 of the PDD? Is this information consistent with data presented by other sections of the PDD? | DR | To assess when CAR 7 is solved<br>Requested information has been checked by AENOR and it is correctly and appropriate based on inputs, assumptions and evidence provided. Information is consistent throughout the PDD. | CAR 7 | CAR 7 is closed. |
| *B.6.4 Calculation of GHG Emission Reductions – Project Emissions*<br>*It is assessed whether the project emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.* | | | | |
| B.6.4.1 Are the calculations documented according to the approved methodology and in a complete and transparent manner? | DR | Not applicable. | OK | OK |
| B.6.4.2. Have conservative assumptions been used when calculating the project emissions? | DR | Not applicable. | OK | OK |
| B.6.4.3 Are uncertainties in the project emission estimates properly addressed? | DR | Not applicable. | OK | OK |
| *B.6.5. Calculation of GHG Emission Reductions – Leakage*<br>*It is assessed whether leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.* | | | | |
| B.6.5.1 Are the leakage calculations documented according to the approved methodology and in a | DR | Not applicable. | OK | OK |

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| complete and transparent manner? | | | | |
| B.6.5.2. Have conservative assumptions been used when calculating the leakage emissions? | DR | Not applicable. | OK | OK |
| B.6.5.3. Are uncertainties in the leakage emission estimates properly addressed? | DR | Not applicable. | OK | OK |
| *B.6.6. Ex-ante calculation of emission reductions* | | | | |
| B.6.6.1. Are the GHG calculations documented in a complete and transparent manner? Are all the calculations correct? | DR | To assess when CAR 7 is solved<br>Requested information has been checked by AENOR and it is correctly and appropriate based on inputs, assumptions and evidence provided. | CAR 7 | CAR 7 is closed. |
| B.6.6.2. Is the data provided in this section consistent with data as presented in other chapters of the PDD? | DR | To assess when CAR 7 is solved<br>Requested information has been checked by AENOR and it is correctly and appropriate based on inputs, assumptions and evidence provided. Information is consistent throughout the PDD | CAR 7 | CAR 7 is closed. |
| *B.6.7. Summary of the ex-ante estimation of emission reductions* | | | | |
| B.6.7.1. Will the project result in fewer GHG emissions than the baseline scenario? | DR | The project will result in fewer GHG emissions than the baseline scenario through the production of clean energy from hydro. | OK | OK |
| B.6.7.2. Are the emissions reductions projected in line with the envisioned time schedule for the project' | DR | To asses when CAR 7 and CL 3 are solved<br>Based on schedule provided the emission reductions estimated are consistent. | CAR 7, CL 3 | CL3 and CAR 7 have been closed. |

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| implementation and the indicated crediting period? | | | | |
| **B.7. Application of the monitoring methodology and description of the monitoring plan** | | | | |
| *B.7.1. Description of the monitoring plan* | | | | |
| B.7.1.1 Is the monitoring plan documented according to the approved methodology and relevant tools and in a complete and transparent manner? | DR | The discussion and selection of the monitoring methodology has been carried out in a transparent manner in the PDD. | OK | OK |
| B.7.1.2. Does the monitoring methodology provide a consistent approach in the context of all parameters to be monitored and further information provided in the PDD? | DR | **In section B.7.1 of the PDD shall consider parameters with same nomenclature that stated in the applicable methodology and tools applied.**<br>Section B.7.1 of the PDD has been updated and is consistent with meth. and tools. | CL 5 | CL5 is closed. |
| B.7.1.3. Does the monitoring plan provide a clear description of the organization structure involved in monitoring activities and their responsibilities? | DR | Section B.7.2 of the PDD defines different responsibilities in the structure of project activity to be followed during monitoring activities.<br>As well, a CDM has been developed to describe with more detail the operation and management of the project. | OK | OK |
| B.7.1.4. If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions? | DR | Annex 4 provides further information to enable a better understanding of monitoring activities. | OK | OK |
| B.7.1.5. Is the registration, monitoring, measurement and | DR | Section B.7.2 of the PDD defines different responsibilities in the | OK | OK |

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| reporting procedure defined? | | structure of project activity to be followed during monitoring activities.<br>As well, a CDM Manual has been developed to describe with more detail the operation and management of the project.<br>All these activities are considered in monitoring of project. | | |
| *B.7.2 Compliance of the monitoring plan with the approved methodology* | | | | |
| B.7.2.1 Is the list of parameters considered to be complete with regard to the requirements of the applied methodology? Are all of them clearly described in the monitoring plan and in accordance with the methodology and tools? | DR | Equipments will be calibrated by CFE periodically<br>**Calibration frequency of meters to be installed shall be clarified and evidence provided.**<br>Further calibration information has been considered in the final PDD. | CL 6 | CL6 is closed |
| B.7.2.2. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period? | DR | To assess when CL 5 is solved.<br>The PP has developed a CDM Manual, provided to the validation team, which describes quality control and quality assurance. | CL 5 | CL 5 is closed. |
| *B.7.3 Implementation of the Monitoring Plan* | | | | |
| B.7.3.1 Do the means of monitoring of each of the parameters included in the plan complies with the requirements of the methodology? | DR | Means of monitoring described in the PDD are in compliance with the applicable methodology. | OK | OK |

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| B.7.3.2. Is the measurement equipment described and deemed appropriate? | DR | To assess when CL 6 is solved.<br>Information on this issue is addressed in the PDD and it is consistent and appropriate. | CL 6 | CL6 is closed. |
| B.7.3.3. Are procedures identified for maintenance of monitoring equipment and installations? Are provisions regarding the calibration intervals included in the monitoring plan? | DR | To assess when CL 6 is solved.<br>Information on this issue is addressed in the PDD and it is consistent and appropriate. | CL 6 | CL6 is closed. |
| B.7.3.4. Is the measurement accuracy addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements or lack of data? | DR | The measurement precision of the meters employed by the projects will be at least +- 0.2% of full scale rating. | OK | OK |
| B.7.3.5. Is the monitoring Plan sufficient to ensure the verification of a proper implementation of the monitoring plan? | DR | Monitoring Plan sufficiently ensures the verification of a proper implementation of the monitoring plan | OK | OK |
| **B.8. Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)** | | | | |
| B.8.1. Is there any indication of a date when the baseline and monitoring was determined? | DR | Yes. Final PDD states 1/10/2011. | OK | OK |
| B.8.2. Is this consistent with the time line of the PDD history? | DR | Yes, it is consistent. | OK | OK |
| B.8.3. Is the information on the person(s)/entity(ies) | DR | Yes, all the information is included and consistent with actual | OK | OK |

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| responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation? | | situation | | |
| B.8.4. Is information provided whether this person / entity is also considered a project participant? *(Guidelines for Completing the Project Design Document (CDM-PDD) and the Proposed New Baseline and Monitoring Methodologies (CDM-NM)* | DR | **Information about the person/entity is also considered a project participant shall be included in the PDD.**<br>This issue has been corrected in the final PDD. | CAR 8 | CAR 8 is closed. |
| ***C. DURATION OF THE PROJECT ACTIVITY / CREDITING PERIOD*** | | | | |
| **C.1. Duration of the project activity** | | | | |
| C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable? | DR | To assess when CL 4 is solved.<br>**The PDD gathers in section A.4.3 that "minimum expected operational lifetime of the project is 20 years" meanwhile in section C.1.2 states ""expected operational lifetime". With regard to this, lifetime shall be clearly and consistently defined in the PDD**.<br>Final PDD states in a clear and unequivocal way the operational lifetime of the project. Moreover, evidence has been provided. | CL 4, CL 7 | Cl4 and CL7 are closed. |
| **C.2. Choice of the crediting period and related information** | | | | |
| C.2.1. Is the assumed crediting period clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)? And, is the starting date of the | DR | To assess when CL3 is closed.<br>A fixed crediting period of 10 years is defined, starting on 16 May 2012 or effective date of registration whichever is later. This date is consistent with CDM requirements. | CL 3 | CL 3 is closed. |

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| crediting period corrected considered? | | | | |
| ***D. ENVIRONMENTAL IMPACTS*** | | | | |
| **D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts** | | | | |
| D.1.1. Has the analysis of the environmental impacts of the project activity been sufficiently described in the PDD? | DR | The main negative impacts of the projects considered in the EIA have been included in the PDD.<br>**Further information shall be provided in the PDD regarding measures to diminish the main negative impacts. As well, E.I.A shall be provided to the validation team.**<br>Further information has been included in the final PDD on environmental issues. | CL 8 | CL8 is closed. |
| D.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved? | DR | To assess when CL 1 is solved.<br>An E.I.A has been done and its approval has been provided. | CL 1 | CL 1 is closed. |
| D.1.3. Will the project create any adverse environmental effects? Has any environmental impact identified as significant? | DR | To assess when CL 8 is solved<br>No significant impacts have been addressed; however, main environmental impacts were diminished by a mitigation plan. | CL 8 | CL8 is closed. |
| D.1.4. Are transboundary environmental impacts identified in the analysis? | DR | No transboundary impacts have been identified. | OK | OK |

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| **D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party.** | | | | |
| D.2.1. Have the identified environmental impacts been addressed in the PDD sufficiently? | DR | Yes, impacts have been identified in the PDD. | OK | OK |
| D.2.2. Does the project comply with any other environmental legislation in the host country? | DR | The project activity fulfils with the environmental legislation in Mexico. | OK | OK |
| ***E. STAKEHOLDERS' COMMENTS*** | | | | |
| **E.1. Brief description how comments by local stakeholders have been invited and compiled** | | | | |
| E.1.1. Have relevant stakeholders been consulted? Is the exact date of the consultation process included in the PDD | DR<br>I | According to the PDD, meetings were held with the main local stakeholders in October 20 to 22 2010, as the validation team could confirm during the on site visit. National stakeholders were interviewed on October 11 2010. | OK | OK |
| E.1.2. Have appropriate media been used to invite comments by local stakeholders? | DR,<br>I | In order to know the comments of stakeholders' visits to the project site were carried out and interviewed held with Local government and community as confirmed during on site visit.<br>**However, minutes of the meetings and other support documentation shall be provided to the validation team.**<br>Evidence has been provided and confirms that appropriate media such as interviews and meetings have been used for the stakeholder process. | CL 9 | CL9 is closed. |

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| E.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws? | DR | The process has been carried out according to the laws in the host country. | OK | OK |
| E.1.4. Is the undertaken stakeholder process that was carried out described in a complete and transparent manner? | DR | The process is described in a clear and transparent manner. | OK | OK |
| **E.2. Summary of the comments received** | | | | |
| E.2.1. Is a summary of the stakeholder comments received provided? | DR | A summary of the stakeholders´ comments is included in section E.2 of the PDD. | OK | OK |
| **E.3. Report on how due account was taken of any comments received** | | | | |
| E.3.1. Has due account been taken of any stakeholder comments received? | DR | The PDD states in the point E.3 how the stakeholders' comments received have been taken into account. | OK | OK |

*MoV/Ref: Means of Validation and references of background documents. DR: Desk review, I: Interview