



**CLEAN DEVELOPMENT MECHANISM
PROGRAM ACTIVITY DESIGN DOCUMENT FORM (CDM-CPA-DD)
Version 01**

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NOTE:

- (i) This form is for the submission of CPAs that apply a large scale methodology using provisions of the proposed PoA.
- (ii) The coordinating/managing entity shall prepare a CDM Programme Activity Design Document (CDM-CPA-DD)^{1,2} that is specified to the proposed PoA by using the provisions stated in the PoA DD. At the time of requesting registration the PoA DD must be accompanied by a CDM-CPA-DD form that has been specified for the proposed PoA, as well as by one completed CDM-CPA-DD (using a real case). After the first CPA, every CPA that is added over time to the PoA must submit a completed CDM-CPA-DD.

¹ The latest version of the template form CDM-CPA-DD is available on the UNFCCC CDM web site in the reference/document section.

² At the time of requesting validation/registration, the coordinating managing entity is required to submit a completed CDM-POA-DD, the PoA specific CDM-CPA-DD, as well as one of such CDM-CPA-DD completed (using a real case).

**SECTION A. General description of CDM programme activity (CPA)****A.1. Title of the CPA:**

CPA title: [name] Wind Power Plant – Tepeu PoA CPA #[number]

Version [number] : date [day/month/year]

A.2. Description of the CPA:

The proposed CDM Programme Activity (CPA) “CPA title” is a Detail project condition with an (additional) installed capacity of installed capacity CPA connected to the national [national] electricity grid. *(Include any other important technical information of the project e.g. type of turbine, generation, technology, IEC classification, transmission line, among other).*

The Project aims to generate renewable electricity by using the wind resources of the [project location] and supply all the electricity produced to the [grid system]. The reduction of baseline emissions results from the displacement of electricity generated by power plants within the [grid system], which include mainly fossil/fuel power plants emitting CO₂.

The project will be set over an area of [value] Ha in the municipality [project location] and is expected to reduce [value] tCO₂ every 12 months, leading to [value] tCO₂ over the first crediting period (7 years). The GHG emissions of the proposed Project activity are zero as the emissions related to leakage.

The Project will have an expected minimum operating lifetime of [value] years. The proposed Project activity will have all the applicable permissions and authorizations required for its construction and operation, and will also comply with all the environmental requirements mandated by [national energy institution or other ruling the system].

A.3. Entity/individual responsible for CPA:

[CPA entity name and responsible contact information]

A.4. Technical description of the CPA:**A.4.1. Identification of the CPA:**

CPA title: [CPA name – Tepeu PoA CPA # x]

A.4.1.1. Host Party:

[country]


A.4.1.2. Geographic reference of other means of identification allowing the unique identification of the CPA (maximum one page):

The location of the project is [project specific location].

The project's unique identification coordinates are the ones related to [detail if it is polygonal, turbine location or other reference points]. The CPA coordinates are listed in the following table:

Table 1: Project coordinates for the [detail if it is polygonal, turbine location or other reference points] of the project area

Vertex	Location (Coordinates North-UTM)	Location (Coordinates East-UTM)
1	[coordinate]	[coordinate]
2	[coordinate]	[coordinate]
3	[coordinate]	[coordinate]
4	[coordinate]	[coordinate]
5	[coordinate]	[coordinate]
6	[coordinate]	[coordinate]

Note: consider coordinates in decimal format

The CPA location is also detailed in Figures 1 and 2.

Figure 1: Project location. Level: Regional and Department.

[Country map with CPA location]

Figure 2: Project Specific Location.

[Regional or local map with CPA location]

A.4.2. Duration of the CPA:
A.4.2.1. Starting date of the CPA:

[xx/xx/xxxx]

The starting date of the CPA corresponds to the date of [indicate first implementation action].

A.4.2.2. Expected operational lifetime of the CPA:

[Xx] years

**A.4.3. Choice of the crediting period and related information:****Renewable crediting period: Or****A.4.3.1. Starting date of the crediting period:**

Later of [dd/mm/yyyy], or commissioning date.

A.4.3.2. Length of the crediting period, first crediting period if the choice is renewable CP:

7 years

A.4.4. Estimated amount of emission reductions over the chosen crediting period:

In accordance with the applicable methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” version 12.3.0., the implementation of the project in the [system] will reduce [value] t CO₂e/year. This leads to a reduction of [value] t CO₂e over the first 7-year crediting period.

Annual estimation of emission reductions

Years	Estimation of annual emission reductions in t CO ₂ e
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
Total Estimated Reductions (t CO₂e)	[value]
Total number of crediting years	7
Annual average of estimated reductions over the crediting period (t CO₂e)	[value]

A.4.5. Public funding of the CPA:

The CPA does not receive or will receive any public funding. Therefore there is not diversion of official development assistances.



A.4.6. Confirmation that CPA is neither registered as an individual CDM project activity nor is part of another Registered PoA:

The CME of the PoA has checked and confirms that the CPA [project name] is not registered as an individual CDM project activity nor is it a part of another registered PoA.

**SECTION B. Eligibility of CPA and Estimation of emissions reductions****B.1. Title and reference of the Registered PoA to which CPA is added:**

Tepeu Wind Programme of Activities

Version of PoA-DD: [number]

Date [day/month/year]

B.2. Justification of the why the CPA is eligible to be included in the Registered PoA :

The proposed CPA fulfils all the eligibility criteria set in the PoA as described in the following table.

Fulfilment of CPA eligibility criteria

Criteria	Analysis
1. The project activity could be implemented under this program if: <ul style="list-style-type: none"> a. It will be a new wind power plant that could be on-shore or off-shore; or b. Will be a capacity addition over an existing wind power plant, to increase in the installed power generation capacity by means of: (i) the installation of a new power plant/unit besides the existing power plant/units, or (ii) the installation of new power units, additional to the existing power plant/units. The existing power plant/units continue to operate after the implementation of the project activity; or c. Will be a retrofit (or Rehabilitation or Refurbishment) over an existing wind power plant that involves an investment to repair or modify an existing power plant/unit, with the purpose to increase the efficiency, performance or power generation capacity of the plant, without adding new power plants or units, or to resume the operation of closed power plants. Retrofits shall only include measures that involve capital investments and not regular maintenance or housekeeping measures to increase the power generation capacity; or d. Will be a replacement of one or several existing unit(s) at an existing power plant that involves investment to increase in the installed power generation capacity; or 	[response]
2. The project activity will be a wind power plant/unit located in one of the PoA's host country or in a host country added to the PoA after registration but a CPA will not consider multi country projects (i.e. a CPA cannot	[response]



consider a project located both in Peru and Nicaragua)	
3. The project activity requires no energy generating equipment to be transferred from another activity located in a non-annex I party, and no existing equipment is transferred from the project to another activity.	[response]
4. During the operation phase, the power plant will be connected to the national grid system.	[response]
5. The CPA under the PoA is neither registered as an individual CDM project activity nor included as a CPA in another registered CDM PoA. The CPA proponent shall sign a formal document stating that the project is not or will not participate in other carbon market mechanism.	[response]
6. To avoid double counting of emission reductions, each CPA-DD shall be uniquely identified and defined in an unambiguous manner by providing geographic information (including coordinates). With this information the CME can analyze if the project is deemed to be registered either as an independent CDM project activity or as a CPA of another PoA by checking the UNFCCC official website in ongoing validation processes for independent CDM projects and validation and registration sectors for PoAs.	[response]
7. The project activity shall not have a start date (as defined by the UNFCCC) before the Global Stakeholder Process (GSP) of the PoA on December 28th, 2011. Since the start date can be defined by different project milestone, the CPA developer shall provide formal documentary evidence when the start date has already occurred to the CME for its evaluation (e.g. contracts for supplying wind turbines, contract for civil works, payments set in PPAs, contracts with the entity financing the project, among others according to the project characteristics and party involved) or clearly state that the start date has not taken place at the moment of the CPA inclusion by signing a sworn declaration	[response]
8. The project activity must fulfill the methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” version 12.3.0 as listed in section E.2 of the PoA – DD. In addition the baseline scenario shall comply with the list of plausible alternatives (based on the ACM0002 version 12.3.0), listed in section E.4 of the PoA – DD.	[response]
9. The CPA shall be able to demonstrate additionality as listed in section E.5 of the PoA – DD. This sections request the application of the “Tool for the	[response]



<p><i>demonstration and assessment of additionality” version 06.0.0 and the “Combined tool to identify the baseline scenario and demonstrate additionality” version 4.0.0 in the alternative identification of the retrofit or replacement projects. In the case of off-shore projects up to 15 MW, the PoA –DD refers to the “Guidelines on the Demonstration of Additionality of Small-Scale Project activities (Version 09.0)” and for the demonstration that the CPA up to 15 MW is not part of a larger project the CME will implement a debundling analysis with results set in a formal report</i></p>	
<p>10. The CPA proponent shall accommodate a local stakeholder consultation process before its inclusion in the PoA, as stated in Section D of the PoA – DD. The CPA proponent shall develop the consultation process following the DNA procedures if existent, or develop general and specific invitation to the stakeholders in the surrounding geographical areas; give at least one week between the invitations and the process, have a list of participants and have a minute of the meeting where the comments or agreements are described.</p>	[response]
<p>11. The CPA proponent shall describe the environmental impact analysis as per the Environmental Impact Assessment, Environmental Evaluation or environmental description as stated in section C of the PoA – DD. In order to be included in the PoA, the CPA developer shall have the Environmental Impact Assessment (EIA) or the Environmental Impact Declaration (DIA) approved, if applicable.</p>	[response]
<p>12. The CPA proponent will sign a formal document affirming that funding from Annex I parties, if any, does not result in a diversion of official development assistance.</p>	[response]
<p>13. The CPAs can have the most suitable technology for the project implementation, but shall at least have 3 blade turbines complying with IEC 61400 or equivalent/better standards and with a lifetime of at least 20 years. The project will have SCADA system (or equivalent/better system) for data management. The project developer shall evidence the type of equipment’s to be implemented by submitting proposals, technical reports of the project or the acquisition contract if existent.</p>	[response]
<p>14. The CPA has to be a voluntary initiative by the CPA operator and not implemented as a result of ant mandatory policy or regulation. The CME will review</p>	[response]



the regulatory framework and CPA developer will sign a sworn declaration declaring its voluntary implementation and participation in the PoA.	
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B.3. Assessment and demonstration of additionality of the CPA, as per eligibility criteria listed in the Registered PoA:

(For no off-shore projects up to 15 MW follow the next guidance:)

As stated in the PoA-DD the additionality will be demonstrated using the “*Tool for the demonstration and assessment of additionality*” (version 06.0.0).

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a: Define alternatives to the project activity

(According to methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” (version 12.3.0), in cases where the project activity is the installation of a new grid-connected renewable power plant/unit or a capacity addition, the baseline scenario is defined by the methodology and then only in the case of retrofits or replacement projects credible alternatives shall be listed.)

For new projects or capacity additions: Since the selected methodology prescribes the baseline scenario the identification of credible and realistic alternatives is not required

Or

For retrofits or replacement projects: The credible alternatives are:

- P1: The project activity not implemented as a CDM project;
- P2: The continuation of the current situation, i.e. to use all power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance. The additional power generated under the project would be generated in existing and new grid-connected power plants in the electricity system; and
- P3: **[Alternative]** *(All other plausible and credible alternatives to the project activity that provide an increase in the power generated at the site, which are technically feasible to implement. This includes, inter alia, different levels of replacement and/or retrofit at the power plant/unit(s). Only alternatives available to project participants should be taken into account.)*

Analyse every alternative and according to the “Combined tool to identify the baseline scenario and demonstrate additionality” define the baseline scenario.



Option P2 is the baseline scenario and then can be included in the present PoA.

Sub-step 1b: Consistency with mandatory laws and regulations

The scenario identified above is in compliance with all applicable legal and regulatory requirements.

Step 2: Investment analysis

(For of off-shore projects up to 15 MW the CPA developers shall describe this condition in order to dismiss this step)

Sub-step 2a: Determine appropriate analysis method

(Describe the applicable text in the selected host country according to description in the PoA -DD).

Sub-step 2b: Option III. Apply benchmark analysis

According to the PoA-DD of the Tepeu PoA, the benchmark IRR for [country] is: [value].

Sub-step 2c: Calculation and comparison of financial indicators:

The main parameters of the IRR analysis are based on conservative assumptions available to the Project developer at the time of the investment decision, and are shown below:

Main parameters for the calculation of financial indicators

Parameters	Unit	Value	Data Source
Electricity Price	USD per kWh	[value]	[source]
Generation Capacity	MW	[value]	[source]
Load Factor	%	[value]	[source]
Transmission Losses	%	[value]	[source]



Other Losses	%	[value]	[source]
Energy Generation	MWh/year	[value]	[source]
Initial Investment: Civil Works	USD Mio.	[value]	[source]
Initial Investment: Machinery & Equipment	USD Mio.	[value]	[source]
Initial Investment: Pre-Investment Costs	USD Mio.	[value]	[source]
Operation & Minor Maintenance Costs	USD Mio. per year	[value]	[source]
Generator Maintenance	USD Mio. per year	[value]	[source]
Insurance Costs	% of 70% of the investment in M&E	[value]	[source]
Administrative Expenses	USD Mio. per year	[value]	[source]
Land Rent	% of income per year	[value]	[source]
Regulation INE	USD per MW per year	[value]	[source]
Municipal Registry	% of sales per year	[value]	[source]
Toll	USD per MWh	[value]	[source]
Spinning Reserve	% per year	[value]	[source]
Depreciation – Civil Works	% per year	[value]	[source]
Depreciation – Machinery & Equipment	% per year	[value]	[source]
Income Tax	% per year	[value]	[source]
Municipal Tax	% per year	[value]	[source]
CER Price	EUR	[value]	[source]
Emission Factor	tCO ₂ e /MWh	[value]	[source]



Technical Lifetime of Project	Years	[value]	[source]
<i>(add or remove rows to represent the project and country conditions in the best way)</i>	[unit]	[value]	[source]

A comparison of the IRR for the proposed Project activity and the financial benchmark IRR ([value]), with and without CDM revenues, is shown below. Without CDM revenues, the IRR of the total Project investment is [value] which is below the benchmark level. The proposed Project can be considered as financially unattractive to investors.

With the CDM revenue the IRR of the total investment would increase to [value]. The attractiveness of the Project activity to the new investor is improved with CDM revenue, as the Project has been made attractive from the combination of the return it brings out of its income from its operation and from the sale of emission reduction credits. Hence, the economic evaluation demonstrates the importance of CDM benefits to achieve more profitable margins that help to overcome the barriers presented in this document.

Comparison of financial indicator with and without CER revenue

Item	Unit	Without CER revenue	Benchmark	With CER revenue
IRR	%	[value]	[value]	[value]

Sub-step 2d: Sensitivity analysis

For the proposed Project activity, the following financial parameters were taken as uncertainty factors for the sensitivity analysis as they constitute around or more than 20% of the Project revenues and expenses:

[list of the parameters in the sensitivity analysis]

Table below shows the variation magnitude that each one of the above parameters would need in order for the project IRR to reach the benchmark level.

Sensitivity Analysis of Project IRR

Turning point condition to reach the benchmark			
[parameter name]	[parameter name]	[parameter name]	[parameter name]
[value]	[value]	[value]	[value]



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The probability of such large variations in any of these parameters is considered highly improbable in practical terms, and surpass the 10% variation recommended by the "*Guidelines on the assessment of investment analysis*".

Therefore, it can be concluded that the Project alone (the proposed Project activity undertaken without CDM revenues) is not sufficiently attractive for private investors; therefore this scenario is not considered the most probable baseline scenario.

(For off-shore projects up to 15 MW follow the next guidance:)

The proposed CPA is an off-shore projects of [value] MW of installed capacity. Following the PoA-DD guidelines the step 2 of the "*Tool for the demonstration and assessment of additionality*" is dismissed in the additionality assessment.

Step 3: Barrier analysis

(The CPA developer shall indicate if this step does not apply to the project or if it is used to demonstrate additionality for the off-shore projects up to 15 MW as per described in the PoA-DD. Follow the next template in case of off-shore projects).

The proposed CPA is an off-shore projects of [value] MW as per the following supporting documentation:

- [reference document list]

According to the "*Information on additionality (Attachment A to Appendix B of 4/CMP.I Annex II)*" the project is part of a list of technologies that are automatically defined as additional:

2. *The positive list of grid-connected renewable electricity generation technologies that are automatically defined as additional, without further documentation of barriers, consists of the following grid-connected renewable electricity generation technologies of installed capacity up to 15 MW:*

- (a) Solar technologies (photovoltaic and solar thermal electricity generation);*
- (b) Off-shore wind technologies;*
- (c) Marine technologies (wave, tidal).*

Therefore the project is deemed additional and no further analysis is required in this Step 3.

Step 4. Common Practice Analysis

Step 1: Calculate applicable output range as +/-50% of the design output or capacity of the proposed project activity.



The CPA has been analyzed based on [design output or installed capacity], then the range will be between [value] and [value].

Step 2: In the applicable geographical area, identify all plants that deliver the same output or capacity, within the applicable output range calculated in Step 1, as the proposed project activity and have started commercial operation before the start date of the project. Note their number N_{all} .

The applicable geographical is the one covered by the [system], and considers only the projects that have started commercial operation before the start date of the project and are connected to the grid. Information used in the present analysis has been given by online documents of by the [source]

Registered CDM project activities and projects activities undergoing validation are not included in the evaluation.

The following table details the operative power plants in the [system], their type, installed capacity and CDM condition. The ones in bold blue are in the range determine in Step1.

POWER PLANT	Technology	Installed capacity (MW)	CDM condition
[name]	[type]	[number]	[ref. number]
[name]	[type]	[number]	[ref. number]
[name]	[type]	[number]	[ref. number]
[name]	[type]	[number]	[ref. number]
[name]	[type]	[number]	[ref. number]
[name]	[type]	[number]	[ref. number]
[name]	[type]	[number]	[ref. number]
[name]	[type]	[number]	[ref. number]

As per the previous table, N_{all} is [number].

Step 3: Within plants identified in Step 2, identify those that apply technologies different that the technology applied in the proposed project activity. Note their number N_{diff} .

Considering that [number] of all the [number] projects identified in Step 2 apply a different technology: are thermal power plants or other renewable energy power plant not using wind resources (geothermal), then N_{diff} is [number].

Step 4: Calculate factor $F=1-N_{diff}/N_{all}$ representing the share of plants using technology similar to the technology used in the proposed project activity in all plants that deliver the same output or capacity as the proposed project activity.

The result of the applicable two formulas is:

$$a) F = 1 - N_{diff} / N_{all} = [number]$$



$$b) N_{all} - N_{diff} = [\text{number}]$$

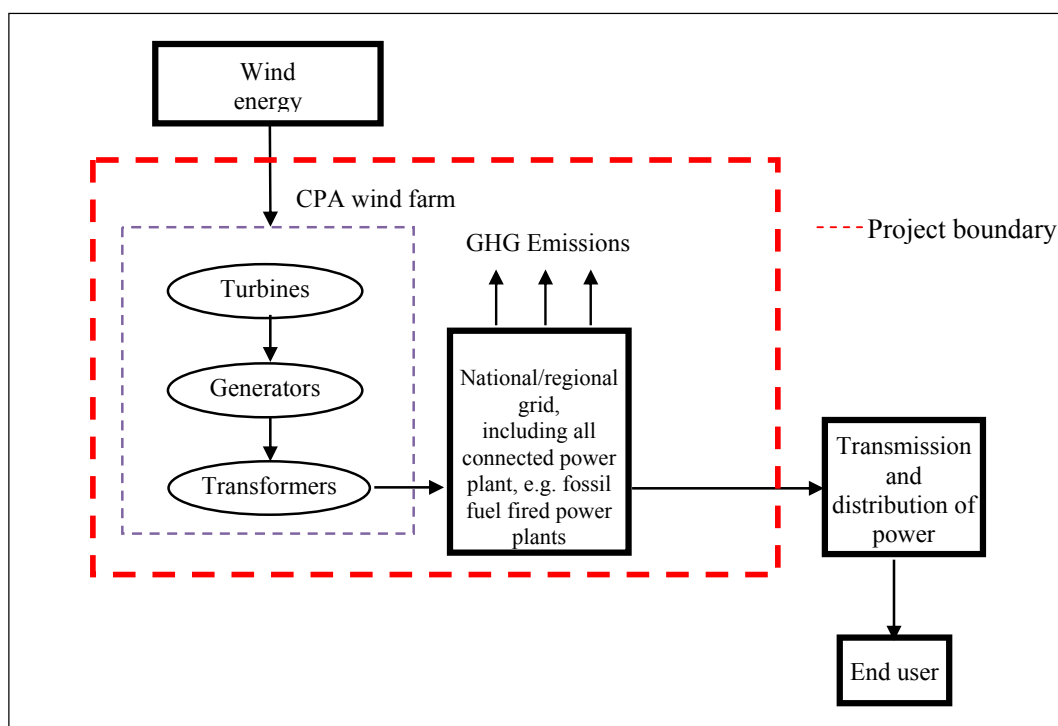
The conditions that a) > 0.2 and b) is $>$ than 3 are not met by the project activity and then the CPA is not considered a common practice and is additional. The CPA can be included in the PoA.

B.4. Description of the sources and gases included in the project boundary and proof that the CPA is located within the geographical boundary of the registered PoA.

According to ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” (version 12.3.0.), the spatial extent of the project boundary includes the project activity and all power plants connected physically to the national/regional grid to which the proposed projects (CPAs) are also connected. Since the project is connected to the national grid, this will be included in the project boundary.

The flow diagram of the of a typical CPA boundary is shown in the following figure:

Flow diagram of a typical CPA boundary



The GHGs and emission sources included in the project boundary are shown in the following table.



Sources and gases included in or excluded from the project boundary

Source		Gas	Included?	Justification / Explanation
Baseline	CO ₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO ₂	Yes	Main emission source
		CH ₄	No	Minor emission source
		N ₂ O	No	Minor emission source
Project activity	Wind energy project	CO ₂	No	Minor emission source. As a zero emission grid connected wind power project no emissions will result.
		CH ₄	No	As a zero emission grid connected wind power project no emissions will result.
		N ₂ O	No	As a zero emission grid connected wind power project no emissions will result.

B.5. Emission reductions:**B.5.1. Data and parameters that are available at validation:**

(select the parameters applicable to the CPA)

Data / Parameter:	$EF_{grid,CM,y}$
Data unit:	tCO ₂ /MWh
Description:	Emission factor for the National Interconnected System. - Nicaragua.
Source of data to be used:	Calculated from $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$ as per the “Tool to calculate the emission factor for an electricity system” (version 02.2.1).
Value applied:	[value]
Justification of the choice of data or description of measurement methods and procedures actually applied :	The baseline emission factor ($EF_{grid,CM,y}$) is calculated as a combined margin (CM), consisting of the combination of operating margin ($EF_{grid,OM,y}$) and build margin ($EF_{grid,BM,y}$) factors according to the applicable methodology.
Any comment:	The PoA CPAs will use the $EF_{grid,CM,y}$ calculated by the coordinating/managing entity with the most recent values. The value will be updated by the CME using official information when the information is available. CPAs will use the most available grid emission factor as an ex ante value. Complete information of every year during the crediting period will be available for the CME during the first six months of the following year.



	The emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emissions factor during the crediting period is required. Use a 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-CPA to the DOE for validation/inclusion. Data from [value], [value] and [value] is used.
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Data / Parameter:	$EF_{grid,BM,y}$
Data unit:	tCO ₂ /MWh
Description:	The build margin emissions factor- Nicaragua.
Source of data to be used:	Official data publicly available in National Electricity Institution (INE) or National Dispatch Center (CNDC) web sites or directly sent to the coordinating/managing entity.
Value applied:	[value]
Justification of the choice of data or description of measurement methods and procedures actually applied :	This value is determined ex-ante using the “ <i>Tool to calculate the emission factor for an electricity system</i> ” (version 02.2.1) and applying to the CM a weight of 0.25 for the first crediting period.
Any comment:	-

Data / Parameter:	$EF_{grid,OMsimple,y}$
Data unit:	tCO ₂ /MWh
Description:	Simple operating margin CO ₂ emission factor in period y. - Nicaragua.
Source of data to be used:	Official data publicly available in National Electricity Institution (INE) or National Dispatch Center (CNDC) web sites or directly sent to the coordinating/managing entity.
Value applied:	[value]
Justification of the choice of data or description of measurement methods and procedures actually applied :	This value is determined ex-ante using the “ <i>Tool to calculate the emission factor for an electricity system</i> ” (version 02.2.1) and applying to the CM a weight of 0.75 for the first crediting period.
Any comment:	-

Data / Parameter:	$NCV_{i,y}$
Data unit:	TJ/Gg
Description:	Net calorific value (energy content) per mass unit of fuel <i>i</i> in year <i>y</i> .
Source of data used:	IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories.
Value applied:	- [value] - [value]



Justification of the choice of data or description of measurement methods and procedures actually applied :	There is no information in supplier invoices, national official entities or individual power plant owners. IPCC values are accepted by the methodology.
Any comment:	If available, values provided by the fuel supplier of the power plants in invoices (if data is collected from power plant operators) or regional or national average default values are preferable sources in the calculation.

Data / Parameter:	$EF_{CO_2,i,y}$
Data unit:	KCO ₂ /TJ
Description:	CO ₂ emission factor of fossil fuel <i>i</i> in year <i>y</i> .
Source of data used:	IPCC default values at the lower limit if the uncertainty at a 95% confidence interval as provided in Table 1.4 of Chapter 1 of Vol.2 (Energy) of the 2006 IPCC Guidelines on National Greenhouse Gas Inventories.
Value applied:	- [value] - [value]
Justification of the choice of data or description of measurement methods and procedures actually applied :	No other data is publicly available. IPCC guidelines have been used in a conservative manner.
Any comment:	If available, values provided by the fuel supplier of the power plants in invoices (if data is collected from power plant operators) or regional or national average default values are preferable sources in the calculation.

Data / Parameter:	$FC_{i,m,y}$
Data unit:	Thousand gallons
Description:	Amount of fossil fuel <i>i</i> consumed by each power plant/unit <i>m</i> in period <i>y</i> .
Source of data used:	INE - Instituto Nicaragüense de Electricidad (Nicaraguan Electricity Institute) or or National Dispatch Center (CNDC) web sites or directly sent to the coordinating/managing entity. Specific data source will be identified for each host country.
Value applied:	Data for the [period/year]. Data used is presented in the spreadsheet for Grid Emission Factor calculation.
Justification of the choice of data or description of measurement methods and procedures actually applied :	Data is obtained from official, publicly available sources.
Any comment:	-

Data / Parameter:	$EG_{m,y}$
Data unit:	MWh



Description:	Net electricity generated and delivered to the grid by power plant/unit m in period y . - Nicaragua.
Source of data used:	INE - Instituto Nicaragüense de Electricidad (Nicaraguan Electricity Institute) or National Dispatch Center (CNDC) web sites or directly sent to the coordinating/managing entity or other utility or government records (official publications). Specific data source will be identified at each host country.
Value applied:	Data for the [period/year]. Data used is presented in the spreadsheet for Grid Emission Factor calculation.
Justification of the choice of data or description of measurement methods and procedures actually applied :	Data is obtained from official, publicly available sources.
Any comment:	-

Data / Parameter:	w_{OM}
Data unit:	(%)
Description:	Weight of operating margin emissions factor - Nicaragua.
Source of data to be used:	As indicated in the “ <i>Tool to calculate the emission factor for an electricity system</i> ” (version 02.2.1).
Value applied:	The first crediting period, $w_{OM} = 0.75$ The second and third crediting period, $w_{OM} = 0.75$
Justification of the choice of data or description of measurement methods and procedures actually applied :	---
Any comment:	For projects of solar or wind power generation. This weight is set fixed in the tool for all the crediting periods in a CPA.

Data / Parameter:	w_{BM}
Data unit:	(%)
Description:	Weight of build margin emissions factor - Nicaragua.
Source of data to be used:	As indicated in the “ <i>Tool to calculate the emission factor for an electricity system</i> ” (version 02.2.1).
Value applied:	The first crediting period, $w_{BM} = 0.25$ The second and third crediting period, $w_{BM} = 0.25$
Justification of the choice of data or description of measurement methods	---



and procedures actually applied :	
Any comment:	For projects of solar or wind power generation. This weight is set fixed in the tool for all the crediting periods in a CPA.

Data / Parameter:	$EG_{\text{historical}}$
Data unit:	MWh
Description:	Annual average historical net electricity generation by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity
Source of data used:	Information from the project proponent or local authorities.
Value applied:	[value]
Justification of the choice of data or description of measurement methods and procedures actually applied :	Data from electricity meters of the project proponent and official information is reliable and can be crosschecked.
Any comment:	-

Data / Parameter:	$\sigma_{\text{historical}}$
Data unit:	MWh
Description:	Standard deviation of the annual average historical net electricity supplied to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity.
Source of data used:	Based on project proponent or local authorities information
Value applied:	[value]
Justification of the choice of data or description of measurement methods and procedures actually applied :	Data from electricity meters of the project proponent and official information is reliable and can be crosschecked.
Any comment:	-

Data / Parameter:	$DATE_{\text{BaselineRetrofit}}$
Data unit:	Date
Description:	Point in time when the existing equipment would need to be replaced in the absence of the project activity
Source of data used:	Project activity site based in two approaches: <ul style="list-style-type: none"> (a) The typical average technical lifetime of the type equipment may be determined and documented, taking into account common practices in the sector and country, e.g. based on industry surveys, statistics, technical literature, etc.; (b) The common practices of the responsible company regarding replacement/retrofitting schedules may be evaluated and documented,



	e.g. based on historical replacement/retrofitting records for similar equipment.
Value applied:	[value]
Justification of the choice of data or description of measurement methods and procedures actually applied :	Evidenced documents or references will be used in order to determine a real and conservative date for future replacement of equipments,
Any comment:	-

Data / Parameter:	DATE _{hist}
Data unit:	Date
Description:	Point in time from which the time span of historical data for retrofit or replacement project activities may start.
Source of data used:	Project activity site information
Value applied:	[value]
Justification of the choice of data or description of measurement methods and procedures actually applied :	Information is based on formal internal and/or external data.
Any comment:	-

B.5.2. Ex-ante calculation of emission reductions:

According to the selected approved methodology, the results of applying the steps and formulas to determine the emission reductions are:

PROJECT EMISSIONS (PE_y)

For most renewable power generation project activities, including wind power, applies $PE_y = 0$, since the project do not use fossil fuels, release non condensable gases or has emission from water reservoirs.

$$PE_y = 0$$

BASELINE EMISSIONS (BE_y)

According to section E.6.2 of the PoA-DD, baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:



- BE_y : Baseline emissions in year y (tCO_2).
 $EG_{PJ,y}$: Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh).
 $EF_{grid,CM,y}$: Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the “Tool to calculate the emission factor for an electricity system” (tCO_2/MWh).

The baseline emission, using the information listed below, including only CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity are:

Baseline Emissions

Year	BE_y (tCO_2)
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]

A. DETERMINATION OF $EG_{PJ,y}$

A.1. Greenfield renewable energy power plants

The net electricity generation of the project is:

$$EG_{PJ,y} = EG_{facility,y}$$

Where:

- $EG_{PJ,y}$: Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)
 $EG_{facility,y}$: Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh).

The net electricity generation of the project activity is listed in the following table.

Net Electricity Generation



Year	$EG_{PJ,y}$ (MWh)
value	value
value	value
value	value
value	value
value	value
value	value
value	value

A.2. Retrofit or replacement of an existing renewable energy power plant

The net electricity generation of the project is:

$$EG_{PJ} = EG_{\text{facility}} - (EG_{\text{historical}} + \sigma_{\text{historical}}) ; \text{ until } DATE_{\text{BaselineRetrofit}}$$

and

$$EG_{PJ,y} = 0; \text{ on/after } DATE_{\text{BaselineRetrofit}}$$

Where:

$EG_{PJ,y}$:	Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh).
$EG_{\text{facility},y}$:	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh).
$EG_{\text{historical}}$:	Annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity (MWh).
$\sigma_{\text{historical}}$:	Standard deviation of the annual average historical net electricity generation delivered to the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity (MWh).
$DATE_{\text{BaselineRetrofit}}$:	Point in time when the existing equipment would need to be replaced in the absence of the project activity (date).

The net electricity generation of the project activity is listed in the following table.

Net Electricity Generation

Year	$EG_{PJ,y}$
------	-------------



	(MWh)
value	value
value	value
value	value
value	value
value	value
value	value
value	value

Calculation of $EG_{historical}$

The project participants have chosen the following time spans of historical data to determine $EG_{historical}$:

- (a) The five last calendar years prior to the implementation of the project activity; or
- (b) The time period from the calendar year following $DATE_{hist}$, up to the last calendar year prior to the implementation of the project, since the time span includes at least five calendar years, where $DATE_{hist}$ is latest point in time between:
 - (i) The commercial commissioning of the plant/unit; or
 - (ii) If applicable: the last capacity addition to the plant/unit; or
 - (iii) If applicable: the last retrofit of the plant/unit.

(Justify the selection and describe evidences or data in tables).

Calculation of $DATE_{BaselineRetrofit}$

The project participants take the following approach into account:

- (a) The typical average technical lifetime of the type equipment may be determined and documented, taking into account common practices in the sector and country, e.g. based on industry surveys, statistics, technical literature, etc.; or
- (b) The common practices of the responsible company regarding replacement/retrofitting schedules may be evaluated and documented, e.g. based on historical replacement/retrofitting records for similar equipment. The point in time when the existing equipment would need to be replaced/retrofitted in the absence of the project activity should be chosen in a conservative manner, i.e. if a range is identified, the earliest date should be chosen

(Justify the selection and describe evidences or data in tables).

A.3. Capacity addition to an existing renewable energy power plant



In the case of wind power plants, it is assumed that the addition of new capacity does not significantly affect the electricity generated by existing plant(s) or unit(s). In this case, the electricity fed into the grid by the added power plant(s) or unit(s) could be directly metered and used to determine $EG_{PJ,y}$.

$$EG_{PJ,y} = EG_{PJ_Add,y}$$

Where:

$EG_{PJ,y}$: Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh).
 $EG_{PJ_Add,y}$: Quantity of net electricity generation supplied to the grid in year y by the project plant/unit that has been added under the project activity (MWh).

The net electricity generation of the project activity is listed in the following table.

Net Electricity Generation

Year	$EG_{PJ,y}$ (MWh)
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]

B. GRID EMISSION FACTOR

Nicaragua

The result for the grid emission factor of [year] is:

a) Calculation of the $EF_{CO_2,grid,y}$ or $EF_{grid,CM,y}$

Calculate the operating margin emission factor according to the selected method

The simple operating margin emission factor ($EF_{grid,OM-simple,y}$) is: [value] tCO₂/MWh.

Calculate the build margin emission factor

The build margin emissions factor ($EF_{grid,BM,y}$) is: [value] tCO₂/MWh.

Calculate the combined margin (CM) emissions factor EF_y .

The combined margin emissions factor is: [value] tCO₂/MWh.

b) Baseline Emissions (BE_y)

The baseline emission, which includes only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity are:



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

Baseline Emissions

Year	BE_y (tCO ₂)
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]
[value]	[value]

Peru

The result for the grid emission factor of 201[year]0 is:

a) Calculation of the $EF_{CO_2,grid,y}$ or $EF_{grid,CM,y}$ **Calculate the operating margin emission factor according to the selected method**

The dispatch operating margin emission factor ($EF_{grid,OM-simple,y}$) is: [value] tCO₂/MWh.

Calculate the build margin emission factor

The build margin emissions factor ($EF_{grid,BM,y}$) is: [value] tCO₂/MWh.

Calculate the combined margin (CM) emissions factor EF_y .

The combined margin emissions factor is: [value] tCO₂/MWh.

b) Baseline Emissions (BE_y)

The baseline emission, which includes only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity are:

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

Baseline Emissions

Year	BE_y (tCO ₂)
------	-------------------------------



value	value
value	value
value	value
value	value
value	value
value	value
value	value

LEAKAGE (L_y)

According to the applicable methodology, leakage emissions may arise due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing, transport) but are neglected.

$L_y = 0$.

EMISSION REDUCTIONS (ER_y)

The emission reduction attributable to the CPA during a given year y (ER_y) are the difference between the baseline emissions (BE_y) and project emissions (PE_y) and leakage emissions (L_y):

Emission Reductions

Year	ER_y (tCO ₂)
value	value
value	value
value	value
value	value
value	value
value	value
value	value

B.5.3. Summary of the ex-ante estimation of emission reductions:

Year	Estimation of project activity emissions	Estimation of baseline emissions (tonnes of CO ₂ e)	Estimation of leakage (tonnes of CO ₂ e)	Estimation of overall emission reductions
------	--	--	---	---



	(tonnes of CO ₂ e)			(tonnes of CO ₂ e)
[value]	[value]	[value]	[value]	[value]
[value]	[value]	[value]	[value]	[value]
[value]	[value]	[value]	[value]	[value]
[value]	[value]	[value]	[value]	[value]
[value]	[value]	[value]	[value]	[value]
[value]	[value]	[value]	[value]	[value]
[value]	[value]	[value]	[value]	[value]
Total (tonnes of CO ₂ e)	[value]	[value]	[value]	[value]

B.6. Application of the monitoring methodology and description of the monitoring plan:

B.6.1. Description of the monitoring plan:

The purpose of the monitoring plan is to measure and record the net electricity delivered to the electrical grid:

1. Management Structure and Responsibilities

The project owner is responsible for daily monitoring and reporting. The manager of the proposed project is the responsible person for reporting the monitoring data in a monthly basis and assure the correct maintenance and operation of the measuring and monitoring equipment, including the existence of appropriate calibration certificates if necessary.

Data Collection: The electricity supplied by the project activity to the grid will be measured by calibrated electricity meters. The parameter will be monitored at the project site and crosschecked with the invoices of electricity commercialized. Data will be monitored continuously, recorded hourly and consolidated in a monthly basis as required by the applicable methodology.

Data Recording: All data collected will be recorded monthly into an electronic spreadsheet.

Data Calibration: All measurements should be conducted with equipment certified to national or IEC standards and calibrated according to the national standards and reference points or IEC standards and recalibrated at appropriate intervals according to manufacturer specifications.

Data Report: Data recorded and the invoices will be consolidated on a monthly basis and will be checked for quality control. If there are discrepancies in the data, the source of the variation will be identified, whatever is the main measured value or the control value. The data report will be consolidated monthly.

Data Archives: The data recording, the data report and the invoices will be archived, together with this monitoring plan. All data collected as part of monitoring should be archived electronically and be kept at least for 2 years after the end of the last crediting period or the last issuance of CERs, whichever occurs later.

2. Data Quality Assurance and Control



Key personnel will be assigned for overall project management, operation, monitoring and reporting as required by the project activity.

A competent supervisor will be appointed to be in charge of and accountable for the generation of CERs including monitoring, record keeping, computation of ERs, audits and verification.

Well-defined protocols and routine procedures, with good, professional data entry, extraction and reporting will be encouraged to maximize transparency of data archiving.

Data and reports will be cross checked internally by the CME to ensure the accuracy and completeness of data. In case of mistakes, corrective action will be applied to avoid future similar mistakes.

3. Training and Monitoring Personnel

All people that participate in the monitoring process will be suitably qualified and trained in the operation and maintenance of the plant. They will also receive a training session on the application of the monitoring plan.

4. Emission factor calculation

The combined margin emission factor used in the emission reduction calculation will be the annually updated factor provided by the coordinating/managing entity.

5. Verification and Monitoring Results

The monitoring report will be prepared by the coordinating/managing entity. It shall contain the data report, the emission factor calculation and the results of the emissions reductions of the project for a certain period.

Leakage monitoring:

No energy generating equipment is transferred from another activity developed in a non-Annex 1 Parties to this project and there is no existing equipment to be transferred to another activity.

The project activity involves electricity generation from wind sources. The employed wind energy generator can only convert wind energy into electrical energy and cannot use any other input fuel for electricity generation. Thus, in no ways and means are required to monitor leakage from the project activity.

Monitoring Parameters

The parameters to be monitored are:

Data / Parameter:	$EG_{PJ,y} / EG_{PJ, facility, y}$
Data unit:	MWh



Description:	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y / Quantity of net electricity supplied to the grid by the project plant/unit in year y .
Source of data to be used:	Measured by electricity meter(s) to be specified in each CPA.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[value]
Description of measurement methods and procedures to be applied:	[describe the measurements, procedures and conditions according to PoA –DD guidelines]
QA/QC procedures to be applied:	[describe the QA/QC according to PoA –DD guidelines] The meter readings will be cross-check with available internal and/or external information as electricity invoices.
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EF_{grid,CM,y}$
Data unit:	tCO ₂ /MWh
Description:	Emission factor for the Peruvian interconnected grid (SEIN) - Peru
Source of data to be used:	Calculated from $EF_{grid,OM,DD,y}$ and $EF_{grid,BM,y}$ as per the “ <i>Tool to calculate the emission factor for an electricity system</i> ” (version 02.2.1) based on official data provided by the administrator of the grid or the relevant national authority.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[value]
Description of measurement methods and procedures to be applied:	The baseline emission factor ($EF_{grid,CM,y}$) is calculated as a combined margin (CM), consisting of the combination of operating margin ($EF_{grid,OM,DD,y}$) and build margin ($EF_{grid,BM,y}$) factors.
QA/QC procedures to be applied:	---
Any comment:	The PoA CPAs will use the $EF_{grid,CM,y}$ calculated by the coordinating/managing entity with the most recent value. The value will be updated using official information from the administrator of the national grid when the information is available. Complete information of every year during the crediting period will be available by COES during the first six months of the following year. Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EF_{grid,OM-DD,y}$
Data unit:	tCO ₂ /MWh



Description:	The Dispatch Data Analysis OM emission factor - Peru
Source of data to be used:	Official data provided by the administrator of the grid or the relevant national authority (COES) publicly available in its web site or directly sent to the coordinating/managing entity. Raw data for generation is based on the 15 minute records of every power plant,
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[value]
Description of measurement methods and procedures to be applied:	The dispatch data analysis operating margin emission factor ($EF_{OM-DD,y} = EF_{grid,OM,y}$ in tCO ₂ /MWh) is a method which involves the power unit that are actually dispatched at the margin during each hour h , where the power unit are separated in power unit in the top of the dispatch n and other power unit.
QA/QC procedures to be applied:	---
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EF_{grid,BM,y}$
Data unit:	tCO ₂ /MWh
Description:	The build margin emissions factor - Peru
Source of data to be used:	Official data provided by the administrator of the grid or the relevant national authority (COES) publicly available in its web site or directly sent to the coordinating/managing entity.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[value]
Description of measurement methods and procedures to be applied:	---
QA/QC procedures to be applied:	---
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EG_{PJ,h}$
Data unit:	MWh
Description:	Electricity displaced by the project activity in hour h of year y - Peru
Source of data to be used:	Project records and/or COES
Value of data applied for the purpose of	Data used is presented in the spreadsheet for Grid Emission Factor calculation.



calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	<p>Directly measured and/or based on the information provided by COES.</p> <p>The proportion of data to be monitored is 100% and the data will be archived electronically.</p> <p>The CPA will specify the value and measurements used (same value as $EG_{BL,y}$ / $EG_{PJ, facility, y}$ for new power plants and only the incremental electricity in the case on retrofitting, replacement and capacity additions).</p>
QA/QC procedures to be applied:	<p>Information of invoices of electricity sold to the grid will be crosschecked with metered information and/or COES information. .</p> <p>To ensure consistency, and if its applicable other records may be used if it is necessary.</p>
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EG_{PJ,y}$
Data unit:	MWh
Description:	Total electricity displaced by the project activity in year y - Peru
Source of data to be used:	Project records and/or COES
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Data used is presented in the spreadsheet for Grid Emission Factor calculation.
Description of measurement methods and procedures to be applied:	<p>The proportion of data to be monitored is 100% and the data will be archived electronically.</p> <p>The CPA has to specify the value and measurements used (same value as $EG_{BL,y}$ / $EG_{PJ, facility, y}$ for new power plants and only the incremental electricity in the case on retrofitting, replacement and capacity additions).</p> <p>.</p>
QA/QC procedures to be applied:	---
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EF_{EL,DD,h}$
Data unit:	tCO ₂ /MWh
Description:	CO ₂ emission factor of power unit in the top of the dispatch order in hour h in year y - Peru
Source of data to be used:	In put data provided by COES.
Value of data applied	Data used is presented in the spreadsheet for Grid Emission Factor calculation.



for the purpose of calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	To calculate $EF_{EL,DD,h}$ the second option is chosen because for the power units data on fuel consumption and electricity generation is available. The proportion of data to be monitored is 100% and the data will be archived electronically.
QA/QC procedures to be applied:	---
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EG_{n,h}$
Data unit:	MWh
Description:	Electricity generated and delivered to the grid by power units n in hour h - Peru
Source of data to be used:	Data provided by COES.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Data used is presented in the spreadsheet for Grid Emission Factor calculation.
Description of measurement methods and procedures to be applied:	The proportion of data to be monitored is 100% and the data will be archived electronically.
QA/QC procedures to be applied:	Is official data.
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EF_{EL,n,y}$
Data unit:	tCO ₂ /MWh
Description:	CO ₂ emission factor of power unit n in year y - Peru
Source of data to be used:	Input data provided by COES.



Value of data applied for the purpose of calculating expected emission reductions in section B.5	Data used is presented in the spreadsheet for Grid Emission Factor calculation.
Description of measurement methods and procedures to be applied:	The $EF_{EL,n,y}$ is determined for method the simple operating margin option A.2. The proportion of data to be monitored is 100% and the data will be archived electronically.
QA/QC procedures to be applied:	---
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EG_{m,y}$
Data unit:	MWh
Description:	Net quantity of electricity generated and delivered to the grid by power unit m in year y - Peru
Source of data to be used:	Data provided by COES.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Data used is presented in the spreadsheet for Grid Emission Factor calculation.
Description of measurement methods and procedures to be applied:	The proportion of data to be monitored is 100% and the data will be archived electronically.
QA/QC procedures to be applied:	Is official data.
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EF_{EL,m,y}$
Data unit:	tCO ₂ /MWh
Description:	CO ₂ emission factor of power unit m in year y - Peru
Source of data to be used:	Input data provided by COES.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Data used is presented in the spreadsheet for Grid Emission Factor calculation.
Description of measurement methods and procedures to be applied:	The $EF_{EL,m,y}$ is determined for method the simple operating margin option A.2. The proportion of data to be monitored is 100% and the data will be archived



applied:	electronically.
QA/QC procedures to be applied:	---
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$\eta_{m,y}$
Data unit:	---
Description:	Average net energy conversion efficiency of power unit m in year y (ratio) - Peru
Source of data to be used:	Data provided by COES.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Data used is presented in the spreadsheet for Grid Emission Factor calculation.
Description of measurement methods and procedures to be applied:	Each year this data will be checked with the last available annual report of COES. The proportion of data to be monitored is 100% and the data will be archived electronically.
QA/QC procedures to be applied:	If the data used is significantly lower than the default value of the applicable technology, project proponents should assess the reliability of the values, and provide appropriate justification if deemed reliable. Otherwise, the default values above shall be used.
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.

Data / Parameter:	$EF_{CO_2,m,i,y}$
Data unit:	kgCO ₂ /TJ
Description:	Average CO ₂ emission factor of fuel type i used in power unit m in year y - Peru
Source of data to be used:	IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in Table 1.4 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[value]
Description of measurement methods and procedures to be applied:	---
QA/QC procedures to be applied:	Every update of IPCC reports will be taken into account.



Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.
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Data / Parameter:	Merit Order
Data unit:	Text
Description:	The merit order in which power plants are dispatched by documented evidence Peru
Source of data to be used:	Data provided by COES.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Data used is presented in the spreadsheet for Grid Emission Factor calculation.
Description of measurement methods and procedures to be applied:	For each year, the variable cost of thermal plants in the SEIN that are in effect in December will be used. The proportion of data to be monitored is 100% and the data will be archived electronically.
QA/QC procedures to be applied:	---
Any comment:	Data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whatever occurs later.


SECTION C. Environmental analysis

C.1. Please indicate the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken. Justify the choice of level at which the environmental analysis is undertaken:

☐ Please tick if this information is provided at the PoA level. In this case sections C.2. and C.3. need not be completed in this form.

C.2. Documentation on the analysis of the environmental impacts, including transboundary impacts:

(Describe the environmental assessment made by the CPA owner and its results in a transparent and clear manner, considering the specific evaluation made for wind projects – effect in local fauna. Mention if there are environmental management plans, the date of the approval of the licence/permit or equivalent in the host country).

C.3. Please state whether in accordance with the host Party laws/regulations, an environmental impact assessment is required for a typical CPA, included in the programme of activities (PoA);

(State the country condition as indicated in the PoA –DD).

For the case of Nicaragua:

According to national regulation and PoA description, the project does not require an EIA, and had to develop an “Environmental Evaluation” according to the MARENA Environmental Evaluation System Decree No. 76-2006.

For the case of Peru:

According to the updated Energy Concession Law 25844³, generation with renewable sources up to 20MW does not require the presentation of an Environmental Impact Assessment –EIA (Article 38 °). Then, every CPA over 20 MW will have to present and summarize its approved EIA, but every CPA will only describe its environmental evaluation results (the completion of an EIA or its approval is not required).

³ Web link: <http://www.minem.gob.pe/minem/archivos/file/Electricidad/normatividad/dl25844.pdf> (Law 25844 updated with the current modifications). Download at July 2011.


SECTION D. Stakeholders' comments
D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:

☐ Please tick if this information is provided at the PoA level. In this case sections D.2. to D.4. need not be completed in this form.

D.2. Brief description how comments by local stakeholders have been invited and compiled:

All possible stakeholders were invited to the consultation meeting, undertaken in the city of [city] on [dd/mm/yyyy]. The invitations were sent out through [methods] in order to increase the range of stakeholders contacted. [information on invitations and announcements]. At least [number] people participated of the meeting and signed the attendance sheet.

During the meeting, the PoA was presented and explained to the stakeholders, as well as the specific project [project name]. After the presentations, the attendants were given [methods/materials]. Finally, the respondents were asked about [questions].

D.3. Summary of the comments received:

The stakeholders present had the following comments, which were registered in the final report of the meeting:

- [comments]

D.4. Report on how due account was taken of any comments received:

All comments received were registered in [register], and [additional data].

The final report includes the following conclusions reached at the stakeholder consultation meeting:

- [conclusions/agreements]

Annex 1**CONTACT INFORMATION ON ENTITY/INDIVIDUAL RESPONSIBLE FOR THE CPA**

Organization:	[name]
Street/P.O.Box:	[name]
Building:	[name]
City:	[name]
State/Region:	[name]
Postfix/ZIP:	[name]
Country:	[name]
Telephone:	[name]
FAX:	[name]
E-Mail:	[name]
URL:	[name]
Represented by:	[name]
Title:	[name]
Salutation:	[name]
Last Name:	[name]
Middle Name:	[name]
First Name:	[name]
Department:	[name]
Mobile:	[name]
Direct FAX:	[name]
Direct tel:	[name]
Personal E-Mail:	[name]



Annex 2

INFORMATION REGARDING PUBLIC FUNDING

The CPA does not involve any public funding from parties included in Annex 1.



Annex 3

BASELINE INFORMATION



Annex 4

MONITORING INFORMATION

Monitoring information is included under section B.6.1.

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