



**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:

"[Project Name] Wind Farm, CPA # number"

Version [version number of the specific CPA]

Date [date of submission of the specific CPA]

Generic CPA-DD document history:

Version 01: January 2012 (submitted for validation)

Version 02: May 2012 (modifications during validation process)

Version 03: Aug 2012 (modifications during validation process)

Version 04: Aug 2012 (modifications during validation process)

A.2. Description of the CPA:

[Project Name] consists in the construction and operation of a [installed capacity, MW] MW wind power plant to be connected to the Chilean [State the System to be connected]. This CPA is developed by [CPA Implementer].

The project will [state technology description: turbines, wind speed, among others].

The project will be located in [community, province, region]. Will cover [Ha] of land and will produce [MWh/year] (average annual generation). This electricity will be sold to the [electric system] through [state the transmission system].

During the crediting period this CPA will reduce [tCO₂ /year], leading to [tCO₂] over the crediting period.

(If necessary for understanding, include footnotes or paragraphs with information/clarification applicable to the specific project circumstances. If considered necessary, include a diagram of the project)

A.3. Entity/individual responsible for CPA:

The CPA implementer is [entity name]

A.4. Technical description of the CPA:
A.4.1. Identification of the CPA:
A.4.1.1. Host Party:

Chile


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

The CPA will be located in [location]. The exact location of the turbines and other main points are listed in the following table:

(indicate source of the table and figure)

Table [n]: Coordinates of the [turbines and/or other points] of the CPA [datum]

Point	East (m)	North (m)
[value]	[value]	[value]
[value]	[value]	[value]
[value]	[value]	[value]
[value]	[value]	[value]
[value]	[value]	[value]
[value]	[value]	[value]
[value]	[value]	[value]

Figure [n]: Project location

[graphic]

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

[dd/mm/yyyy]

A.4.2.2. Expected operational lifetime of the CPA:

[CPA lifetime]

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

[dd/mm/yyyy] or after inclusion date, whichever occurs later.

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 the implementation of the project in the Chilean electric system will reduce [t CO₂e/year]. This leads to a reduction of [t CO₂e] over the first 7-year crediting period.

Years	Annual estimation of emission reductions in tonnes of CO ₂ e
Year 1	[number]
Year 2	[number]
Year 3	[number]
Year 4	[number]
Year 5	[number]
Year 6	[number]
Year 7	[number]
Total Estimated Reductions (tonnes of CO ₂ e)	[number]
Total number of crediting years	7
Annual average over the crediting period of estimated reductions (tonnes of CO ₂ e)	[number]

A.4.5. Public funding of the CPA:

The project does not receive public funding.

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

The present CPA is not registered as an individual CDM project and is not part of another 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:

“Wind Programme of Activities in Chile”

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

The CPA complies with all eligibility criteria stated in section A.4.2 of the PoA-DD:

Table [n]: Fulfilment of the Eligibility Criteria of the PoA

Eligibility Criteria	Fulfilment
1. Be located inside the Geographical Boundary of the PoA, as defined in section A.4.1.2 of the PoA-DD	[explanation]
2. Be a greenfield on shore or off shore wind power plant (new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity)	[explanation]
3. Not: (i) have been registered as a CDM project activity, neither (ii) be included as a CPA under another PoA.	[explanation]
4. No energy generating equipment is transferred from another activity, located in a non-annex I party and no existing equipment is transferred from the project to another activity.	[explanation]
5. Confirm with a writing statement that the CPA will not: a. Be registered as a CDM project activity b. Be included as a CPA under another PoA.	[explanation]
6. During the operation phase, be connected to the Central Interconnected System (SIC) or to the Great North Interconnected System (SING) of Chile.	[explanation]
7. To avoid double counting of emission reductions each CPA will be uniquely identified and defined in an unambiguous manner by providing geographic information (e.g. coordinates).	[explanation]
8. Have a project starting date after the date on which the PoA-DD is uploaded for Global Stakeholder Consultation.	[explanation]
9. Demonstrate the compliance with the	[explanation]



additionality requirements stated on section E.5 of the present PoA-DD	
10. Comply with the conditions of 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 present PoA – DD.	[explanation]
11. Have the Environmental Approval (Resolución de Calificación Ambiental, RCA), if the project is required to assess their environmental impacts by going through the SEIA (“Sistema de Evaluación de Impacto Ambiental” or Environmental Impact Assessment System) by the Law 19,300 (See section C.3 of the PoA-DD).	[explanation]
12. Have conducted a stakeholder consultation process as described in section D of the PoA-DD	[explanation]
13. The CPA implementer must provide a notarized statement confirming that funding from Annex I parties, if any, does not result in a diversion of official development assistance.	[explanation]

B.3. Assessment and demonstration of additionality of the CPA, as per eligibility criteria listed in the Registered PoA:

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

Step 1: Identification of Alternatives to the Project Activity Consistent with Current Laws and Regulations

Since the selected methodology prescribes the baseline scenario the identification of credible and realistic alternatives is not required (paragraph 105 of the Validation and Verification Manual, version 1.2).

Step 2: Investment Analysis

Sub-step 2a: Determine appropriate analysis method:

The analysis method to be used is a benchmark analysis (Option III). This is suited because the baseline does not require investment, and the choice of the developer is to invest or not to invest:

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

[Describe the selection of the benchmark IRR selected according to the description of the PoA DD].

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

The table below presents the main parameters used in the IRR calculation of the [project or equity].

Table[n]: Main parameters used for IRR calculation

Parameters	Unit	Value	Source
Electricity generation	MWh/year	[number]	[reference]
Load Factor	%	[number]	[reference]
Total investment	US\$	[number]	[reference]
Energy price	US\$/MWh	[number]	[reference]
Firm power price	US\$/kw/month	[number]	[reference]
Firm power	MW	[number]	[reference]
Transmission cost (fix)	US\$/month	[number]	[reference]
Transmission cost (variable)	US\$ (per year)	[number]	[reference]
O&M	US\$/year	[number]	[reference]
VAT	%	[number]	[reference]
Operational Life	Years	[number]	[reference]
Residual Value	%	[number]	[reference]
Loan lifetime	years	[number]	[reference]
Income tax	%	[number]	[reference]
Loan interest rate	%	[number]	[reference]
Debt financing	(%)	[number]	[reference]
other		[number]	[reference]

(add or delete rows if appropriate for the analysis applied)

The results of the benchmark analysis are as follows:

IRR Without CER incomes	[value]
Benchmark	10%

As a result of the benchmark analysis it is demonstrated that the project is not financially attractive (the [project or equity] IRR is lower than the benchmark).

Sub-step 2d: Sensitivity analysis

The variables included in this analysis are all variables that constitute more than 20% of total costs or revenues, including the initial investment:

(Add or delete variable, as appropriate)

- Energy generation
- Energy price
- Investment
- O&M



The results of the sensitivity analysis are as follows:

Table[n]: [Project or equity] IRR considering variations in the critical assumptions

	-10%	0%	10%
Investment	[number]	[number]	[number]
O&M	[number]	[number]	[number]
Energy generation	[number]	[number]	[number]
Energy price	[number]	[number]	[number]

(If for one parameter the +10% / -10% variation range does not reflect the project characteristics and circumstances, indicate and justify a suitable range)

[Conclusion]

Step 3: Barrier analysis

(deleted the option not applicable)

(option 1)

Not used in this CPA.

(option 2)

Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity

[Identify the realistic barriers that would prevent the implementation of the project considering the specific characteristics and circumstances of the CPA]

Outcome of Step 3a:

[List the identified barriers]

Sub-step 3b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity)

[Explanation]

Step 4: Common practice analysis

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

Since the project is of [number] MW, the +/-50% condition will result in a range of [number] MW to [number] MW.

**Step 2:**

The applicable geographical area corresponds to the entire country, so in the following analysis all power plants connected to the Chilean grids (SIC, SING, AYSÉN, MAGALLANES) will be included. The following table shows all the grid connected power plants within the [number] to [number] MW range stated in Step 1, excluding those registered as CDM projects or published on the UNFCCC website for global stakeholder consultation as part of the validation process.

Table[n]: Grid connected power plants in Chile ([number] to [number] MW)

Power Plant Name	Technology	Installed Capacity (MW)	Grid
[name]	[Technology]	[number]	[grid]
[name]	[Technology]	[number]	[grid]
[name]	[Technology]	[number]	[grid]

Source: (indicate source)

Based on the information in the table before:

$$N_{\text{all}} = [\text{number}]$$

Step 3:

From the power plants presented in the table before, [number] of them correspond to wind power plants, then:

$$N_{\text{diff}} = [\text{number}]$$

Step 4: based on the values defined for N_{all} and N_{diff} the factor representing the share of plants using technology similar to the technology used in the proposed project activity is:

$$F = 1 - N_{\text{diff}}/N_{\text{all}} = 1 - ([\text{number}]/[\text{number}]) = [\text{number}]$$

And

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

(indicate one or both of the alternatives) As [the factor F is lower than 0.2] and [$N_{\text{all}} - N_{\text{diff}}$ is lower than 3] then the project is not the common practice.



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.

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	For geothermal power plants, fugitive emissions of CH ₄ and CO ₂ from non-condensable gases contained in geothermal steam	CO ₂	Yes	Not applicable
		CH ₄	Yes	
		N ₂ O	No	
	CO ₂ emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants	CO ₂	Yes	Not applicable
		CH ₄	No	
		N ₂ O	No	
	For hydro power plants, emissions of CH ₄ from the reservoir	CO ₂	No	Not applicable
		CH ₄	Yes	
		N ₂ O	No	

The project is location the [region name] Region and thus within the geographical boundary of the PoA.

B.5. Emission reductions:

B.5.1. Data and parameters that are available at validation:

Data / Parameter:	FC _{i,m,y}
Data unit:	Tonnes (mass) or m ³ (volume)
Description:	Amount of fossil fuel type <i>i</i> consumed by power plant/unit <i>m</i> in year <i>y</i>
Source of data used:	Public records: CDEC-SIC or CDEC – SING yearbook (CDEC-SIC or CDEC SING is the Economic Load Dispatch Center for the respective system)
Value applied:	Data used is presented in Annex 3 and in the spreadsheet for Grid Emission Factor calculation.
Justification of the choice of data or description of measurement methods and procedures actually applied :	Official data
Any comment:	Data will be kept for at least 2 years after the end of the crediting period of the CPA or the last issuance of CERs for the CPA, whatever occurs later.



Data / Parameter:	NCV _{i,y}
Data unit:	GJ/mass or volume unit
Description:	Net calorific value (energy content) of fossil fuel type <i>i</i> in year <i>y</i> .
Source of data used:	Last version of National Energy Balance available at the moment of presentation of the CPA for inclusion in the PoA
Value applied:	[fuel] = [number] [fuel] = [number] [fuel] = [number] [fuel] = [number] [fuel] = [number]
Justification of the choice of data or description of measurement methods and procedures actually applied :	NCV for each fuel is taken from National Energy Balance. For the specific fuel for which no information is contained in National Energy Balance, IPCC default values (default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter1 of Vol. 2 - Energy- of the 2006 IPCC Guidelines on National GHG Inventories) are used. (modified if required)
Any comment:	Data will be kept for at least 2 years after the end of the crediting period of the CPA or the last issuance of CERs for the CPA, whatever occurs later.

Data / Parameter:	EF _{CO₂,i,y} and EF _{CO₂,m,i,y}
Data unit:	tCO ₂ /GJ
Description:	CO ₂ emission factor of fossil fuel type <i>i</i> used in power unit <i>m</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 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories.
Value applied:	[fuel] = [number] [fuel] = [number] [fuel] = [number] [fuel] = [number] [fuel] = [number]
Justification of the choice of data or description of measurement methods and procedures actually applied :	Values provided by the fuel supplier of the power plants in invoices and Regional or national average default values are not available.
Any comment:	Data will be kept for at least 2 years after the end of the crediting period of the CPA or the last issuance of CERs for the CPA, whatever occurs later.

Data / Parameter:	EG _{m,y} and EG _{k,y}
Data unit:	MWh
Description:	Net electricity generated by power plant/unit <i>m</i> or <i>k</i> in year <i>y</i>
Source of data used:	Public records: CDEC-SIC or CDEC – SING yearbook (CDEC-SIC or CDEC SING is the Economic Load Dispatch Center for the respective system)
Value applied:	Data used is presented in Annex 3 and in the spreadsheet for Grid Emission Factor calculation.



Justification of the choice of data or description of measurement methods and procedures actually applied :	Official data
Any comment:	Data will be kept for at least 2 years after the end of the crediting period of the CPA or the last issuance of CERs for the CPA, whatever occurs later.

Data / Parameter:	$\eta_{m,y}$								
Data unit:	-								
Description:	Average net energy conversion efficiency of power unit <i>m</i> in year <i>y</i>								
Source of data used:	Default values provided in Annex 1 of the last version of “Tool to calculate the emission factor for an electricity system” at the moment of presentation of the CPA for inclusion in the PoA								
Value applied:	<table> <tr> <td>[type of power plant]</td><td>[number]%</td></tr> <tr> <td>[type of power plant]</td><td>[number]%</td></tr> <tr> <td>[type of power plant]</td><td>[number]%</td></tr> <tr> <td>[type of power plant]</td><td>[number]%</td></tr> </table>	[type of power plant]	[number]%	[type of power plant]	[number]%	[type of power plant]	[number]%	[type of power plant]	[number]%
[type of power plant]	[number]%								
[type of power plant]	[number]%								
[type of power plant]	[number]%								
[type of power plant]	[number]%								
Justification of the choice of data or description of measurement methods and procedures actually applied :	Documented manufacturer’s specifications and data from the utility, the dispatch center or official records are not available.								
Any comment:	Data will be kept for at least 2 years after the end of the crediting period of the CPA or the last issuance of CERs for the CPA, whatever occurs later.								

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

Project emissions (PE_y)

According to the methodology, project emissions are related to the operation of geothermal power plants, water reservoirs in the case of hydropower plants, or on-site consumption of fossil fuels. Since the project activity is not a geothermal power plant, is not a hydropower plant and does not consume fossil fuels, project emissions are zero.

$$PE_y = 0$$

Baseline Emissions (BE_y)

a) Calculation of the emission factor



As defined in Section E.6.2. of the PoA-DD for the emission factor calculation the electricity system is [indicate the electricity system], and only grid-connected power plants will be considered.

(deleted the option not applicable)

(Option 1: SIC connected projects)

Operating Margin [(year), (year), (year)]. The OM will be calculated applying the Simple Adjusted method. As per equation 6 of the PoA-DD and as further detailed in Annex 3:

$$\sum_m EG_{m,y} \times EF_{EL,m,y} = [\text{number}] \text{ tCO}_2$$

$$\sum_k EG_{k,y} \times EF_{EL,k,y} = [\text{number}] \text{ tCO}_2$$

$$\sum_m EG_{m,y} = [\text{number}] \text{ MWh}$$

$$\sum_k EG_{k,y} = [\text{number}] \text{ MWh}$$

$$\lambda_y = [\text{number}]$$

$$(1 - \lambda_y) = [\text{number}]$$

Then :

$$EF_{\text{grid,OM-adj, [year]}} = [\text{number}] \times \frac{[\text{number}] \text{ tCO}_2}{[\text{number}] \text{ MWh}} + [\text{number}] \times \frac{[\text{number}] \text{ tCO}_2}{[\text{number}] \text{ MWh}}$$

$$EF_{\text{grid,OM-adj, [year]}} = [\text{number}] \text{ tCO}_2/\text{MWh}$$

Using the same formula for [year] and [year] data:

$$EF_{\text{grid,OM-adj, [year]}} = [\text{number}] \text{ tCO}_2/\text{MWh}$$

$$EF_{\text{grid,OM-adj, [year]}} = [\text{number}] \text{ tCO}_2/\text{MWh}$$

Then the OM emission factor for the period is:

	[year]	[year]	[year]
EF_{OM} (t CO₂/MWh)	[number]	[number]	[number]



	[year]	[year]	[year]
Annual Generation OM (MWh)	[number]	[number]	[number]
Weight	[number]%	[number]%	[number]%

EF _{OM}	=	[number]	Ton CO ₂ /MWh
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Build Margin. Based on equation 8 and procedures stated in the PoA-DD, and as detailed in Annex 3:

$$\sum_m EG_{m,y} \times EF_{EL,m,y} = [\text{number}] \text{ tCO}_2$$

$$\sum_m EG_{m,y} = [\text{number}] \text{ MWh}$$

Then:

$$EF_{\text{grid,BM},[\text{year}]} = \frac{[\text{number}] \text{ tCO}_2}{[\text{number}] \text{ MWh}}$$

$$EF_{\text{grid,BM},[\text{year}]} = [\text{number}] \text{ tCO}_2/\text{MWh}$$

Combined margin emission factor. As per equation 9 of the PoA-DD:

$$EF_{\text{grid,CM},[\text{year}]} = EF_{\text{grid,OM-adj},[\text{year}]} \text{ tCO}_2/\text{MWh} \times 0.75 + EF_{\text{grid,BM},[\text{year}]} \text{ tCO}_2/\text{MWh} \times 0.25$$

$$EF_{\text{grid,CM},[\text{year}]} = [\text{number}] \text{ tCO}_2/\text{MWh} \times 0.75 + [\text{number}] \text{ tCO}_2/\text{MWh} \times 0.25$$

$$EF_{\text{grid,CM},[\text{year}]} = [\text{number}] \text{ tCO}_2/\text{MWh}$$

(Option 2: SING connected projects)

Operating Margin [(year), (year), (year)]. The Simple OM method will be applied. As per equation 3 of the PoA-DD:

$$\sum_m EG_{m,y} \times EF_{EL,m,y} = [\text{number}] \text{ tCO}_2$$

$$\sum_m EG_{m,y} = [\text{number}] \text{ MWh}$$

Then:



$$EF_{\text{grid,OM-simple,[year]}} = \frac{[\text{number}] \text{ tCO}_2}{[\text{number}] \text{ MWh}}$$

$$EF_{\text{grid,OM-simple,[year]}} = [\text{number}] \text{ tCO}_2/\text{MWh}$$

Using the same formula for [year] and [year] data:

$$EF_{\text{grid,OM-adj,[year]}} = [\text{number}] \text{ tCO}_2/\text{MWh}$$

$$EF_{\text{grid,OM-adj,[year]}} = [\text{number}] \text{ tCO}_2/\text{MWh}$$

Then the OM emission factor for the period is:

	[year]	[year]	[year]
EF_{OM} (t CO₂/MWh)	[number]	[number]	[number]

	[year]	[year]	[year]
Annual Generation OM (MWh)	[number]	[number]	[number]
Weight	[number]%	[number]%	[number]%

EF_{OM}	=	[number]	Ton CO₂/MWh
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Build Margin. Based on equation 8 and procedures stated in the PoA-DD, and as detailed in Annex 3:

$$\sum_m EG_{m,y} \times EF_{EL,m,y} = [\text{number}] \text{ tCO}_2$$

$$\sum_m EG_{m,y} = [\text{number}] \text{ MWh}$$

Then:

$$EF_{\text{grid,BM,[year]}} = \frac{[\text{number}] \text{ tCO}_2}{[\text{number}] \text{ MWh}}$$

$$EF_{\text{grid,BM,[year]}} = [\text{number}] \text{ tCO}_2/\text{MWh}$$

Combined margin emission factor. As per equation 9 of the PoA-DD:

$$EF_{\text{grid,CM,[year]}} = EF_{\text{grid,OM-adj,[year]}} \text{ tCO}_2/\text{MWh} \times 0.75 + EF_{\text{grid,BM,[year]}} \text{ tCO}_2/\text{MWh} \times 0.25$$



$$EF_{\text{grid,CM,[year]}} = [\text{number}] \text{ tCO}_2/\text{MWh} \times 0.75 + [\text{number}] \text{ tCO}_2/\text{MWh} \times 0.25$$

$$EF_{\text{grid,CM,[year]}} = [\text{number}] \text{ tCO}_2/\text{MWh}$$

b) Net electricity generation ($EG_{PJ,y} = EG_{\text{facility},y}$)

The expected average net electricity generation is [number] MWh/yr.

As per equation 1 of the PoA-DD:

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

$$BE_y = [\text{number}] \text{ MWh/yr} \times [\text{number}] \text{ tCO}_2/\text{MWh}$$

$$BE_y = [\text{number}] \text{ tCO}_2/\text{yr}$$

Leakage Emissions (L_y)

As stated in the PoA-DD no leakage emissions are considered.

Emission Reduction (ER_y)

As per equation 12 of the PoA-DD:

$$ER_y = BE_y - PE_y$$

$$ER_y = [\text{number}] \text{ tCO}_2/\text{yr} - [\text{number}] \text{ tCO}_2/\text{yr}$$

$$ER_y = [\text{number}] \text{ tCO}_2/\text{yr}$$

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

Year	Estimation of project activity emissions (tonnes of CO ₂ e)	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)
[year]	0	[number]	0	[number]
[year]	0	[number]	0	[number]
[year]	0	[number]	0	[number]
[year]	0	[number]	0	[number]
[year]	0	[number]	0	[number]



[year]	0	[number]	0	[number]
[year]	0	[number]	0	[number]
[year]	0	[number]	0	[number]
Total (tonnes of CO ₂ e)	0	[number]	0	[number]

B.6. Application of the monitoring methodology and description of the monitoring plan:
B.6.1. Description of the monitoring plan:
1. Management Structure and Responsibilities

The CPA implementer is the overall responsible for the monitoring and reporting of all parameters acquired at the project site: net electricity generation. Before the start of the first crediting period the CPA implementer will designate a CDM project manager, who will be the responsible person for reporting the monitoring data in a monthly basis to the CME and assure the correct maintenance and operation of the measuring and monitoring equipments, including the existence of appropriate calibration certificates.

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. Data will be monitored continuously, electronically recorded hourly and consolidated in a daily basis.

The CPA implementer will kept data for at least 2 years after the end of the crediting period of the CPA or the last issuance of CERs for the CPA, whatever occurs later.

Accuracy and calibration: electricity meters will be ANSI class 2 in compliance with Chilean applicable regulation and will be calibrated at appropriate intervals according to manufacturer specifications or Chilean regulations. CDM project manager will provide the CME with a calibration schedule and the calibration certificates.

Data Report: Data recorded (from main and secondary meters) will be monthly consolidated by the CDM project manager and will be checked for quality control. If there are discrepancies in the data, the source of the variation will be identified. CDM project manager will provide the monthly consolidated data to the CME; if discrepancies in the data were found it will be informed to the CME indicating the source of the variation.

The CME will kept data for at least 2 years after the end of the crediting period of the CPA or the last issuance of CERs for the CPA, whatever occurs later.

2. Data Quality Control

CME will check electricity generation values against official information ([CDEC-SIC or CDEC-SING] monthly statistics) and/or invoices.

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 will be determined using the ex ante option, The combined margin emission factor calculation will be performed by the CME using information published by the local authorities so no direct measurements are involved.

5. Monitoring Reports and Verification

Monitoring reports will be prepared and submitted to the DOE for verification by the CME, as described in section A.4.4.2 of the PoA-DD.

Data to be monitored is:

Data / Parameter:	$EG_{\text{facility},y}$
Data unit:	MWh
Description:	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y.
Source of data to be used:	CPA project site
Value of data applied for the purpose of calculating expected emission reductions in section B.5	[number]
Description of measurement methods and procedures to be applied:	The electricity supplied to the grid by each CPA will be measured by continuous meters. Data will be electronically recorded and aggregated on a daily basis. The electricity meters will be ANSI class 2, in compliance with Chilean applicable regulation 'Norma Técnica de Seguridad y Calidad de Servicio, Comisión Nacional de Energía'.
QA/QC procedures to be applied:	Values will be checked against official information (<i>(select the applicable option)</i> [CDEC-SIC] [CDEC-SING] monthly statistics) and/or invoices.. Meters will be calibrated according with the Chilean applicable regulation or, in absence of applicable regulation, following the manufacturer specifications..
Any comment:	Data will be kept for at least 2 years after the end of the crediting period of the CPA or the last issuance of CERs for the CPA, 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:

(deleted the option not applicable)

(option 1)

The project did not need to assess its environmental impacts by going through the SEIA (Environmental Impact Assessment System) because it does not meet the conditions stated in law 19,300 S.D. No 95, as described in Section C of the PoA-DD.

[in this case briefly describe the potential impacts of the project and how these will be managed]

(option 2)

In compliance with Chilean regulations the project officially assessed its environmental impacts by going through the SEIA (Environmental Impact Assessment System) because it meets the conditions stated in law 19,300 S.D. No 95, as described in Section C of the PoA-DD. The assessment was made through [an Environmental Impact Statement (“Declaración de Impacto Ambiental”, DIA)] or [an Environmental Impact Assessment (“Estudio de Impacto Ambiental”, EIA)] [³], that was approved on [date] [⁴] by [entity that approved the project] (resolution [number of the resolution]).

[in this case briefly describe the potential impacts of the project and how these will be managed according to the DIA or EIA]

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).:

Addressed in the PoA-DD (section C.3)

³ Link to the EIA or DIA in the SEIA. <http://seia.sea.gob.cl/busqueda/buscarProyecto.php>

⁴ Link to the environmental approval. <http://seia.sea.gob.cl/busqueda/buscarProyecto.php>

**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:

(deleted the option not applicable)

(option 1)

As the environmental impacts of the projects were formally assessed through an Environmental Impact Assessment (EIA) in the Environmental Impact Assessment System (SEIA) a stakeholder consultation process was coordinated by the Environmental Authority in compliance with articles 49 to 53 of the Environmental Impact Assessment System Regulation.

As defined by the authority the consultation process considered [specify the mechanisms (such as meetings), indicating number, dates, places, actors involved].

Also a summary of the project was published in the Official Gazette on [date] and in a [local/national] newspaper on [date].

(additional actions can be added if considered necessary)

(option 2)

As the [project did not require to go through the Environmental Impact Assessment System (SEIA)] or [environmental impacts of the projects were formally assessed through an Environmental Impact Statement ("Declaración de Impacto Ambiental", DIA) in the Environmental Impact Assessment System (SEIA)] an official stakeholder consultation process coordinated by the Environmental Authority was not required.

[description of the stakeholder consultation process, indicating how the comments were invited and compiled]

D.3. Summary of the comments received:

(complete)

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

(complete)

**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:	[number]
FAX:	[number]
E-Mail:	[name]
URL:	[name]
Represented by:	[name]
Title:	[name]
Salutation:	[name]
Last Name:	[name]
Middle Name:	[name]
First Name:	[name]
Department:	[name]
Mobile:	[number]
Direct FAX:	[number]
Direct tel:	[number]
Personal E-Mail:	[name]



Annex 2

INFORMATION REGARDING PUBLIC FUNDING

There is no public funding

**Annex 3****BASELINE INFORMATION****DETERMINATION OF GRID EMISSION FACTOR - SIC****Build Margin [year]**

The values used for the determination of the annual electricity generation of the project electricity system, excluding power units registered as CDM project activities (AEG_{total} , in MWh) are the following:

Generation of power units
registered as CDM project activities

POWER PLANT		Generation[year] (MWh)
[name]	[CDM ID]	[number]
[name]	[CDM ID]	[number]
[name]	[CDM ID]	[number]
total		[number]

Total SIC generation = [number] MWh
CDM projects generation = [number] MWh

Then:

AEG_{total} = [number] MWh

The following table shows the generation of the power plants included in the BM.

Build Margin Power Units. Accumulated Generation (MWh)

	Name	Start operation	$EG_{m,v}$ (MWh)	% accumulated	$EF_{ELm,v}$ (tCO ₂ /MWh)	$EG_{m,v} \times EF_{ELm,v}$	
SET 5-units	[name]	[year]	[number]	[number]	[number]	[number]	
	[name]	[year]	[number]	[number]	[number]	[number]	
	[name]	[year]	[number]	[number]	[number]	[number]	
	[name]	[year]	[number]	[number]	[number]	[number]	
	[name]	[year]	[number]	[number]	[number]	[number]	
SET ≥20%	[name]	[year]	[number]	[number]	[number]	[number]	
	[name]	[year]	[number]	[number]	[number]	[number]	
	[name]	[year]	[number]	[number]	[number]	[number]	
	[name]	[year]	[--]	[--]	[--]	[--]	CDM ID
	[name]	[year]	[number]	[number]	[number]	[number]	
	[name]	[year]	[number]	[number]	[number]	[number]	
Total			[number]	[number]	[number]	[number]	

[Sources:]



$$\sum_m EG_{m,y} \times EF_{EL,m,y} = [\text{number}] \text{ tCO}_2$$

$$\sum_m EG_{m,y} = [\text{number}] \text{ MWh}$$

Operating Margin [year-year]

(repeat for every year of the OM calculation)

The Simple Adjusted Method calculations for [year] are as follows:

(delete or add columns if required based on the fuels used in the system)

Power plants with option A1:

Name	EG _{m,v} (MWh)	NG (mm m ³)	Diesel (m ton)	Coal (m ton)	GNL (mm m ³)	EF _{EL,m,v} (tCO ₂ /MWh)	EG x EF _{EL}
[name]	[number]	[number]	[number]	[number]	[number]	[number]	[number]
[name]	[number]	[number]	[number]	[number]	[number]	[number]	[number]
[name]	[number]	[number]	[number]	[number]	[number]	[number]	[number]
Total	[number]						[number]

[Sources:]

Power plants with option A2:

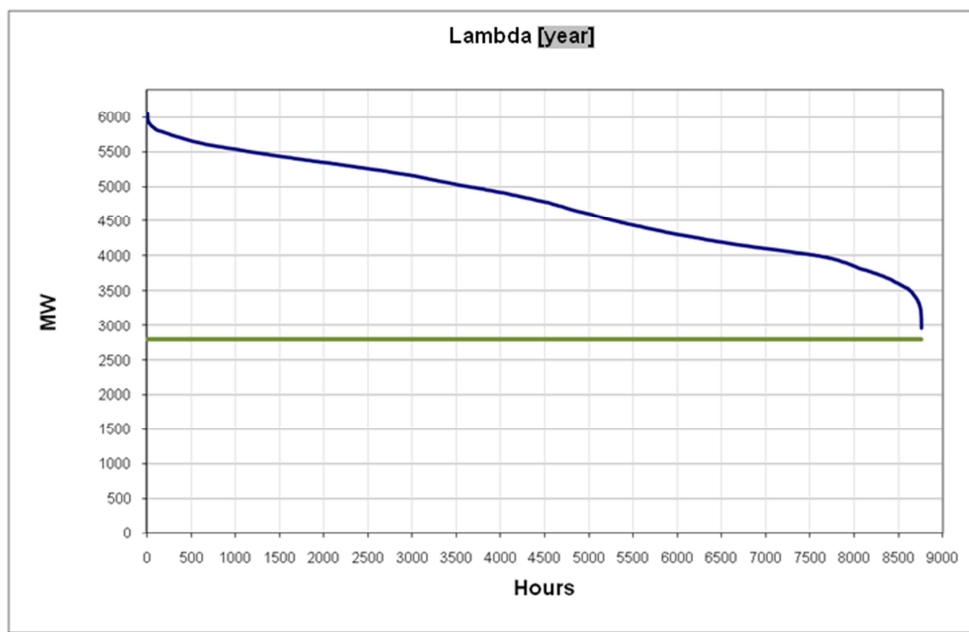
Name	Start Operation	Type	Fuel	EG _{m,v} (MWh)	EF _{EL,m,v} (tCO ₂ /MWh)	EG x EF _{EL}
[name]	[year]	[type]	[type]	[number]	[number]	[number]
[name]	[year]	[type]	[type]	[number]	[number]	[number]
[name]	[year]	[type]	[type]	[number]	[number]	[number]
[name]	[year]	[type]	[type]	[number]	[number]	[number]
Total				[number]		[number]

[Sources:]

Total:

	Option A1	Option A2	Total
$\sum_m EG_{m,y} \times EF_{EL,m,y}$ (tCO ₂)	[number]	[number]	[number]
$\sum_m EG_{m,y}$ (MWh)	[number]	[number]	[number]

Lambda:



Intersection (MW)	[number]
Area under the curve	[number]
Low Cost Generation	[number]
No Low Cost Generation	[number]
Number of hours	[number]
λ =	[number]
$1-\lambda$ =	[number]

**DETERMINATION OF GRID EMISSION FACTOR - SING****Build Margin [year]**

The values used for the determination of the annual electricity generation of the project electricity system, excluding power units registered as CDM project activities (AEG_{total} , in MWh) are the following:

Generation of power units
registered as CDM project activities

POWER PLANT		Generation [year] (MWh)
[name]	[CDM ID]	[number]
[name]	[CDM ID]	[number]
[name]	[CDM ID]	[number]
total		[number]

Total SING generation = [number] MWh
CDM projects generation = [number] MWh

Then:

AEG_{total} = [number] MWh

The following table shows the generation of the power plants included in the BM.

Build Margin Power Units. Accumulated Generation (MWh)

	Name	Start operation	EG _{m,v} (MWh)	% accumulated	EF _{EL,m,v} (tCO ₂ /MWh)	EG _{m,v} x EF _{EL,m,v}
SET 5-units	[name]	[year]	[number]	[number]	[number]	[number]
	[name]	[year]	[number]	[number]	[number]	[number]
	[name]	[year]	[number]	[number]	[number]	[number]
	[name]	[year]	[number]	[number]	[number]	[number]
	[name]	[year]	[number]	[number]	[number]	[number]
SET ≥20%	[name]	[year]	[number]	[number]	[number]	[number]
	[name]	[year]	[number]	[number]	[number]	[number]
	[name]	[year]	[number]	[number]	[number]	[number]
	[name]	[year]	[--]	[--]	[--]	[--]
	[name]	[year]	[number]	[number]	[number]	[number]
	[name]	[year]	[number]	[number]	[number]	[number]
Total			[number]	[number]	[number]	[number]

CDM ID

[Sources:]

$$\sum_m EG_{m,y} \times EF_{EL,m,y} = [\text{number}] \text{ tCO}_2$$



$$\sum_m EG_{m,y} = [\text{number}] \text{ MWh}$$

Operating Margin [year-year]

(repeat for every year of the OM calculation)

The Simple Method calculations for [year] are as follows:

(delete or add columns if required based on the fuels used in the system)

Power plants with option A1:

Name	EG _{m,v} (MWh)	NG (mm m ³)	Diesel (m ton)	Coal (m ton)	EF _{EL,m,v} (tCO ₂ /MWh)	EG x EF _{EL}
[name]	[number]	[number]	[number]	[number]	[number]	[number]
[name]	[number]	[number]	[number]	[number]	[number]	[number]
[name]	[number]	[number]	[number]	[number]	[number]	[number]
Total	[number]					[number]

[Sources:]

Power plants with option A2:

Name	Start Operation	Type	Fuel	EG _{m,v} (MWh)	EF _{EL,m,v} (tCO ₂ /MWh)	EG x EF _{EL}
[name]	[year]	[type]	[type]	[number]	[number]	[number]
[name]	[year]	[type]	[type]	[number]	[number]	[number]
[name]	[year]	[type]	[type]	[number]	[number]	[number]
[name]	[year]	[type]	[type]	[number]	[number]	[number]
Total				[number]		[number]

[Sources:]

Total:

	Option A1	Option A2	Total
$\sum_m EG_{m,y} \times EF_{EL,m,y}$ (tCO ₂)	[number]	[number]	[number]
$\sum_m EG_{m,y}$ (MWh)	[number]	[number]	[number]



Annex 4

MONITORING INFORMATION
