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

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NOTE:

(i) This form is for submission of CPAs that apply a small scale approved methodology using the provision of the proposed small scale CDM PoA.

(ii) The coordinating/managing entity shall prepare a CDM Small Scale Programme Activity Design Document (CDM-SSC-CPA-DD)[1,2] that is specified to the proposed PoA by using the provisions stated in the SSC PoA DD. At the time of requesting registration the SSC PoA DD must be accompanied by a CDM-SSC CPA-DD form that has been specified for the proposed SSC PoA, as well as by one completed CDM-SSC CPA-DD (using a real case). After the first CPA, every CPA that is added over time to the SSC PoA must submit a completed CDM-SSC 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 small scale CDM programme activity (CPA)

A.1. Title of the small-scale CPA:

CPA name: [Add number] - [Add CPA title]

Version: [number]
Date: [day, month, year]

A.2. Description of the small-scale CPA:

This CPA involves the development of a run-of-the-river plant with [add installed capacity] MW [add technical details] that will supply electricity to the Macedonian grid. The project site is [add CPA location details].

The estimated full load operation hours are [add hours] and the project is expected to generate [add generation]MWh of electricity per year and achieve greenhouse gas emission reductions of [add tonnes]tCO_2e per year through displacing carbon intensive power on the Macedonian grid.

A.3. Entity/individual responsible for the small-scale CPA:

The CPA implementing entity is [add name of CPA implementing entity]

A.4. Technical description of the small-scale CPA:

Table 1: Key technical parameters of CPA

Parameter	Value	Unit	Information source
Total installed capacity	[add value]	MW	[add name of info source/document]
Power generation	[add value]	MWh/year	[add name of info source/document]
Net head	[add value]	m	[add name of info source/document]
Design flow	[add value]	-	[add name of info source/document]
Grid connection voltage	[add value]	kV	[add name of info source/document]
Power line length	[add value]	km	[add name of info source/document]

Table 2: Main equipment characteristics

Equipment	Type	Rated power	Information source
Turbine	[add information]	[add value]	Preliminary project
Generator	[add information]	[add value]	Preliminary project

[Add CPA specific information]

A.4.1. Identification of the small-scale CPA:

The CPA's unique identification code (as described in section A.4.4.1. of the PoA-DD) is MAC [add 4 digit project number] and the name of the CPA is [add CPA title].

As described in section A.4.4.1. of the PoA-DD, the code will be written down in the CME PoA electronic database, along with other project information. This data would be used both for internal management purposes and for external control by the DOE.

A.4.1.1. Host Party:

Republic of Macedonia

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

Table 2: CPA identification Information

CPA identification code	MAC [add 4 digit project number]
CPA location	
Location	[Add address of CPA or if not available description of proximity to nearest village]
River	[Add name of river]
Geographical coordinates	[Add GPS coordinates, latitude and longditude]
Implementing entity	
Address	[Add address of implementing entity]
Telephone	[Add telephone number of implementing entity]
Email	[Add email address of implementing entity]
Contact person	[Add contact person, if applicable, representing implementing entity]
Position	[Add position of contact person, if available]

Figure 2: Map of [add CPA title] project

A.4.2. Duration of the small-scale CPA:

A.4.2.1. Starting date of the small-scale CPA:

[Add start date of the CPA and nature of evidence for this date]. This date is after the starting date of validation for the PoA, which is the date when documents were submitted for Global Stakeholder consultation – 07/03/2012.

A.4.2.2. Expected operational lifetime of the small-scale CPA:

[Add number] years, [Add number] months

A.4.3. Choice of the crediting period and related information:

[] Fixed crediting period

[] Renewable crediting period

A.4.3.1. Starting date of the crediting period:

[Add expected date of commissioning of CPA].

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

[] 10 years fixed

[] 7 years renewable twice

NOTE: Please note that the duration of crediting period of any *CPA* shall be limited to the end date of the *PoA* regardless of when the CPA is added.

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

Table 3: Emission reductions estimate

Years	Annual Estimation of Emission Reduction in $tCO2_e$
[Add Year 1]	[]
[Add Year 2]	[]
[Add Year 3]	[]
[Add Year 4]	[]
[Add Year 5]	[]
[Add Year 6]	[]
[Add Year 7]	[]
[Add Year 8, if applicable]	[]
[Add Year 9, if applicable]	[]
[Add Year 10, if applicable]	[]
Total emission reductions	[]
Total number of crediting years	[]
Annual average estimated emission reductions over the crediting period	[]

A.4.5. Public funding of the CPA:

[Option 1:] The [add CPA title] CPA has received no public funding.

[Option 2:] The [add CPA title] CPA has received public funding. However, it has been confirmed that there has been no rechanneling of official development funding.

[If necessary, provide more specific explanation, using Annex 2]

A.4.6. Information to confirm that the proposed small-scale CPA is not a de-bundled component

De-bundling checks have been performed as described in section A.4.4.1. of the PoA-DD, in accordance with Annex 13, EB 54 "Guidelines on Assessment of De-Bundling for SSC Project Activities".

It has been confirmed that there is no existing project activity that is both:

a) Implemented by the same entity or managed by the same CME as the proposed CPA; and
b) Located within 1km of the proposed CPA, as measured from the closest point.

[If necessary, add more specific information regarding de-bundling]

A.4.7. Confirmation that small-scale CPA is neither registered as an individual CDM project activity or is part of another Registered PoA:

The [add CPA title] CPA has been cross checked with the electronic databases described in section A.4.4.1. of the PoA-DD to confirm that it is neither registered as an individual CDM project activity, nor it is part of another Registered PoA.

Moreover, in order to be considered eligible for inclusion in the PoA, the CPA implementing entity has entered into contractual arrangement with the CME. The contract explicitly forbids the implementing entity to register the [add CPA title] CPA as an individual CDM project activity or to include it in another PoA.

SECTION B. Eligibility of small-scale CPA and Estimation of emissions reductions

B.1. Title and reference of the Registered PoA to which small-scale CPA is added:

Macedonian Microscale Grid-connected Hydroelectricity Programme [add UNFCCC project reference code]

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

The [add CPA title] CPA is eligible to be included in the Macedonian Microscale Grid-connected Hydroelectricity Programme as it fulfils the eligibility requirements set out in section A.4.2.2. of the PoA-DD.

Table 4: PoA eligibility requirements

Eligibility criteria	CPA Justification	Justification Source
1. Project type, category, and technology fit		
1.1. The CPA installs =<5 MW and falls into the following type and categories as defined by Appendix B of the 'Simplified modalities and procedures for small scale CDM project activities': • Type I - Renewable energy project • Category: I.D. – Renewable energy technologies that supply electricity to a grid • Sub-category: Renewable energy generation units utilizing hydropower for electricity generation.	The [add CPA title] CPA installs [Add CPA specific information] and utilizes hydropower for electricity generation and delivery to the Macedonian grid.	[Add source which could be used to verify the CPA justification, if available]
1.2. The plant should be a run-of-river power plant. According to the World Commission of Dams (2000), a run-of-river hydro power plant is characterized as having "dams that created a hydraulic head in the river to divert some portion of the river flows. They have no storage reservoir or limited daily poundage."[3]	The [add CPA title] CPA is a run-of-the river powerplant.	[Add source which could be used to verify the CPA justification, if available]
1.3. The plant should be a Greenfield plant and must not involve retrofitting or modifying of an existing facility for renewable energy generation.	The [add CPA title] CPA is a Greenfield plant.	[Add source which could be used to verify the CPA justification, if available]
1.4. To ensure there is no leakage, no energy generating equipment should be transferred from another activity to the CPA and no existing equipment is going to be transferred to another activity.	The [add CPA title] CPA does not employ any energy generating equipment that has been transferred from another activity	[Add source which could be used to verify the CPA justification, if available]

[3] World Commission on Dams (2000). Dams and development: a new framework for decision making. Earthscan Publications. London, U.K. http://www.unep.org/dams/WCD/report/WCD_DAMS%20report.pdf (accessed October 18, 2011)

	[Add further information if necessary]	
2. Eligibility as microscale project activity		
2.1. The CPA has installed capacity of <=5MW, in conjunction with the "General Guidelines to SSC CDM methodologies" (ver. 19).	The [add CPA title] CPA installs [Add CPA specific information], which is under the capacity threshold for microscale eligibility.	[Add source which could be used to verify the CPA justification, if available]
2.2. The project activities should remain under the threshold of 5MW each year of the crediting period. In cases where *ex ante* projected emissions reductions show an increase during the crediting period, project activities that go beyond the microscale limits in any year of the crediting period are not eligible.	The [add CPA title] CPA will not have the right to go over the 5MW during the whole duration of the crediting period. [Add CPA specific information]	[[Add source which could be used to verify the CPA justification, if available]
2.3. If multiple sites are included under a single CPA, the aggregate capacity of the CPA is under the 5MW constrain.	[Add CPA specific information]	[Add source which could be used to verify the CPA justification, if available]
3. Location, boundary, and additionality		
3.1 The CPA should be consistent with the geographical boundary set in section A.4.1.2 of the PoA-DD.	The [add CPA title] CPA is situated in the Republic of Macedonia, which is the geographical area covered by the PoA.	Geographical coordinates of [add CPA title] CPA.
3.2 The CPA should be able to demonstrate its additionality as described in Section E.5.1 of the PoA-DD.	The [add CPA title] CPA uses [write approach A or B], and therefore is additional in accordance with	[Add source which could be used to verify the CPA justification, if available]

	"Guidelines for demonstrating additionality of microscale project activities" (ver. 04)	
4. Methodological fit		
The CPA should meet all applicability conditions as listed in the most recent version of methodology AMS-I.D and explained in section E.2 of PoA-DD.	As elaborated in section E.S. of the PoA-DD, in accordance with methodology AMS-I.D (ver. 17), the relevant applicability conditions are that "*The plants should use hydro power to generate electricity and supply it to the Macedonian power grid.*" The [add CPA title] CPA meets the applicability conditions of AMS-I.D. – it uses hydropower to generate electricity and supply it to the Macedonian grid.	[Add source which could be used to verify the CPA justification, if available]
5. Starting date		
The starting date of the CPA should be after the date of commencement of the PoA validation, i.e. the date when the PoA-DD is first published for global stakeholder consultation (in line with the CDM Glossary of Terms, Version 07). The owner of the CPA should be able to confirm the start date of the project activity through documentary evidence.	The starting date of the [add CPA title] CPA is [add date] after the date of commencement of the PoA validation.	[Add source which could be used to verify the CPA justification, if available]
6. Debundling Check		
The CPA should be able to demonstrate that it is not a debundled component of a larger project, as set out in section A.4.4.1 of the PoA-DD.	The [add CPA title] CPA is not a de-bundled component of a large scale project activity, as demonstrated in section A.4.6. of	[Add source which could be used to verify the CPA justification, if available]

	this CPA-DD. [Add further information if necessary]	
7. Double Counting Check		
The CPA should be able to demonstrate that it does not allow double counting, as set out in section A.4.4.1 of the PoA-DD.	The double counting checks have been performed for the [add CPA title] CPA as described in section A.4.4.1 of the PoA-DD. [Add further information if necessary]	[Add source which could be used to verify the CPA justification, if available]
8. Public funding		
The CPA should indicate if the project received any public funding from Annex I Parties. In case funding from Annex I Parties was received, affirmation that this funding does not result in a diversion of official development assistance should be given.	The [add CPA title] CPA does not result in diversion of official development assistance. [Add further information if necessary]	[Add source which could be used to verify the CPA justification, if available]
9. **Environmental impact assessment**		
The CPA should provide a state approved environmental impact assessment (EIA) or state issued letter of EIA exemption.	The [add CPA title] CPA has submitted a state approved EIA dated [add date].	EIA study
10. Stakeholder consultations		
The CPA should be able to provide relevant evidence that comments from local stakeholders were invited and compiled.	The [add CPA title] CPA has invited and compiled comments from local stakeholders. [Add further information if necessary]	Protocol (s) of meeting(s) with local stakeholders.
11. Management and legal matters		
11.1. The CPA must comply with all testing and certification requirements for hydropower technologies in the host country of Macedonia.	The [add CPA title] CPA is in compliance with all relevant host	

	country laws, regulations and industry standards. [Add further information if necessary]	
11.2. The CPA must agree to comply with the prescriptions of the operational and management procedures set out in section A.4.4.1 of the PoA-DD.	The [add CPA title] CPA contractually agreed to comply with the prescriptions of the PoA operational and management procedures. [Add further information if necessary]	
11.3. The CPA must agree to adhere to the monitoring plan (section A.4.4.2 of the PoA-DD) and collect data as specified by the parameters listed in sections E.6.3 and E.7.1 of the PoA-DD.	The [add CPA title] CPA contractually agreed to comply with the prescriptions of the PoA monitoring plan. [Add further information if necessary]	
11.4. The CPA should be implemented as a voluntary initiative and not due to mandatory policies or regulations.	The [add CPA title] CPA is implemented as a voluntary initiative by the CPA implementing entity. [Add further information if necessary]	
11.5. The CPA should enter in a contractual agreement with the CME to regulate the ownership and transfer of the rights to the emission reductions.	The [add CPA title] CPA has entered into contractual agreement with the CME on [enter date of contract].	

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

Following the procedure outlined in sections A.4.4.1, E.5.1, and E.5.2. of the PoA-DD, additionality assessment for [approach A or B chosen] is assessed according to the following criteria (Table 6):

Table 6: Additionality assessment for Approach A

Key criteria for assessing the additionality of the CPA using Approach A:	**Key data needed for assessing the additionality argument**
• The installed capacity of the potential CPA is <=5 MW (i.e., does it fulfil PoA eligibility criteria # 1.1 fulfilled)	[CPA name] CPA fulfils the technical specifications for <=5 MW and fulfils eligibility criteria # 1.1
• The technology used in the potential CPA falsl into the list of approved technology types (i.e., does it fulfil PoA eligibility criteria #1.2 fulfilled)	[CPA name] CPA is run-of-the river plant and fulfils eligibility criteria #1.2
• The potential CPA is located on the territory of Republic of Macedonia (i.e., does it fulfil PoA eligibility criteria # 3.1).	[CPA name] CPA is located on the territory of Macedonia and fulfils eligibility criteria #3.1

OR

Table 6: Additionality assessment for Approach B

Key criteria for assessing the additionality of the CPA using Approach B:	**Key data needed for assessing the additionality argument**
• The IRR of the project without CERs is under the chosen benchmark.	The IRR of the project [CPA name] without CERs is under the chosen benchmark. The analysis results are shown below. The key inputs and results are listed below.
• The sensitivity analysis substantiates the conclusions reached from the IRR benchmark comparison.	The sensitivity analysis substantiates the conclusions reached from the IRR benchmark comparison. Details are below.

Therefore, the [CPA name] CPA is additional in accordance with the "Guidelines for demonstrating additionality of microscale project activities", EB 68, version 04.

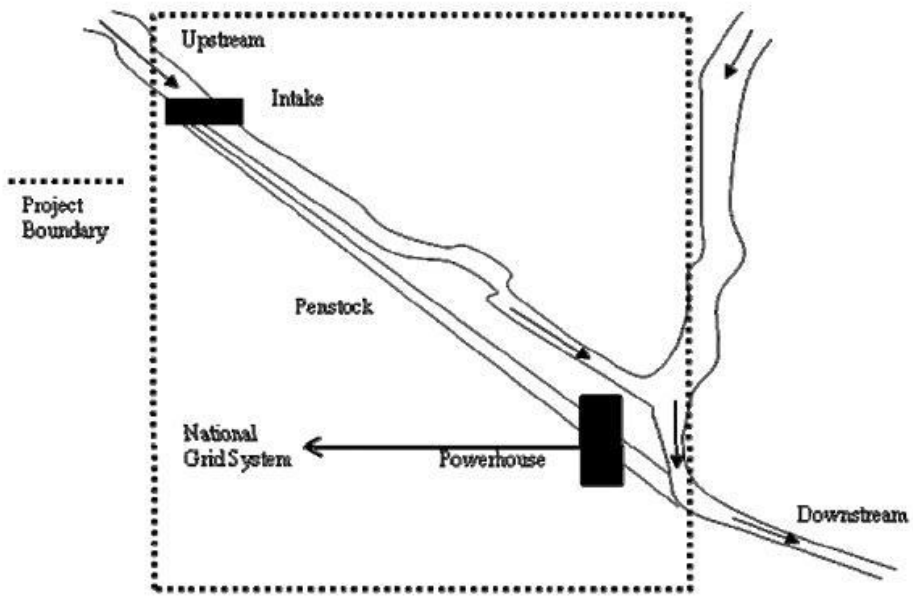
[Add relevant information as per Section E.5.2. from the PoA-DD]

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

According to version 17 of AMS-I.D, the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project

power plant is connected to. A general schematic view of the boundaries for the hydro project is shown in Figure B.3-1 below.

Figure B.3-1 Project boundaries



As demonstrated in section A.4.1.2 of this CPA-DD and as per Eligibility criteria #3 of this PoA, MAC0001-Jablanica CPA is located within the geographical boundary of the PoA, namely the sovereign borders of the Republic of Macedonia.

The project boundary will include all direct emissions related to the electricity produced by the power plants connected to the grid that will be replaced by the proposed project activity. The greenhouse gases and emission sources included or excluded from the project boundary are shown in Table 6 below.

Table 6: Breakdown of emission sources

	Source	Gas	Included?	Justification/Explanation
Baseline	CO_2 emission from electricity generation in fossil fuel fired power plants that is displaced due to the project activity	CO_2	Yes	Main emission source
		CH_4	No	Excluded for simplification. This is conservative.
		N_2O	No	Excluded for simplification. This is conservative.
Project Activities	For hydro power plants, emissions of CH_4 from the Reservoir	CO_2	No	Excluded as there are no reservoirs.

		CH_4	No	
		N_2O	No	

B.5. Emission reductions:

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

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*
Source of data used:	Annual reports of the Energy Regulatory Commission of the Republic of Macedonia (2008, 2009, 2010)
Value applied:	See Annex 3 of the POA-DD
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data is provided by a state official source and can be considered reliable.
Any comment:	The applied parameters are from publicly available sources.

Data / Parameter:	**$NCV_{i,y}$**
Data unit:	kgCO2/GJ
Description:	Net calorific value of fuel oil
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, volume 2, chapter 1 (table 1.2, page 1.18) [4]
Value applied:	39.800 GJ/t for fuel oil
Justification of the choice of data or description of measurement methods and procedures actually applied :	The IPCC Guidelines are a reliable source for this value. The lower IPCC value of the uncertainty at a 95% confidence interval has been chosen, in accordance with the "Tool to calculate the emission factor for an electricity system" (Version 02.1.1).
Any comment:	

Data / Parameter:	**$NCV_{i,y}$**
Data unit:	GJ/ th m^3
Description:	Net calorific value of natural gas
Source of data used:	PDD of the registered Macedonian CDM project 'Skopje cogeneration project',

[4] Available at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html (accessed October 18, 2011)

	p.35[5]
Value applied:	36 GJ/th m^3
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

Data / Parameter:	**$NCV_{m,lignite,y}$**
Data unit:	GJ/t
Description:	Net calorific value of lignite used in plant *m* during year *y*
Source of data used:	ELEM annual reports (2008, 2009, 2010)
Value applied:	For Bitola and Oslomey:

	2008	**2009**	**2010**
NCV of lignite in Bitola	8.079	7.290	7.448
NCV of lignite in Oslomey	7.600	6.670	6.661

Justification of the choice of data or description of measurement methods and procedures actually applied :	Since ELEM produces lignite for the own power plants, data from ELEM annual reports can be considered reliable. Moreover, these values are more conservative than default value of 2006 IPCC Guidelines for National Greenhouse Gas Inventories ($NCV_{lignite}$ = 11.900 GJ/t)[6]
Any comment:	
Data / Parameter:	**$EF_{CO2,i,y}$**
Data unit:	kgCO2/GJ
Description:	Average emission factor for fossil fuel i in year y
Source of data used:	Preparation of the GHG Inventory for the Second National Communication under UNFCCC, 2010. Final Version of the National Inventory Summary Report, p. 8, Table 1.2
Value applied:	109.237 kgCO2/GJ for lignite; 76.593 kgCO2/GJ for fuel oil
Justification of the choice of data or description of measurement methods and procedures actually applied :	These are state-specific values.
Any comment:	

Data / Parameter:	**$EF_{CO2,i,y}$**

[5] Available at: http://cdm.unfccc.int/Projects/DB/SGS-UKL1237296816.11/view (accessed October 18, 2011)

[6] 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Chapter 1, Table 1.2, page 1.18 http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf

Data unit:	$kgCO_2/GJ$
Description:	Average emission factor for fossil fuel *i* in year *y*
Source of data used:	2006 IPCC Guidelines for National GHG Inventories default values, Volume2, Table 2.2
Value applied:	54.300 $kgCO_2/GJ$ for natural gas
Justification of the choice of data or description of measurement methods and procedures actually applied :	The IPCC Guidelines are a reliable source for this value. The lower IPCC value of the uncertainty at a 95% confidence interval has been chosen, in accordance with the "Tool to calculate the emission factor for an electricity system" (Version 02.1.1).
Any comment:	

Data / Parameter:	$\eta_{m,,y}$
Data unit:	%
Description:	Coefficient of energy efficiency of power unit *m* in year *y*
Source of data used:	"Tool to calculate the emission factor for an electricity system" ver. 2.2.1, Annex 1, p.28
Value applied:	Default value of *37.5%* for Negotino TT, 37% fir Bitola, 60% for TE-TO
Justification of the choice of data or description of measurement methods and procedures actually applied :	The most appropriate default value are the one from Annex 1 of the "Tool to calculate the emission factor for an electricity system" (latest ver. is 2.2.1).
Any comment:	

Data / Parameter:	$FC_{i,m,y}$
Data unit:	t
Description:	Fuel consumption for each power plant
Source of data used:	Energy Regulatory Commission of Macedonia
Value applied:	See Annex 3 of the PoA-DD
Justification of the choice of data or description of measurement methods and procedures actually applied :	Statistics provided by the Energy Regulatory Commission of Macedonia.
Any comment:	
Data / Parameter:	EFgrid,OM,,simple, y
Data unit:	tCO2 /MWh
Description:	Operating Margin
Source of data used:	Own calculation based on official data published on the website of the Energy Regulatory Commission of Macedonia
Value applied:	0.833

Justification of the choice of data or description of measurement methods and procedures actually applied :	The Operating Margin (OM) parametric value is calculated according to the "Tool to calculate the emission factor for an electricity system" (latest ver. is 2.2.1). The electricity generation data for 2008-2010 was used.
Any comment:	

Data / Parameter:	**$EF_{grid,BM,y}$**
Data unit:	tCO_2/MWh
Description:	Build Margin
Source of data used:	Own calculation based on official data published on the website of the Energy Regulatory Commission of Macedonia
Value applied:	1.024
Justification of the choice of data or description of measurement methods and procedures actually applied :	The Build Margin (BM) parametric value is calculated according to the "Tool to calculate the emission factor for an electricity system" (latest ver. is 2.2.1). The electricity generation data for 2008-2010 was used.
Any comment:	

Data / Parameter:	**$EF_{grid,CM,y}$**
Data unit:	tCO_2/MWh
Description:	Combined Margin, expressing the emissions factor for the electricity displaced in the grid
Source of data used:	Own calculation based on official data published on the website of the Energy Regulatory Commission of Macedonia
Value applied:	0.953
Justification of the choice of data or description of measurement methods and procedures actually applied :	The Combined Margin (CM) parametric value is calculated according to the "Tool to calculate the emission factor for an electricity system" (latest ver. is 2.2.1): calculating the OM and BM values using the electricity generation data for 2008-2010, included in Annex 3 of the POA-DD.
Any comment:	

Data / Parameter:	**Electricity imports**			
Data unit:	GWh			
Description:	Electricity transfers from connected electricity systems			
Source of data used:	The Energy Regulatory Commission of the Republic of Macedonia			
Value applied:	Year/value	2008	2009	2010
	Import	2758	1716	1602
Justification of the choice of data or	The data is taken from an official source and can be considered reliable.			

description of measurement methods and procedures actually applied :	

Data / Parameter:	**Py**
Data unit:	MW
Description:	Installed power capacity
Source of data used:	Plant design documents
Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied :	The value reflects the capacity to be installed at the power plant according to the plant design parameters.
Any comment:	The final installed capacity might differ from the value applied in the CPA-DD, as the technology provider might not have been chosen at the time of preparation of the CPA-DD.

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

Baseline emissions

As per section E.6.2 of the PoA-DD, the baseline emissions of the [add CPA title] CPA are calculated as follows:

$BE_y = EG_{CPA,y} * EF_{CO2,Grid,y} = EG_{CPA,y} * 0.953$

Where:

BEy = Baseline Emissions in year y (tCO2e)
EGBL,y = Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
0.953 = CO2 emission factor of the grid in year y (tCO2/MWh). The steps to calculate a grid emission factor are included in Annex to the PoA-DD.

The net electricity supplied to the grid by the project activity per annum ($EG_{BL,y}$) is estimated to be [] MWh.

The baseline emissions are therefore calculated to be:

BE_y = [add estimated net electricity generation delivered to the grid annually] * 0.953 = [add result] tCO_2e/year

Emission reductions

As per section E.6.2 of the PoA-DD, the emission reductions of the [add CPA title] CPA are calculated as follows:

$ER_y = BE_y – PE_y – L_y = BE_y – 0 -0 = BE_y$

Where:

ER_y	Emission reductions in year y (tCO_2e/y)
BE_y	Baseline emissions in year y (tCO_2e/y)
PE_y	Project emissions in year y (tCO_2e/y)

ER_y = [add baseline emissions] tCO_2e/y

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

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Year	Estimation of project activity emissions (tCO_2e)	Estimation of baseline emissions (tCO_2e)	Estimation of leakage (tCO_2e)	Estimation of overall emission reductions (tCO_2e)
Year 1	[]	[]	-	[]
Year 2	[]	[]	-	[]
Year 3	[]	[]	-	[]
Year 4	[]	[]	-	[]
Year 5	[]	[]	-	[]
Year 6	[]	[]	-	[]
Year 7	[]	[]	-	[]
[Add Year 8 if appropriate]	[]	[]	-	[]
[Add Year 9 if appropriate]	[]	[]	-	[]
[Add Year 10 if appropriate]	[]	[]	-	[]
Total (tCO_2e)	[]	[]	-	[]

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

B.6.1. Description of the monitoring plan:

Data / Parameter:	**EGy**
Data unit:	MWh
Description:	Electricity generated and delivered by the CPA to the Macedonian grid
Source of data to be used:	Directly measured by power meters
Value of data applied for the purpose of calculating expected	[add amount of generation] MWh

emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	[add description of the measurement methods and procedures]
QA/QC procedures to be applied:	QA: The equipment would be subject to calibration in compliance with the manufacture's specifications and /or grid operator. QC: There will be strict compliance with the maintenance schedule recommended by the technology provider and/or grid operator.
Any comment:	-

The CME will work with the CPA implementing entity to design and implement the following monitoring plan.

1. Monitoring plan objective and organisation

The CPA implementing entity is responsible for the implementation and management of the monitoring plan. The CME will qualify the monitoring plan and assist with its implementation. The CPA implementing entity will submit all relevant data, i.e. invoices for purchased and sold electricity, to the CME that is required for the periodic verification of emission reductions.
.

2. Monitoring data

The CPA implementing entity will monitor the following data parameters, as detailed in section E.7.1. of the PoA-DD:

- Net electricity generation supplied to the grid by the hydro power plant

The electricity generation bought and supplied shall be recorded with a monthly frequency. Metering data will be cross-referenced with invoice data, where possible, for electricity generation purchases and sales.

All data will be compiled and archived by the CPA implementing entity in both hard copy and electronic format, and will be submitted to the CME both periodically and upon request.

Monitoring data will subsequently be submitted by the CME to the DOE for periodic verifications of emission reductions.

The CME will electronically store all monitoring data until 2 years after the end of the crediting period outlined in section A.4.2. of the PoA-DD.

3. Quality assurance and quality control (QA/QC)

The CPA implementing entity is responsible for the maintenance and calibration of all metering devices to the set industry standard in the Republic of Macedonia. The CME will request from the implementing

entity official certification that all metering devices are compliant with the set industry standard, as this could be presented to the DOE.

All metering devices will be recalibrated and inspected periodically by qualified personnel again in accordance with the set industry standard. This will happen at least once every 3 years.

[Add any additional information on monitoring plan, if necessary]

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.

As per section C.1 of the PoA-DD, environmental analysis is carried at the CPA level to allow for local conditions which affect each CPA.

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

[Add description of environmental impacts]

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

All existing facilities in Macedonia possessing sources of environmental pollution must prepare and submit to the Ministry of Environment and Spatial Planning various ecological and technological studies, including analyses of the sources of pollution and measures for to reduce pollution to levels below "maximum permissible concentration" (MPC).

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.

Information on local stakeholder comments will be provided at CPA level. That way the local stakeholder consultations will take into consideration to differences of circumstances and opinions of the communities in which each CPA is located.

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

[Add information on invitation procedure for local stakeholder comments]

D.3. Summary of the comments received:

[Add details of any comment received]

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

[Add details on how due account was taken for any comments received]

Annex 1

CONTACT INFORMATION ON ENTITY/INDIVIDUAL RESPONSIBLE FOR THE SMALL-SCALE CPA

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

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

[Add information if necessary]

Annex 3

BASELINE INFORMATION

[Add information if necessary]

Annex 4

MONITORING INFORMATION

[Add additional monitoring information if necessary]