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-SSC-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-SSC-PoA-DD, the PoA specific CDM-SSC-CPA-DD, as well as one of such CDM-SSC-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:

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Name of the CPA
Version: 02
Date: 03/11/2012

version	date	Comments
01	23/03/2012	Global Stakeholder Consultation
02	03/11/2012	Revised according to DOE's finding

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

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XX CPA (hereinafter referred to as "the proposed CPA") is located in XX District of XX City, XX Province, People's Republic of China. The proposed CPA is developed, financed and managed by XX Company (hereinafter referred to as "the CPA operator").

The proposed CPA will generate electricity to the grid by using renewable solar energy. The installed capacity of the power plant is XX MWp, which employ XX type solar cells. The electricity generated by the cells will be connected to inverters first, and then transmitted to XX Power Grid (XXGrid) after the boost transformer. The plant load factor of the proposed CPA is XX.

The CPA will reduce greenhouse gas emissions by generating electricity to the XXGrid through using renewable solar energy and replacing equivalent electricity generated by fossil fuel fired power plants connected to the XXGrid. The expected annual net electricity delivered to the grid by the proposed CPA is XX,XXX MWh and the estimated annual emission reductions are XX,XXX tCO_2e during the first period of 7*3 renewable credit period.

Prior to the implementation of the proposed CPA the electricity generated by the CPA would have been generated by operation of existing power plants and new addition of power capacity connected to the XXGrid.

Contribution of the CPA to sustainable development

The proposed CPA contributes to sustainable development in the following ways:

- The CPA will displace the power generation of fossil fuel power plants, reducing CO_2, SO_x and NO_x emissions significantly, thus mitigating the air pollution and its adverse impacts on human health.
- Improvement of the fossil fuel dominated fuel mix of the electricity generation in the power grid by providing clean and renewable energy source, and help to energy supply security.
- Promote application and diffusion of the innovative/creative solar PV technology in China through the demonstrative practice of the CPA.
- Create employment opportunities for the local community during the construction and operation period.

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

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The CPA implementer/operator is XXXXXXX. The business scope of the company includes XX etc.

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

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

A.4.1.1. Host Party:

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People's Republic of China.

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

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The CPA is located in XX District of XX City, XX Province/Autonomous Region, China. The CPA has geographical coordinates with east longitude of XX°XX′XX″~XX°XX′XX″ and north latitude of XX°XX′XX″~XX°XX′XX″. The location of the CPA is shown in Figure 1.

Figure 1 Geographical boundary of the CPA

The contact detail of the CPA operator is shown in Table 1:

Table 1 The contact details of the CPA operator

Name of the CPA operator	
Address	
E-mail	
TEL	
FAX	

Technical description of the CPA

The photovoltaic generating plant consists of PV array, inverter, boost transformer and electricity grid connecting system.

The PV array inverts a photovoltaic power to a direct current electricity power. The inverter system inverts a direct current (DC) to an alternating current (AC). The boost transformer sends a generated voltage to the grid (XX Grid). The schematic diagram of PV station is showed in Figure 2.

Figure 2 Schematic Diagram of PV Station

The key technology parameters of the CPA are as follows:

1. Modules
   The CPA is solar photovoltaic based power station with full capacity of XX MWp. Solar modules is the core component of the CPA, whose function is to convert solar energy into electricity energy through direct current. The CPA consists of XX,XXX pieces of XX MWp XX solar cells, which are supplied with total XX MWp output power. The inclination of all modules will be set to XX°. The key technical parameters of XX solar cells are listed in Table 2:

Table 2 The key technology parameters of XX solar cells

Parameters	Unit	Data	Source
Model	-		
Maximum Output	Wp		
Maximum Voltage	V		
Maximum Current	A		
Efficiency	%		
Operation period	y		

2. Inverters
   Inverter is an electrical device that converts direct current (DC) to alternating current (AC). XX sets of inverters with capacity XX kW will be installed in the proposed CPA. The parameters of inverter are listed in Table 3:

Table 3 The key technology parameters of Inverters

Parameters	Unit	Data	Source
Model	-		
Rated Output Power	kW		
Rated Output Current	A		
Max efficiency	%		
Rated Output Voltage	V		
Rated Frequency	Hz		
Operation period	y		

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

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

>>
dd/mm/yyyy, which is the earliest of the date on which the implementation or construction or real action of the CPA begins.

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

>>
XX years

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

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Renewable Crediting period

A.4.3.1. Starting date of the crediting period:

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dd/mm/yyyy or the date of inclusion of the CPA to the PoA, whichever is 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:

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The annual estimation of emission reductions is calculated based on the equations listed in the CDM-SSC-PoA-DD of the Grid Connect SSC Solar PV Power Generation Plant Programme.

The annual estimation of emission reductions are XX,XXX tCO_2e. Over the chosen crediting period of 7years, the total emission reductions are therefore expected to amount to XXX,XXX tCO_2e.

A breakdown of estimated annual CERs is given in Table 4

Table 4 Estimated annual CERs from the CPA

Year	Annual estimation of emission reductions (tCO_2e)
20XX	XX,XXX
20XX	XX,XXX
20XX	XX,XXX
20XX	XX,XXX
20XX	XX,XXX
20XX	XX,XXX
20XX	XX,XXX
20XX	XX,XXX
Total emission reductions (tCO_2e)	XXX,XXX
Total number of crediting years	7

Annual average over the crediting years of estimated reductions (tCO_2e)	XX,XXX

A.4.5. Public funding of the CPA:

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No public funding from Parties included in Annex I countries is involved.

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

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According to Guidelines on the demonstration of additionality of small-scale project activities (Version 09), a proposed small-scale project activity shall be deemed to be a de-bundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity:

(a) With the same project participants;
(b) In the same project category and technology/measure; and
(c) Registered within the previous 2 years; and
(d) Whose project boundary is within 1km of the project boundary of the proposed small-scale activity at the closest point.

The proposed small-scale CPA doesn't meet the condition XX, with the reason of XX. Therefore, the CPA is not a de-bundled component.

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

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According to the project information database set up by the CME, the CME confirms that:

(i) All solar PV power plant to be newly installed under a CPA is not and will not be part of another CDM project or PoA;
(ii) All CPA operators involved in the PoA are aware and agree with the inclusion of a CPA to the proposed PoA.
(iii) The proposed CPA doesn't registered as a single CDM project and will not be a part of another registered PoA;
(iv) The project information including name, geographic coordinates, technology, equipment and end-user of the proposed CPA can be uniquely identified.

To ensure the above information, CME has searched in UNFCCC website to check the information of the proposed CPA against the information of other similar CDM project activities to ensure that no double accounting of emission reductions occurs.

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:

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

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The proposed CPA complies with all of the eligibility criteria that are described in A.4.2.2. of CDM-SSC-PoA-DD. The justifications are given as follows:

1) *The geographic boundary of a CPA lies within the geographic boundary set in the PoA, including 30 provinces in China, and the CPA operator belongs to power generation companies;*

   The geographic boundary of the proposed CPA is a photovoltaic power plant lies within XX Province/Autonomous Region. Hence, the geographical boundary of the CPA lies within the geographical boundary of the proposed PoA. The CPA operator is XX Company, which is a power generation company.

2) *According to the project information database set up by the CME, the CME will confirm that:*
   (i) All solar PV power plant to be newly installed under a CPA is not and will not be part of another CDM project or PoA;
   (ii) All CPA operators involved in the PoA are aware and agree with the inclusion of a CPA to the proposed PoA.
   (iii) The proposed CPA doesn't registered as a single CDM project and will not be a part of another registered PoA;
   (iv) The project information including name, geographic coordinates, technology, equipment and end-user of the proposed CPA can be uniquely identified.

   The CME has already confirmed the information and the CPA operator has agreed with the inclusion of the proposed CPA to the PoA with a written statement..

   The proposed CPA operator has already submitted the written statements for above confirmation.

3) *Only solar PV power generation technology is involved in the CPA with no solar thermal electricity generation technology included. Such technologies may include, but are not limited to single crystal silicon, polycrystalline silicon and thin film technologies;*

   Only solar PV power generation technology is involved and no solar thermal process is included in the proposed CPA.

4) *No equipment will be transferred from another project activities, and no technology transfer is involved in the CPA;*

   The equipment involved in the proposed CPA is not transferred from another project activity. Domestic technologies are adopted in the proposed CPA, not referring to technology transfer.

5) *The start date (defined in the Glossary of CDM terms) of the CPA is not prior to the PoA GSC date. The start date of each CPA is determined as the earliest date at which either the implementation or construction or real action of a project activity begins. To determine the project starting date, the documents that will be reviewed includes the Equipment Purchase Contract, the Construction Contract, and the Construction Permit etc;*

The start date of the proposed CPA is XX/XX/XXXX when the XX is signed, which is later than the PoA GSC date 30/03/2011

6) A CPA should meet the applicability criteria of the Approved CDM Methodology AMS-I.D.(Version XX);

AMS-I.D. (Version XX) defines the applicability of this methodology. The CPA meets all applicable requirements of the methodology AMS-I.D. as is shown in Table 5:

Table 5 Comparison of extraction components of the CPA with applicability of AMS-I.D.

As per the methodology	As per the CPA
This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass that (a) supplying electricity to a national or a regional grid; or (b) supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	The proposed CPA comprises renewable energy generation units using solar photovoltaic power generation technology and will supply electricity to XX Grid.
This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	The proposed CPA is a green field solar PV power generation project, which supplies electricity generated to XX Grid.
Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: ☐☐The project activity is implemented in an existing reservoir with no change in the volume of reservoir; ☐☐The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4W/m2; ☐☐The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m2.	Not applicable

If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	The generation unit of the proposed CPA is a new solar PV power plant with capacity of no more than 15MW.
Combined heat and power (co-generation) systems are not eligible under this category.	The proposed CPA is a solar PV based power plant only, and no heat will be generated in this system.
In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	The proposed CPA is a green field solar PV power generation project, which doesn't involve the addition of renewable energy generation units at an existing renewable power generation facility.
In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	The proposed CPA is a green field solar PV power generation project, which doesn't involve retrofitting or replacing an existing facility for renewable energy generation.

It can be concluded from the above analysis that the Approved CDM Methodology AMS-I.D. (Version XX) is applicable to the CPA.

7) A CPA meets following criteria for assessing additionality according to Guidelines on the demonstration of additionality of small-scale project activities (Version 09).

(i) Solar technologies;

(ii) the installed capacity of no more than 15MW;

The CPA adopts XX technologies with the installed capacity of XXMW which will not exceed the limit of 15 MW. According to *Guidelines on the demonstration of additionality of small-scale project activities (Version 09)*, the CPA under the proposed PoA is additional.

8) The length of the proposed PoA does not exceed 28 years, as well as the CPA crediting period will not exceed the PoA end date;

The length of the proposed PoA is 28 years. Renewable crediting period (7yrs×3) is adopted by the proposed CPA. The starting date of the crediting period is XX/XX/XXXX and the ending date is XX/XX/XXXX, which will not exceed the PoA end date.

9) Local stakeholder consultations and environmental impact analysis will be carried out at the CPA level, both of which will be conducted by the operator of each CPA prior to the start date of the CPA and can be clearly identified according to the documentary evidence;

Environmental impact analysis and local stakeholder consultations were carried out in XX/XXXX and XX/XXXX, respectively, both of which were conducted prior to the start date of the proposed CPA. The Environmental Impact Assessment (EIA) report was carry out by XX and approved by XX.

The local stakeholder consultation was carried out through XX by CPA operator to collect the comments of local stakeholders. More details have been specified in the section D of CPA-DD.

10) All CPAs will not involve public funding from Annex I Parties.

The CPA does not involve any official development assistant nor result in a diversion of official development assistance.

11) All CPA operators involved in the PoA should confirm in a written statement that the proposed CPA complies with the debundling check as per "Guidelines on assessment of de-bundling for SSC project activities". The CME will also verify if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity:

- *With the same project participants;*
- *In the same project category and technology/measure; and*
- *Registered within the previous 2 years; and*
- *Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point.*

The CPA operator has confirmed in a written statement that the proposed CPA is not and will not be part of another CDM project or PoA. The CME, Union Power Carbon Asset Management (Beijing) Co., Ltd, will verify the above information to confirm no debundling will occur. More details have been specified in section A.4.6 of the CPA DD.

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

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Time schedule of the CPA

The time line of the proposed CPA is listed in Table 6:

Table 6 The time schedule of the CPA

The additionality for the proposed CPA has been demonstrated as per section E.5. of CDM-SSC-PoA-DD, stipulated in **"Guidelines on the demonstration of additionality of small-scale project activities", version 09, EB 68 annex 27".**

As per the Guidelines on the demonstration of additionality of small-scale project activities, grid-connected Solar technologies (photovoltaic and solar thermal electricity generation) with the installed capacity up to 15MW are automatically defined as additional, without further documentation of barriers.

Since the proposed CPA is solar photovoltaic grid connected renewable electricity generation technologies with the installed capacity of XX MW, which satisfies the condition of Guidelines on the demonstration of additionality of small-scale project activities, the CPA is additional.

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.

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The boundary of the CPA includes the Photovoltaic power plants and the power plants/units physically connected to XXGrid. In Table 7 below, all sources of the baseline and the project activity are listed. Based on the conditions required in the methodology, the overview on emissions sources including in or

excluded from the project boundary is presented in Table 7 and Figure 3.

Table 7 Overview on emissions sources included in or excluded from the project boundary

	Source	Gas	Included?	Justification/Explanation
Baseline	CO_2 emissions from electricity generation of XX Power Grid that are displaced due to the CPA.	CO_2	Yes	Main emission sources.
		CH_4	No	Minor emission source.
		N_2O	No	Minor emission source.
Project activity	CO_2 emissions of the CPA	CO_2	No	Minor emission source
		CH_4	No	Minor emission source
		N_2O	No	Minor emission source

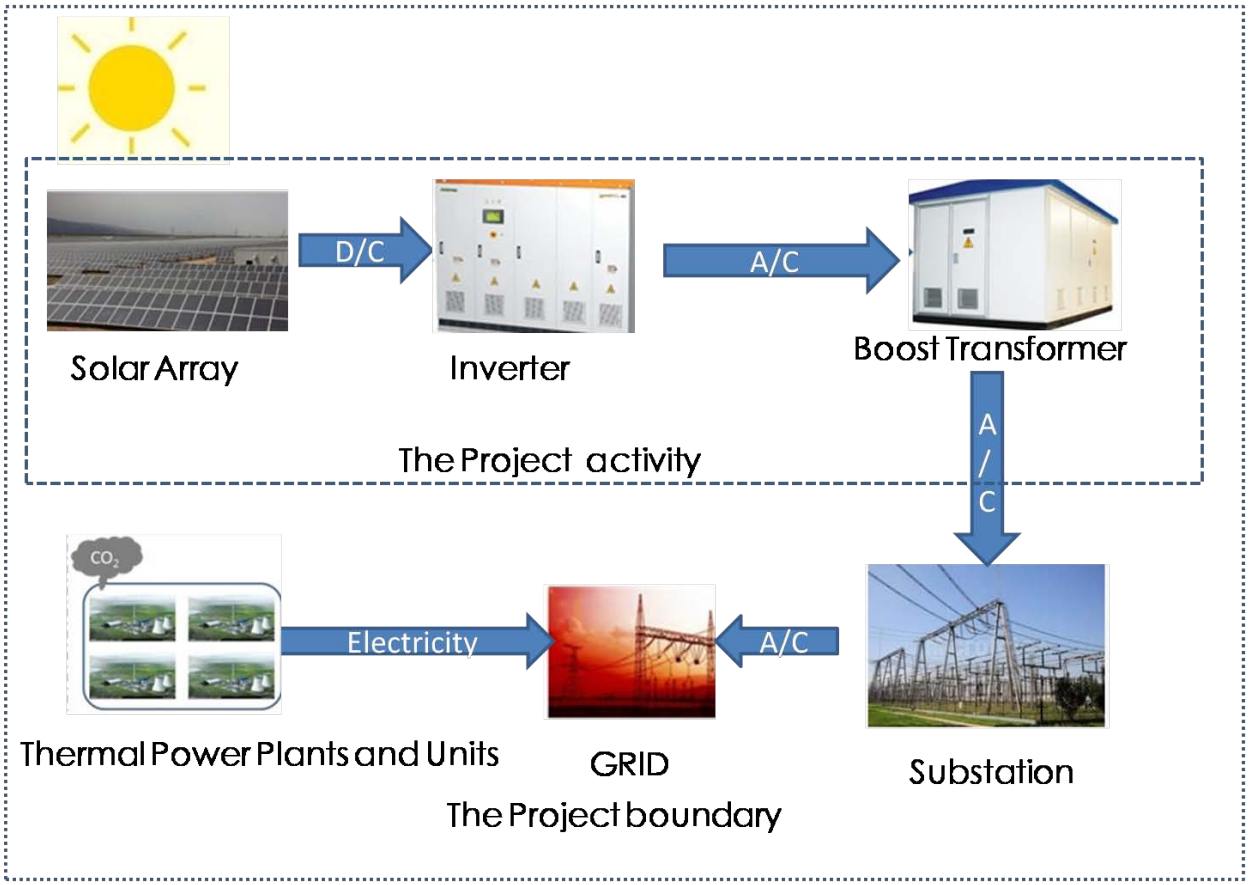

Figure 3 The project boundary of the proposed CPA

The geographical boundary of the proposed PoA includes the provinces that are controlled by State Grid or the China Southern Power grid, and the geographical site of the CPA is located in XX as indicated in Figure 1, A.4.1.2. Thus the CPA is located within the geographical boundary of the proposed PoA.

B.5. Emission reductions:

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

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Data and parameters that are to be reported in CDM-SSC-CPA-DD are defined in the CDM-SSC-PoA-DD as follows;

Data / Parameter:	$EG_{i,y}$
Data unit:	MWh
Description:	Net electricity supplied to the grid by power plant *i* in year *y*
Source of data used:	*China Electric Power Yearbook 20XX/20XX/20XX*
Value applied:	Please refer to Annex 3 for details
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data obtained from *China Electric Power Yearbook* issued by authorized entity in China are reliable.
Any comment:	-

Data / Parameter:	$EF_{OM,y}$
Data unit:	tCO_2e/MWh
Description:	Operating margin emission factor of the XX Power Grid concerned by the CPA
Source of data used:	"*2011 Baseline Emission Factors for Regional Power Grids in China*" issued by China's DNA
Value applied:	X.XXXX
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data obtained from *20XX Baseline Emission Factors for Regional Power Grids in China* made publicly available by China's DNA are reliable.
Any comment:	-

Data / Parameter:	$EF_{BM,y}$
Data unit:	tCO_2e/MWh
Description:	Build margin emission factor of the XX Power Grid concerned by the CPA
Source of data used:	"*2011 Baseline Emission Factors for Regional Power Grids in China*" issued by China's DNA
Value applied:	X.XXXX
Justification of the choice of data or description of measurement methods	The data obtained from *20XX Baseline Emission Factors for Regional Power Grids in China* made publicly available by China's DNA are reliable.

and procedures actually applied :	
Any comment:	-

Data / Parameter:	$EF_{CO2,grid,y}$
Data unit:	tCO_2/MWh
Description:	CO_2 emission factor of the grid in year *y*
Source of data used:	The calculation is conducted based on data calculated by China DNA
Value applied:	X.XXXX
Justification of the choice of data or description of measurement methods and procedures actually applied :	China Official Data of *National Bureau of Statistics of China* and *National Development and Reform Commission*
Any comment:	The calculation was conducted based on data calculated by the Office of National Coordination Committee on Climate Change.

Data / Parameter:	$EF_{CO2,i,y}$
Data unit:	kgC/GJ / tCO_2/mass
Description:	CO_2 emission factor of fossil fuel type *i* in year *y*
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories" Volume2 Energy, CHAPTER 1, P1.21, Table 1-3 and P1.23, Table 1-4.
Value applied:	Please refer to Annex 3 for details
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data obtained from *2006 IPCC Guideline for National Greenhouse Gas Inventories* are reliable.
Any comment:	-

Data / Parameter:	$FC_{i,y}$
Data unit:	mass or volume unit
Description:	Amount of fossil fuel type *i* consumed in the project electricity system in year *y*
Source of data used:	*China Energy Statistical Yearbook 2008/2009/2010*
Value applied:	Please refer to Annex 3 for details
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data obtained from *China Energy Statistical Yearbook* issued by authorized entity in China are reliable.
Any comment:	-

Data / Parameter:	$NCV_{i,y}$
Data unit:	kJ/kg
Description:	Net calorific value (energy content) of fossil fuel type *i* in year *y*
Source of data used:	*China Energy Statistical Yearbook 2008/2009/2010*
Value applied:	Please refer to Annex 3 for details
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data obtained from *China Energy Statistical Yearbook* issued by authorized entity in China are reliable.
Any comment:	-

Data / Parameter:	$OXID_y$
Data unit:	%
Description:	Oxidation rate of the fuel i
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories
Value applied:	Please refer to Annex 3 for details
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data obtained from *2006 IPCC Guideline for National Greenhouse Gas Inventories* are reliable.
Any comment:	-

Data / Parameter:	$CAP_{i,y}$
Data unit:	MW
Description:	Total capacity of fossil fuel type *i* power plant in year *y*
Source of data used:	*China Electric Power Yearbook 2008/2009/2010*
Value applied:	Please refer to Annex 3 for details
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data obtained from *China Electric Power Yearbook* issued by authorized entity in China are reliable.
Any comment:	-

Data / Parameter:	$\eta_{i,Adv}$
Data unit:	%
Description:	The power efficiency of the best technology *i* commercially available in the power plant

Source of data used:	"*2011 Baseline Emission Factors for Regional Power Grids in China*" issued by China's DNA
Value applied:	Please refer to Annex 3 for details
Justification of the choice of data or description of measurement methods and procedures actually applied :	The data obtained from *2011 Baseline Emission Factors for Regional Power Grids in China* made publicly available by China's DNA are reliable.
Any comment:	-

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

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In this section, only the input values and the calculated results will be applied. For a detailed description of the calculation methods, see section E.6. 2. of CDM-SSC-PoA-DD.

I.Calculate the project emissions

The CPA is a photovoltaic power generation project and no project emissions should be considered as per the methodology AMS-I.D., i.e. $PE_y = 0$ tCO_2e.

II. Calculate the baseline emissions

As per the methodology AMS-I.D., baseline emissions include only CO_2 emissions from electricity generation in the XX Power Grid that the proposed CPA is connected to. The baseline emissions are to be calculated as follows:

$$BE_y = EG_{BL,y} \times EF_{CO2,grid,y} \quad (1)$$

Where:

BE_y	Baseline Emissions in year y (tCO_2);
$EG_{BL,y}$	Quantity of net electricity supplied to the XXGrid as a result of the implementation of the CPA in year y (MWh);
$EF_{CO2,grid,y}$	CO_2 emission factor for XXGrid connected power generation in year y calculated using the latest version of *Tool to calculate the emission factor for an electricity system* (version XX) (tCO_2e/MWh).

$$EG_{BL,y} = EG_{facility,y} \quad (2)$$

Where:

$EG_{facility,y}$	Quantity of electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh);

Calculate the emission factor for project electricity system ($EF_{CO2,grid,y}$)

The emission factor ($EF_{CO2,grid,y}$) of the XXGrid, the relevant electricity system identified for the CPA, is determined according to following steps:

Step 1. Identify the relevant electricity system.

Step 2. Choose whether to include off-grid power plants in the project electricity system (optional).
Step 3. Select a method to determine operating margin (OM).
Step 4. Calculate the operating margin emission factor **(** $EF_{grid,OM,y}$ **)** according to the selected method.
Step 5. Identify the build margin (BM) emission factor.
Step 6. Calculate the combined margin ($EF_{grid,CM,y}$) emissions factor.

Step 1: Identify the relevant electricity systems

According to *"Tool to calculate the emission factor for an electricity system"* (version XX)[3], the data published by the DNA of China is selected. Therefore, in accordance to the latest delineation published by DNA of China on dd/mm/yy, XX Power Grid (XXGrid) is identified as the electricity system, from which would provide electricity in baseline scenario. The spatial extent of the XXGrid comprises all the power plants connected physically to the XXGrid, which includes Name of Provinces.

Step 2: Choose whether to include off-grid power plants in the project electricity system (optional)

Option I is chosen**:** Only grid power plants are included in the calculation.

Step 3: Select a method to determine the operating margin (OM)

The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the following methods:

(a) Simple OM, or
(b) Simple adjusted OM, or
(c) Dispatch data analysis OM, or
(d) Average OM.

Any of the four methods can be used, however, the simple OM method (option a) can only be used if low-cost/must-run resources constitute less than 50% of total grid generation in: 1) average of the five most recent years, or 2) based on long-term averages for hydroelectricity production. Among the total electricity generations of the XX Power Grid which the project is connected into, the amount of low-cost/must run resources accounts for about XX.XX% in 20XX, XX.XX% in 20XX, XX.XX% in 20XX, XX.XX% in 20XX and XX.XX%[4] in 20XX; all less than 50%. Thus, the method (a) Simple OM can be used to calculate the baseline emission factor of operating margin ($EF_{OM,y}$) for the project.

For the simple OM, the emissions factor is selected to be calculated using either of the data vintages between any of: *Ex ante* option or *Ex post*. For this CPA *Ex ante* option is selected, which is 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, without requirement to monitor and recalculate the emissions factor during the crediting period.

[3] http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2552.pdf

[4] China Electric Power Yearbook 20XX/20XX/20XX

Step 4: Calculate the operating margin emission factor according to the selected method

In accordance with the "*Tool to calculate the emission factor for an electricity system*" (version XX), the simple OM emission factor is calculated as the generation-weighted average CO_2 emissions per unit net electricity generation (tCO_2/MWh) of all generating power plants serving the system, not including low-cost / must-run power plants / units. It may be calculated by one of the following options:

- Based on the net electricity generation and a CO_2 emission factor of each power unit (Option A), or
- Based on data on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system (option B)

According to the "Tool", Option B can only be used if:
(a) The necessary data for Option A is not available; and
(b) Only nuclear and renewable power generation are considered as low-cost/must-run power sources and the quantity of electricity supplied to the grid by these sources is known; and
(c) Off-grid power plants are not included in the calculation

However, due to the necessary data, including the fuel consumption and net electricity generation of each power plant, is not available in China, and the other two requirements are also satisfied, Option B is adopted.

As per Option B, the simple OM emission factor is calculated based on the net electricity supplied to the grid by all power plants serving the system, not including low-cost/must-run power plants/units, and based on the fuel type(s) and total fuel consumption of the project electricity system, as follows:
Data on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system can be identified; thus, Option B is employed to calculate OM.

$$EF_{grid,OMsimple,y} = \frac{\sum_i FC_{i,y} \times NCV_{i,y} \times EF_{CO_2,i,y}}{EG_y} \quad (3)$$

Where:

$EF_{grid,OMsimple,y}$	Simple operating margin CO_2 emission factor in year y (tCO_2/MWh)
$FC_{i,y}$	Amount of fossil fuel type i consumed in the project electricity system in year y (mass or volume unit)
$NCV_{i,y}$	Net calorific value (energy content) of fossil fuel type i in year y (KJ / mass or volume unit)
$EF_{CO_2,i,y}$	CO_2 emission factor of fossil fuel type i in year y ($kgCO_2/TJ$)
EG_y	Net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost / must-run power plants / units, in year y (MWh)
i	All fossil fuel types combusted in power sources in the project electricity system in year y

y	The three most recent years for which data is available at the time of submission of the CDM-PDD to the DOE for validation (ex ante option)

For this approach (simple OM) to calculate the operating margin, the subscript *m* refers to the power plants / units delivering electricity to the grid, not including low-cost/must-run power plants / units, and including electricity imports to the grid. Electricity imports should be treated as one power plant *m*.

The simple OM emission factor ($EF_{grid,OMsimple,y}$) is calculated with reference to the *Notification on Determining Baseline Emission Factor of China's Grid* issued by Chinese DNA (http://cdm.ccchina.gov.cn), (see Annex 3 for details).

$EF_{grid,OMsimple,y}$ is X.XXXX tCO_2e/MWh.

Step5.Calculate the build margin (BM) emission factor

According to *Tool to calculate the emission factor for an electricity system* (version XX), project participants shall choose between one of the following two options to calculate thebuild margin emission factor ($EF_{grid,BM,y}$).

Option 1. For the first crediting period, calculate the build margin emission factor *ex ante* based on the most recent information available on units already built for sample group m at the time of PDD submission to the DOE for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

Option 2. For the first crediting period, the build margin emission factor shall be updated annually, *ex post*, including those units built up to the year of registration of the Project or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emission factor shall be calculated *ex ante*, as described in Option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.

Option 1 is adopted by the bundled project.

Capacity additions from retrofits of power plants should not be included in the calculation of the build margin emission factor.
The sample group of power units m used to calculate the build margin should be determined as per the following procedure, consistent with the data vintage selected above:

(a) Identify the set of five power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently ($SET_{5-units}$) and determine their annual electricity generation ($AEG_{SET-5-units}$, in MWh);
(b) Determine the annual electricity generation of the project electricity system, excluding power units

registered as CDM project activities (AEG_{total} , in MWh). Identify the set of power units, excluding power units registered as CDM project activities, that started to supply electricity to the grid most recently and that comprise 20% of AEG_{total} (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation) ($SET_{\geq 20\%}$) and determine their annual electricity generation ($AEG_{SET-\geq 20\%}$, in MWh);

(c) From $SET_{5-units}$ and $SET_{\geq 20\%}$ select the set of power units that comprises the larger annual electricity generation (SET_{sample});

Identify the date when the power units in SET_{sample} started to supply electricity to the grid. If none of the power units in SET_{sample} started to supply electricity to the grid more than 10 years ago, then use SET_{sample} to calculate the build margin. Ignore steps (d), (e) and (f).

Otherwise:

(d) Exclude from SET_{sample} the power units which started to supply electricity to the grid more than 10 years ago. Include in that set the power units registered as CDM project activity, starting with power units that started to supply electricity to the grid most recently, until the electricity generation of the new set comprises 20% of the annual electricity generation of the project electricity system (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation) to the extent is possible. Determine for the resulting set ($SET_{sample-CDM}$) the annual electricity generation ($AEG_{SET-sample-CDM}$, in MWh) ;

If the annual electricity generation of that set is comprises at least 20% of the annual electricity generation of the project electricity system (i.e. $AEG_{SET-sample-CDM} \geq 0.2 \times AEG_{total}$), then use the sample group $SET_{sample-CDM}$ to calculate the build margin. Ignore steps (e) and (f).

Otherwise:

(e) Include in the sample group $SET_{sample-CDM}$ the power units that started to supply electricity to the grid more than 10 years ago until the electricity generation of the new set comprises 20% of the annual electricity generation of the project electricity system (if 20% falls on part of the generation of a unit, the generation of that unit is fully included in the calculation);

(f) The sample group of power units m used to calculate the build margin is the resulting set ($SET_{sample-CDM->10\,yrs}$).

It is suggested the set of power units that comprises the larger annual generation should be used.

Considering data availability, CDM EB accepts the following deviation in application of methodology[5]:
1) Use of capacity additions during the last several years for estimating the build margin emission factor for grid electricity.

[5] Http://cdm.unfccc.int/UserManagement/FileStorage/AM_CLAR_QEJWJEF3CFBP1OZAK6V5YXPQKK7WYJ.

2) Use of weights estimated using installed capacity in place of annual electricity generation.

And it is suggested to use the efficiency level of the best technology commercially available in the provincial/regional or national grid of China, as a conservative proxy.

Therefore for the bundled project: First, calculate the share of different power generation technology in recent capacity additions. Second, calculate the weight for capacity additions of each power generation technology. And finally calculate the emission factor using the efficiency level of the best technology commercially available in China.

According to *Tool to calculate the emission factor for an electricity system* (version XX), the build margin emission factor ($EF_{grid,BM,y}$) is the generation-weighted average emission factor of power units, calculated as follows:

$$EF_{grid,BM,y} = \frac{\sum_{m} EG_{m,y} \times EF_{EL,m,y}}{\sum_{m} EG_{m,y}} \quad (4)$$

Where:

$EF_{grid,BM,y}$	The build margin emission factor in year y (tCO_2e/MWh);
$EF_{EL,m,y}$	The CO_2 emission factor of power unit m in year y (tCO_2e/MWh);
$EG_{m,y}$	The net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh);
m	The power units included in the build margin;
y	The most recent historical year for which power generation data are available.
$EF_{EL,m,y}$	Calculated according to Option A2 of Step 4(a) (Simple OM) in *Tool to Calculate the Emission Factor for an Electricity System* (version XX).

As the data of installed capacity cannot be separated into coal fired, oil fired and gas fired currently, the build margin emission factor is calculated by the following steps and formulae:

Step a. Calculate the power generation emissions of solid fuel, liquid fuel and gas fuel and each share in the total emissions based on *Energy Balance Table* of the most recent year.

$$\lambda_{Coal,y} = \frac{\sum_{i \in COAL,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}}{\sum_{i,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}} \quad (5)$$

$$\lambda_{Oil,y} = \frac{\sum_{i \in OIL,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}}{\sum_{i,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}} \quad (6)$$

$$\lambda_{Gas,y} = \frac{\sum_{i \in GAS, j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}}{\sum_{i,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}} \quad (7)$$

Where:

$F_{i,j,y}$	is the amount of fuel i (in a mass or volume unit) consumed by province j in year(s) y;
$NCV_{i,y}$	is the net calorific value (energy content) of fuel i in year y (GJ/mass or volume unit);
$EF_{CO2,i,j,y}$	is the emission factor of fuel i in year y (tCO_2e/GJ);

COAL, OIL and GAS are footnote group for solid fuels, liquid fuels and gas fuels.

Step b. Calculate the emission factor for thermal power of the grid based on the result of Step a and the efficiency level of the best technology commercially available in China.

$$EF_{Thermal,y} = \lambda_{Coal,y} \times EF_{Coal,Adv,y} + \lambda_{Oil,y} \times EF_{Oil,Adv,y} + \lambda_{Gas,y} \times EF_{Gas,Adv,y} \quad (8)$$

$$EF_{Coal,Adv,y} = FC_{adv,coal} \times NCV_{coal,y} \times EF_{CO2,coal,y} \quad (8\text{-a})$$

$$EF_{oil,Adv,y} = FC_{adv,oil} \times NCV_{oil,y} \times EF_{CO2,oil,y} \quad (8\text{-b})$$

$$EF_{gas,Adv,y} = FC_{adv,gas} \times NCV_{gas,y} \times EF_{CO2,gas,y} \quad (8\text{-c})$$

Where $EF_{Coal,Adv,y}$, $EF_{Oil,Adv,y}$ and $EF_{Gas,Adv,y}$ are emission factor proxies of efficiency level of the best coal fired, oil fired and gas fired power generation technology commercially available in China.

Step c. Calculate the build margin emission factor of the grid based on the result of Step b and the share of thermal power of recent 20% capacity additions.

$$EF_{grid,BM,y} = \frac{CAP_{Thermal,y}}{CAP_{Total.y}} \times EF_{Thermal,y} \quad (9)$$

Where:

$CAP_{Total,y}$	Total capacity additions that are close to and exceed 20% of existing capacity;
$CAP_{Thermal,y}$	Capacity additions of thermal power.

The data on installed capacity for calculating the build margin emission factor ($EF_{grid,BM,y}$) are obtained from *China Electric Power Yearbook 20XX/20XX/20XX*. The data on different fuel consumptions for power generation and the net calorific values of the fuels are obtained from *China Energy Statistical Yearbook 20XX*. The emission factors of the fuels employed and carbon oxidation rate are obtained from Table 1.3 and Table 1.4 on page 1.21-1.24 of Chapter 1, Volume 2 of *2006 IPCC Guidelines for National*

Greenhouse Gas Inventories. The lower values of the 95% confidence intervals in Table 1.4 are used for the emission factors of the fuels employed.

The BM emission factor ($EF_{grid,BM,y}$) is calculated with reference to the *Notification on Determining Baseline Emission Factor of China's Grid* issued by Chinese DNA (http://cdm.ccchina.gov.cn), (see Annex 3 for details).

Following the equations above, $EF_{grid,BM,y}$ is calculated as follows. Data used in these calculations are provided in Annex 3.

$EF_{grid,BM,y}$ = X.XXXX tCO_2e/MWh

Step 6. Calculate the combined margin emission factor

The calculation of the combined margin (CM) emission factor ($EF_{grid,CM,y}$) is based on one of the following methods:
(a) Weighted average CM; or
(b) Simplified CM.

The weighted average CM method (option A) should be used as the preferred option.
The simplified CM method (option b) can only be used if:
• The project activity is located in a Least Developed Country (LDC) or in a country with less than 10 registered projects at the starting date of validation; and
• The data requirements for the application of step 5 above cannot be met.

The emission factor is calculated as follows:

$$EF_{CO2,grid,y} = EF_{grid,CM,y} = w_{OM} \cdot EF_{grid,OM,y} + w_{BM} \cdot EF_{grid,BM,y} \quad (10)$$

Where:

$EF_{grid,OM,y}$	Operating margin CO_2 emission factor in year y (tCO_2/MWh)
$EF_{grid,BM,y}$	Build margin CO_2 emission factor in year y (tCO_2/MWh)
w_{OM}	Weighting of operating margin emission factor (%)
w_{BM}	Weighting of build margin emission factor (%)

According to the *"Tool to calculate the emission factor for an electricity system"* (version XX), the default values of the proposed project are w_{OM} =0.75, w_{BM} =0.25 in the first crediting period.
The result of calculation for $EF_{grid,CM,y}$ is given in Table 8.

Table 8 XXGrid $EF_{grid,CM,y}$

$EF_{grid,OM,y}$	X.XXXX	tCO_2/MWh
$EF_{grid,BM,y}$	X.XXXX	tCO_2/MWh

$EF_{grid,CM,y}$	X.XXXX	tCO_2/MWh

In summary, $ER_y = EG_{BL,y} \times EF_{CO2,grid,y}$ = XX,XXXMWh × X.XXXX tCO_2/MWh = XX,XXXtCO_2e

III. Calculate the leakage

According to the methodology AMS-I.D., the leakage of the CPA is not considered, i.e. $LE_y = 0$ tCO_2e.

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

>>

As the leakage emission (LE_y) is 0, the emissions reduction ER_y from the CPA during a given year *y* is the difference among the baseline emissions (BE_y), project emissions (PE_y) and leakage (LE_y), as follows:

$$ER_y = BE_y - PE_y - LE_y \quad (12)$$

The emission reduction ER_y from the CPA as well as baseline emissions (BE_y), project emissions (PE_y) and leakage (LE_y) during project years are given in Table 9.

Table 9 Summary Table of emissions 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)
20XX				
20XX				
20XX				
20XX				
20XX				
20XX				
20XX				
Total (tonnes of CO_2e)				

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

B.6.1. Description of the monitoring plan:

>>

Data to be monitored

Data and parameters that are to be monitored in the CPA are as follows:

Data / Parameter:	$EG_{facility,y}$
Data unit:	MWh
Description:	Net quantity of electricity delivered to the grid by the CPA in year *y*
Source of data to be	The data used in the SSC-CPA-DD are obtained from the FSR of the CPA.

used:	Actual data will be obtained through on-site measurement.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	XX,XXX
Description of measurement methods and procedures to be applied:	Continuously monitored and monthly recorded. The meter XX is installed at XX and will be calibrated once a year by a qualified third party in accordance with national standards. The measurement precision of the meter employed by the proposed CPA will be at least XX.
QA/QC procedures to be applied:	The meter(s) is periodically checked and maintained and receipt(s) is used for crosscheck.
Any comment:	-

Organization and Monitoring Manual

The monitoring plan specifies the necessary methods and procedures to measure and record the variables and factors required by the applicable monitoring methodologies as tabulated in detail in above section

The project operator will build a reliable monitoring system, including:

a) Monitoring System Organization Structure
b) Monitoring Data
c) Installation and Maintenance of Meters
d) Data Records & Management
e) QA/QC
f) CDM training
g) Emergency

a) Monitoring System Organization Structure

A CDM management team will be formed to manage all the CDM related business in the CPA. The General Manager of the Project Entity will be in charge of the overall management of the monitoring plan. The configuration of the CDM team is described in Figure 4:

Figure 4 Management Structure of the CPA

For all staff involved in the CPA, a training plan will be developed to provide them with the skills necessary to conduct their work in a safe manner and ensure the successful operation of the CPA.

The CDM manager should ensure that only trained and skilled staff will work in the CPA. Depending on task designation, the staff should attain a comprehensive knowledge with regard to the general and technical aspects of the project, as well as the basic understanding of CDM.

b) Monitoring Data

The emission reductions of the proposed CPA are calculated from the net electricity generation supplied

by the proposed CPA to the grid and the emission factor of grid. As indicated in section B.6, the emission factor of grid is *ex ante* calculated. Then only the net electricity generation supplied by the proposed CPA to the grid will be monitored by energy meter(s) continuously and recording monthly. Meanwhile, all the monitoring data will be submitted to the CME periodically.

c) Installation and Maintenance of Meters

The energy meter(s) will be installed by either the CPA operator or the Grid Company according to the national or industry standard. Records of the meter (type, manufacture, model and calibration documentation) will be retained in the quality control system.
Further, the energy meter(s) will be subject to periodical maintenance and calibration according to relevant national or industry standards and rules or manufacturers' recommendations to ensure accuracy and good performance. All the records should be documented and maintained by the project operator for DOE's verification. The accuracy of the meters employed by the proposed CPA is at least 0.5s and the meters will be calibrated once a year.

The electricity delivered by the proposed CPA to the grid in year y ($EG_{output,y}$) and the electricity imported by the proposed CPA from the grid in year y ($EG_{input,y}$) will be measured continuously by the meter XX installed at XX and recorded at least monthly.

Net quantity of electricity delivered to the grid by the proposed CPA in year y ($EG_{facility,y}$) will be calculated monthly, using the following formula:

$$EG_{facility,y} = EG_{output,y} - EG_{input,y}$$

The monitoring points are detailed in Figure 5.

Figure 5 Monitoring diagram of the proposed CPA

d) Data Records & Management

• Particular staff was appointed by the CPA operator to take the overall responsibility for monitoring emission reductions and keeping all the data collected as part of monitoring archived electronically.
• Electronic data and documents will be regularly copied and archived, and kept at least for two years after the end of the last crediting period or two years after the last issuance of CERs, whichever is later.
• Written data and documents will be copied and archived, and kept for at least two years after the end of the last crediting period or two years after the last issuance of CERs, whichever is later.

e) QA/QC

Particular QC staff was appointed by the CPA operator to take the overall responsibility of calibrating monitoring equipments, managing and processing the monitored data according to QA/QC procedure provided in Section E.7.1. If something is unusual, the project manager should be immediately reported.

f) CDM training

All staff involved in the CDM project has received some relevant training from the project consulting company laid down in training procedures agreed on by the CPA developer and consulting records of

trained CDM staff was retained by the CPA operator. The CDM department ensures that only trained staffs are involved in the operation of the monitoring system.

g) Emergency

When erroneous measurement is detected involved in implementation of the monitoring plan, the erroneous measurement should be reported to the CDM Manager and CME instantly. The CDM Manager takes the responsibility to handle the erroneous measurement as follows:

During the emergency period, readings from the meter at the outlet of solar plant that is owned and managed by the project owner will be adopted after considering the maximum or a transmission losses or a reasonable and conservative estimate of transmission losses through negotiating with the grid company.

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.

According to this aspect of the PoA DD, the environmental analysis should be elaborated at the CPA level. Please refer to section C.2 and C.3.

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

>>

The Environmental Impact Assessment (EIA) report was carry out by XX. The approval of the EIA was issued by XX Environmental Protection Bureau on dd/mm/yy. According to the Environmental Impact Assessment Form, environmental impacts possibly caused by the CPA and treatment measures adopted by the project operator are analyzed as follows:

Describe the possible impacts and measures here.

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:

>>

In line with the national law/regulations, an Environmental Impact Assessment (EIA) has been carried out and approved by the environmental agency in charge of environmental protection before a CPA would start. The EIA has been carried out for the following Environmental impact:

- Expected Environmental impacts during construction, on such as atmosphere, noise, and solid waste;

- Expected Environmental impacts during operation, on such as atmosphere, noise, waste water and solid waste.

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.

In accordance with this aspect of the PoA DD, Environmental analysis should be elaborated at the CPA level. Please refer to section of D.2 to D.4.

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

>>

In dd/mm/yy, The CPA operator carried out a questionnaire survey on the workers and local residents to collect comments if any about the CPA, and the notice had been published in XX for collecting comments from local residents. Comments received from the survey are summarized as follows.

The questionnaire mainly concerns issues as follows:

1) XX;
2) XX;
……

D.3. Summary of the comments received:

>>

Totally XX questionnaires returned out of XX with XX% response rate. The basic structure of the respondents is illustrated in Table 10.

Table 10 Statistics on the basic conditions of people surveyed

Structure of gender		
gender	**population**	**share**
Male	**XX**	**XX%**
Female	**XX**	**XX%**

Structure of educational background		
Educational background	**population**	**share**
Junior college and above	**XX**	**XX%**
Technical secondary school/Senior high school	**XX**	**XX%**
Junior high school and below	**XX**	**XX%**

Structure of age		
age	**population**	**share**
<30	**XX**	**XX%**
30~40	**XX**	**XX%**
>40	**XX**	**XX%**

Structure of occupation		
occupation	**population**	**share**
Farmer	**XX**	**XX%**
Worker and others	**XX**	**XX%**
Power station staff	**XX**	**XX%**

As shown in Table 10, people surveyed are representative of the public in terms of gender, age, occupation and educational background. Therefore their attitudes towards the project can be a comprehensive reflection of the attitudes of the local residents possibly affected by the CPA. Among the XX respondents:

XX respondents (accounting for XX %) have a clear understanding of the basic information of the CPA. XX respondents (accounting for XX %, another XX% hold the neutral/opposed attitude) hold a supportive attitude towards the CPA, which was considered to XX (XX%), XX (XX%), XX (XX%) and XX (XX%).

The respondents supposed the negative effects of the CPA contains XX(XX%), XX(XX%), XX(XX%), XX(XX%)。

The survey shows that most/all residents at the CPA site express a positive attitude towards the construction of the CPA. They believe the CPA will benefit the local economic development. With regard to some concerns about XX possibly caused by the CPA during construction period, the CPA operator has given adequate consideration to XX in the process of project design and construction, which has also been taken appropriate measures.

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

>>

We know from the results of questionnaire statistics that most of / all the stakeholders understand and support the construction of the CPA.

The CPA operator has taken full consideration of relevant comments and suggestions from stakeholders in the process of CPA construction. People and local government are basically supportive of the CPA. Therefore it is not necessary to modify the CPA due to the 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:	

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

No public funds from Annex 1 country are involved in the proposed CPA

Annex 3

BASELINE INFORMATION

The baseline information for calculation of OM, BM and CM emission factor of XX Power Grid is shown in the Notice on Determination of Baseline Grid Emission Factor by China DNA at http://cdm.ccchina.gov.cn. The concrete process is shown in the following tables.

Table A1 Calculation of simple OM emission factor of the XX Power Grid in 20XX

Fuels	Units	XX	XX	XX	XX	XX	Total	Emission factor	OXID	Fuel emission factor	NCV	Emission (tCO_2e)
								(tc/TJ)	(%)	($kgCO_2/TJ$)	($MJ/t,km^3$)	K=F×I×J/ 100000
		A	B	C	D	E	F=A+B+ C+D+E	G	H	I	J	K=F×I×J/ 10000
Raw coal	10^4ton											
Washed coal	10^4ton											
Other washed coal	10^4ton											
Briquette	10^4ton											
Coke	10^4ton											
Coke oven gas	10^8 m^3											
Other gas	10^8 m^3											
Crude oil	10^4ton											
Gasoline	10^4ton											
Diesel	10^4ton											
Fuel oil	10^4ton											
LPG	10^4ton											
Refinery gas	10^4ton											
Natural gas	10^8 m^3											
Other petroleum	10^4ton											
products	10^4ton											
Other coking	10^4ton											
Total												

Data source: China Energy Statistical Yearbook 20XX

Table A2 The fuel fired electricity generation and calculation of emission factor of XX Power Grid in 20XX

Province	The fuel fired electricity generation (MWh)	The rate of electricity self-consumption (%)	The fuel fired electricity connected to the grid (MWh)
XX			
XX			
XX			
XX			
XX			
Total			
The Total fuel fired electricity connected to the grid(MWh)			
Total Emission (tCO_2)			
$EF_{OM,y}$ **for 20XX**			

Data source: China Electric Power Yearbook 20XX

Table A3 Calculation of simple OM emission factor of the XX Power Grid in 20XX

Fuels	Units	XX	XX	XX	XX	XX	Total	Emission factor	OXID	Fuel emission factor	NCV	Emission (tCO_2e)
								(tc/TJ)	(%)	($kgCO_2/TJ$)	($MJ/t,km^3$)	K=F×I×J/ 100000
		A	B	C	D	E	F=A+B+ C+D+E	G	H	I	J	K=F×I×J/ 10000
Raw coal	10^4 ton											
Washed coal	10^4 ton											
Other washed coal	10^4 ton											
Briquette	10^4 ton											
Coke	10^4 ton											
Coke oven gas	10^8 m^3											
Other gas	10^8 m^3											
Crude oil	10^4 ton											
Gasoline	10^4 ton											
Diesel	10^4 ton											
Fuel oil	10^4 ton											
LPG	10^4 ton											
Refinery gas	10^4 ton											
Natural gas	10^8 m^3											
Other petroleum	10^4 ton											
products	10^4 ton											
Other coking	10^4 ton											
Total												

Data source: China Energy Statistical Yearbook 20XX

Table A4 The fuel fired electricity generation and calculation of emission factor of XX Power Grid in 20XX

Province	The fuel fired electricity generation (MWh)	The rate of electricity self-consumption (%)	The fuel fired electricity connected to the grid (MWh)
XX			
XX			
XX			
XX			
XX			
Total			
The Total fuel fired electricity connected to the grid(MWh)			
Total Emission (tCO_2)			
$\boldsymbol{EF_{OM,y}}$ **for 20XX**			

Data source: China Electric Power Yearbook 20XX

Table A5 Calculation of simple OM emission factor of the XX Power Grid in 20XX

Fuels	Units	XX	XX	XX	XX	XX	Total	Emission factor	OXID	Fuel emission factor	NCV	Emission (tCO_2e)
								(tc/TJ)	(%)	($kgCO_2/TJ$)	($MJ/t,km^3$)	K=F×I×J/100000
		A	B	C	D	E	F=A+B+C+D+E	G	H	I	J	K=F×I×J/10000
Raw coal	10^4 ton											
Washed coal	10^4 ton											
Other washed coal	10^4 ton											
Briquette	10^4 ton											
Coke	10^4 ton											
Coke oven gas	10^8 m^3											
Other gas	10^8 m^3											
Crude oil	10^4 ton											
Gasoline	10^4 ton											
Diesel	10^4 ton											
Fuel oil	10^4 ton											
LPG	10^4 ton											
Refinery gas	10^4 ton											
Natural gas	10^8 m^3											
Other petroleum	10^4 ton											
products	10^4 ton											
Other coking	10^4 ton											
Total												

Data source: China Energy Statistical Yearbook 20XX

Table A6 The fuel fired electricity generation and calculation of emission factor of XX Power Grid in 20XX

Province	The fuel fired electricity generation (MWh)	The rate of electricity self-consumption (%)	The fuel fired electricity connected to the grid (MWh)
XX			
XX			
XX			
XX			
XX			
Total			
The Total fuel fired electricity connected to the grid(MWh)			
Total Emission (tCO_2)			
$\boldsymbol{EF_{OM,y}}$ **for 20XX**			

Data source: China Electric Power Yearbook 20XX

TableA7 The three years weighted average emission factor of XX Power Grid

Years	**20XX**	**20XX**	**20XX**
Total CO_2 emission(tCO_2e)			
The total fuel fired electricity connected to the grid(MWh)			
OM=X.XXXX tCO_2e/MWh			

Table A8 Calculation the weight of CO_2 emissions from solid fuels, liquid fuels and gas fuels among the total emissions in XX Power Grid

Fuels	Units	XX	XX	XX	XX	XX	Total	NCV	Emission factor	OXID	CO_2 emissions
								(MJ/t,km^3)	($kgCO_2/TJ$)	(%)	(tCO_2e)
		A	B	C	D	E	G=A+B+C+D+E	H	I	J	K=G*H*I*J/100,000
Raw coal	10^4t										
Washed coal	10^4t										
Other washed coal	10^4t										
Briquette	10^4t										
Coke	10^4t										
Other coking products	10^4t										
Total of solid fuels											
Crude oil	10^4t										
Gasoline	10^4t										
Coal oil	10^4t										
Diesel	10^4t										
Other petroleum products	10^4t										
Total of liquid fuels											
Natural gas	10^7m^3										
Coke oven gas	10^7m^3										
Other gas	10^7m^3										
LPG	10^4t										
Refinery gas	10^4t										
Total of gas fuels											
Total of all fuels											

Data source: China Energy Statistical Yearbook 20XX

Table A9 The emission factor of the most efficient commercial coal-fuelled, oil-fuelled and gas-fuelled power plant

	Variable	Efficiency of electricity supply	Emission factor of the fuels(**$kgCO_2/TJ$**)	OXID	Emission factor (tCO_2e/MWh)
		A	B	C	D=3.6/A/10,000×B×C
Coal-fueled power plant	$EF_{Coal,Adv,y}$				
Gas-fueled power plant	$EF_{Oil,Adv,y}$				
Oil-fueled power plant	$EF_{Gas,Adv,y}$				

TableA10 The weight of CO_2 emission from solid, liquid and gas fuels among the total emissions and the thermal emission factor of XXGrid

$\lambda_{Coal,y}$	$\lambda_{Oil,y}$	$\lambda_{Gas,y}$	$EF_{Thermal,y}$（tCO_2e/MWh） ($\lambda_{Coal,y}$* $EF_{Coal,Adv,u}$+$\lambda_{Oil,y}$* $EF_{Oil,Adv,y}$+$\lambda_{Gas,y}$* $EF_{Gas,Adv,y}$)
XX%	XX%	XX%	**X.XXXX**

Table A11 Calculation of BM emission factor of XX Power Grid

	20XXinstalled capacity	***20XX installed capacity***	***20XX installed capacity***	***Newly added installed capacity between 20XX and 20XX***	***Newly added installed capacity between 20XXand 20XX***	***Weight in newly added installed capacity***
	B	C	C	D	E	F
Fossil fueled(MW)						
Hydro power(MW)						
Nuclear power(MW)						
Wind power(MW)						
Total(MW)						
Share in 20XX installed capacity						
BM=X.XXXX*XX.XX%=X.XXXX tCO_2e/MWh						

Note: the newly added installed capacity is calculated base on capacity of installed generators, generators shut down and the pumped storage units

Data source: China Electric Power Yearbook 20XX-20XX

Table A12 Calculation of CM emission factor of XX Power Grid

OM (tCO_2e/MWh)	BM (tCO_2e/MWh)	CM (tCO_2e/MWh)
A	B	C=0.75×A+0.25×B
X.XXXX	X.XXXX	X.XXXX

Annex 4

MONITORING INFORMATION

No other additional information.

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