



**CLEAN DEVELOPMENT MECHANISM  
SMALL-SCALE PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM  
(CDM-SSC-PoA-DD) Version 01**

**CONTENTS**

- A. General description of small-scale programme of activities (SSC-PoA)
- B. Duration of the small-scale programme of activities
- C. Environmental Analysis
- D. Stakeholder comments
- E. Application of a baseline and monitoring methodology to a typical small-scale CDM Programme Activity (SSC-CPA)

**Annexes**

- Annex 1: Contact information on Coordinating/managing entity and participants of SSC-PoA
- Annex 2: Information regarding public funding
- Annex 3: Baseline information
- Annex 4: Monitoring plan

**NOTE:**

- (i) This form is for the submission of a CDM PoA whose CPAs apply a small scale approved methodology.
- (ii) At the time of requesting registration this form must be accompanied by a CDM-SSC-CPA-DD form that has been specified for the proposed PoA, as well as by one completed CDM-SSC-CPA-DD (using a real case).



**SECTION A. General description of small-scale programme of activities (PoA)**

**A.1 Title of the small-scale programme of activities (PoA):**

>>

Zhongying Changjiang Small-scale Hydropower Programme of Activities

Version: 02

Date: 30/09/2012

The version history of the PoA-DD is summarized as below:

Version Number	Date	Description and reason of revision
01	18/04/2012	Complete GSP version of PoA-DD
02	30/09/2012	Updated version based on DVR

**A.2. Description of the small-scale programme of activities (PoA):**

>>

**1. General operating and implementing framework of PoA**

Zhongying Changjiang International New Energy Investment Co., Ltd (later on referred as “ZCNI”), which is the coordinating/management entity (hereafter referred to as the CME), have planned to implement a small-scale hydropower PoA in Hubei, Yunnan, Henan and Sichuan province of China.

There are rich of hydro resources for power generation in Hubei, Yunnan, Henan and Sichuan province, which is mainly distributed in the poverty and mountainous areas. Due to lack of investment, convenient traffic, power grid infrastructure construction, and other reasons, little investment was attracted in these areas.

The investment strategy of the ZCNI is focus on GHG emission reductions and makes effort on climate change. ZCNI intends to invest small hydropower projects in Hubei, Yunnan, Henan and Sichuan province, which is based on CDM revenue and contributes to sustainable development. Programme of activities in CDM is a very good business model for ZCNI to cover the investment risk in small hydropower sector in China. In the absence of the proposed POA, ZCNI would not invest the small hydropower projects in the four provinces.

The PoA aims at newly built small-scale hydropower projects throughout Hubei, Yunnan, Henan and Sichuan province that supply electricity to grid. Each small-scale CDM Program Activity (referred to later on as CPA) under this PoA will comprise one or more such hydropower plants and have a combined installed capacity of no more than 15 MW, namely the threshold for small-scale CDM projects.

ZCNI will set up project companies for hydro power projects. ZCNI will invest the project, while project companies will build and operate the projects. ZCNI is also the CME, which is responsible for keeping in touch with the related agencies (including DNA, DOE, EB and etc.) for CDM development process, tracking the PoA and each CPA under the PoA, supervising the implementation of the construction and monitoring plan to make sure the data's integrality and accuracy, and taking charge of the issues related CERs issuing activity. Besides, other small scale hydro project owners in the four provinces can be included in this POA as well in order to make further contribution on Climate Change.

The Figure shown below is the operating structure of the PoA.

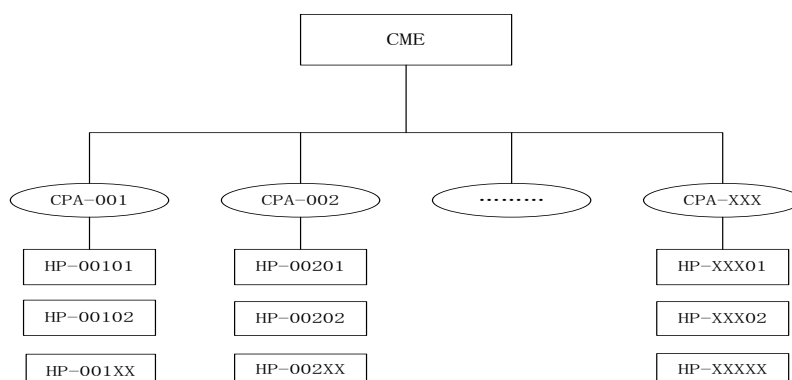


Figure A-1 Operating structure of the PoA

## 2. Policy/measure or stated goal of the PoA

The purpose of PoA is to apply carbon finance for small hydropower projects in Hubei, Yunnan, Henan and Sichuan to promote the development of rural hydropower resources consequently. It helps to solve the electricity shortage problem in these areas, strengthen the rural infrastructure construction, improve the living condition of the local residence, increase employment opportunities, increase incomes, protect ecology, and promote new rural community construction for the country.

The PoA will promote the development of renewable energy and facilitate the abatement of greenhouse gas emissions through the replacement of fossil fuel-fired power generation in the grid as well.

## 3. Confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity.

The PoA is a voluntary action being coordinated and managed by ZCNI. There are no mandatory laws or regulations in place in China that require hydropower plants to seek CDM services. And no mandatory laws or regulations in place in China that require to build hydropower plants for electricity generation. Likewise, no mandatory laws or regulations exist requiring the managing entity or any other party to develop a PoA for hydropower plants in China.<sup>1</sup>

## 4. Contribution to sustainable development by the PoA

The PoA would contribute to the sustainable development in the following aspects:

- Reduce GHG and pollutant emissions by providing clean electric power
- Mitigate the shortage of power in Yunnan, Henan, Sichuan and Hubei Province, and promote the local economic development
- The project activity can create some job opportunities during the construction and operation period. The project will also promote the local development in industry, agriculture and service trade.

<sup>1</sup> <http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=5507>

Regulation on Operation and Management of CDM projects in China;

<http://www.shp.com.cn/shp/zcfg/fl/webinfo/2005/02/1290493212504931.htm>

The Electricity Law of P.R. China;

<http://www.shp.com.cn/shp/zcfg/fl/webinfo/2010/03/1290493212567263.htm>

The Renewable Energy Law of P.R. China(Revised Edition);

<http://www.shp.com.cn/shp/zcfg/fl/webinfo/2005/02/1290493212522223.htm>

The Law on Water Resources of P. R .China



**A.3. Coordinating/managing entity and participants of SSC-POA:**

>>

<b>Name of Party(ies) involved (*) (host indicates a host Party)</b>	<b>Private and/or public entity(ies) ((CME) indicates the coordinating/managing entity) project participants (*) (as applicable)</b>	<b>Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)</b>
China (Host)	Zhongying Changjiang International New Energy Investment Co., Ltd	Yes

**A.4. Technical description of the small-scale programme of activities:**

>>

**A.4.1. Location of the programme of activities:**

>>

**A.4.1.1. Host Party(ies):**

>>

The People's Republic of China

**A.4.1.2. Physical/ Geographical boundary:**

>>

The PoA is implemented in Yunnan, Henan, Sichuan and Hubei Province, so the boundary of these four provinces' administrative area delineates the boundary of the PoA. Yunnan Province is located in the southwest of China, the geographic coordinate is 97°31'to 106°11'E and 21°08'to 29°15'N<sup>2</sup>. Henan Province is located in the central part of China, the geographic coordinate is 110°21' to 116°39' E and 31°23' to 36°22'N<sup>3</sup>. Sichuan Province is located in the southwest of China, the geographic coordinate is 97°21' to 108°31' E and 26°03' to 34°19' N<sup>4</sup>. Hubei Province is located in the central area of China, the geographic coordinate is 108°21'42" to 116°07'50" E and 29°01'53" to 33°6'47" N<sup>5</sup>. Detailed physical location has been labelled in Figure A-2:

<sup>2</sup> [http://www.yn.gov.cn/yn\\_yngk/yn\\_sqgm/201111/t20111107\\_1894.html](http://www.yn.gov.cn/yn_yngk/yn_sqgm/201111/t20111107_1894.html)

<sup>3</sup> <http://www.henan.gov.cn/hngk/zrdl/>

<sup>4</sup> <http://baike.baidu.com/view/7627.htm>

<sup>5</sup> [http://www.hubei.gov.cn/hbgk/zrdl/201204/t20120406\\_344448.shtml](http://www.hubei.gov.cn/hbgk/zrdl/201204/t20120406_344448.shtml)

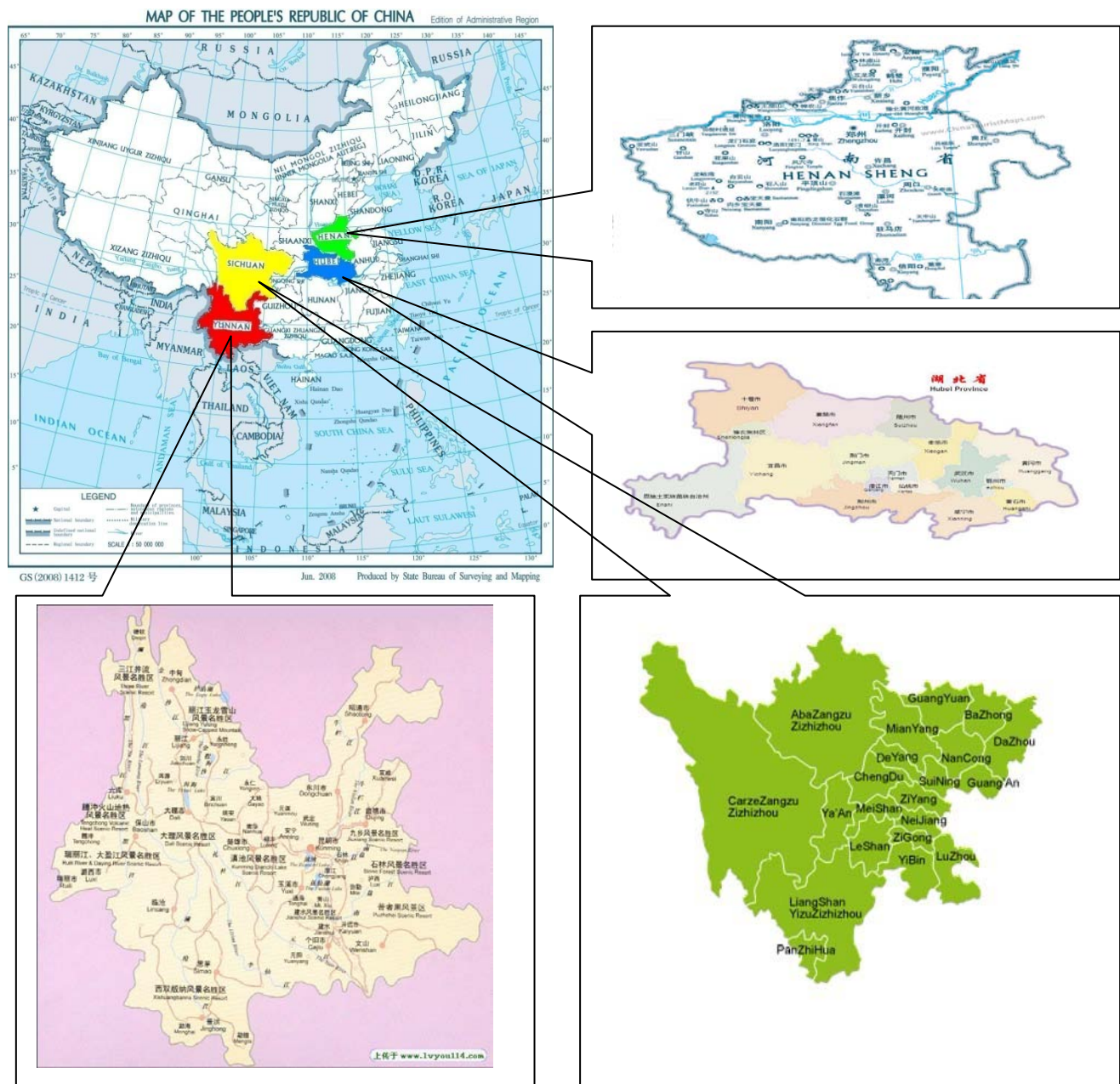


Figure A-2 Location of the PoA

#### A.4.2. Description of a typical small-scale CDM programme activity (CPA):

>>

##### A.4.2.1. Technology or measures to be employed by the SSC-CPA:

>>

A typical CPA under this PoA comprises one or more small hydropower plants with an installed capacity below or equal to 15 MW, which will supply electricity to the regional grid. The hydropower plants are newly constructed and generate electricity from hydropower resource, CPA project activities such as capacity addition, retrofit or replacement in an existing plant does not involve in the PoA.



Although the technical characteristics of each CPA may differ, the general structures include: headpond or reservoir, dam or weir, access road, penstock, powerhouse, hydro-turbine and generator, substation, transmission line, tailrace etc. The construction content may differ based on the real situation of specific CPA. The detailed technical information will be stated in Section A.4 of the specific CPA-DD. No technical transfer from the Annex 1 countries is involved in the PoA.

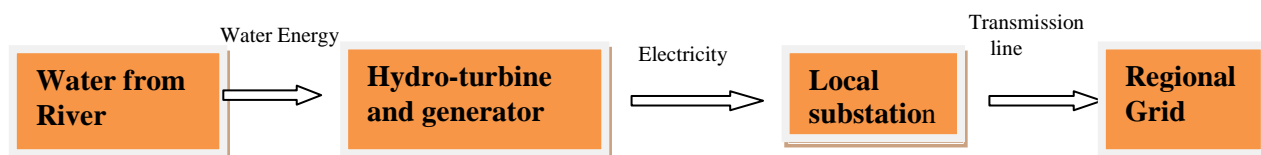


Figure A-3 Hydroelectric power principle diagram

The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and/or by the addition of new generation sources into the grid.

**A.4.2.2. Eligibility criteria for inclusion of a SSC-CPA in the PoA:**

>>

The CME has successfully operated several hydro power plants and other renewable energy projects, it could be said that the CME has rich experiences on project managements. With regarded to above, the CME of the SSC-PoA has the ability and responsibilities to develop the eligibility criteria for inclusion of a CPA under the SSC-PoA. The eligibility criteria have been stated and checked in each specific SSC-CPA document as followings:

No.	Eligibility criteria	Evidence Example <sup>6</sup>
1	Ref: EB 65, Annex 3 Para.14 (a): All activities under a CPA shall be located in the boundary of the PoA, i.e. within Yunnan, Henan, Hubei or Sichuan Province;	-Geographic coordinate evidence  --FSR (Feasibility Study Report) and its approval/PDR (Preliminary Design Report) and its approval of each plant.
2	Ref: EB 65, Annex 3 Para.14 (b): Measures shall be taken to avoid double counting of emission reductions.	The measures to avoid double counting have been stated in the following criteria 2.1 and 2.2.
2.1	Each CPA under the PoA and each hydropower plant involved in one CPA shall have a unique programme logo, such as CPA-001 for CPA level, HP-00101 for project level in each CPA.	Specific SSC-CPA-DD

<sup>6</sup> The evidence example listed here is aim to provide a possible source of each CPA for DOE's validation and verification. But the evidence is not limited in the list table. Any other forms of authentic and reasonable documents can be valid as the evidence at CPA level.



**SMALL-SCALE CDM PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM  
(CDM SSC-PoA-DD) - Version 01**



**CDM – Executive Board**

page 7

2.2	<p>The potential individual CPA implementer included in the proposed PoA should sign a contract with the CME to confirm that:</p> <p>a) They are aware of and have agreed that their activity is being subscribed to the PoA.</p> <p>b) They have neither already been registered as a CDM project, nor as a CPA of another PoA;</p>	<p>-Contract between CPA implementer and CME</p>
3	<p>Ref: EB 65, Annex 3 Para.14 (c):</p> <p>The SSC-CPA shall be (a) new hydro power plant(s) with an installed capacity equal or less than 15 MW and must not involve capacity addition, retrofitting or modifying of an existing facility for renewable energy generation.</p>	<p>-FSR and its approval/PDR and its approval of each plant.</p> <p>-EIA and its approval</p> <p>- If available, main equipment purchase contract of each plant.</p>
4	<p>Ref: EB 65, Annex 3 Para.14 (d):</p> <p>The starting date of any CPA is not, or will not be, prior to the commencement of validation of the programme of activities (27/04/2012 for the PoA GSP). Construction contracts or purchase contracts or other documents will be provided to prove the starting date of a CPA;</p>	<p>-Construction contract/ Equipment purchase contract or other relevant documents of each hydropower plant</p> <p>-In case the CPA has not committed to expenditures/take real actions when the CPA has been on-site validated by DOE, it should be concluded that this EC can be met automatically.</p>
5	<p>Ref: EB 65, Annex 3 Para.14 (e):</p> <p>Hydropower project(s) under each CPA should comply with applicability and other requirements of the applied methodology AMS-I.D (Version 17.0).</p>	<p>The applicability conditions of AMS-I.D. have been fully stated in the following criteria 5.1 to 5.4.</p>
5.1	<p>Ref: AMS-I.D (Version17.0), applicability conditions of Para 1, 2 and 3:</p> <p>The project activity under each CPA should be (a) new hydropower plant(s) which use the hydropower and supply electricity to the regional grid.</p>	<p>-FSR and its approval/ PDR and its approval of each plant</p> <p>-If available, grid connected approval or relevant document confirmed by local power department/company</p>
5.2	<p>Ref: AMS-I.D (Version17.0), applicability conditions of Para 7 and 8:</p> <p>No capacity addition, retrofit or replacement of (an) existing plant(s) involved in the proposed PoA.</p>	<p>-FSR and its approval/ PDR and its approval of each plant</p> <p>-EIA and its approval of each plant</p>
5.3	<p>Ref: AMS-I.D (Version17.0), applicability conditions of Para 5 and 6:</p> <p>No co-fired or co-generation units involved in the CPA. Only</p>	<p>-FSR and its approval/ PDR and its approval of each plant</p>





	renewable hydropower units can be eligible of inclusion of the PoA.	-Business licence of each plant developer
5.4	<p>Ref: AMS-I.D (Version17.0), applicability conditions of Para 4:</p> <p>Hydropower project(s) with reservoirs involved in CPAs should satisfy one of the following conditions: a) the project activity involved in each CPA implemented in an existing reservoir with no change of reservoir volume, b) with increase of reservoir volume but power density is greater than 4W/m<sup>2</sup>, or c) result in a new reservoir with power density greater than 4W/m<sup>2</sup>.</p>	-FSR and its approval/ PDR and its approval of each plant
6	<p>Ref: EB 65, Annex 3 Para.14 (f):</p> <p>The additionality for each CPA can be demonstrated by any one of the following approaches:</p> <p><b>Approach 1:</b> Demonstrating additionality according to “Guidelines for demonstrating additionality of microscale project activities” (Version 04.0).</p> <p>In case of Approach 1, the projects included in the CPA should meet relevant requirements in paragraph 2 (a) of “Guidelines for demonstrating additionality of microscale project activities”, including:</p> <ul style="list-style-type: none"> <li>● The total installed capacity of the project activity is no more than 5MW;</li> <li>● The geographic location of the project activity is in a special underdeveloped zone (SUZ) of the host country.</li> </ul> <p>OR</p> <p><b>Approach 2:</b> Demonstrating additionality according to “Guidelines on the demonstration of additionality of small-scale project activities”(Version 09.0).</p> <p>In case of Approach 2, the additionality for each CPA will be demonstrated by investment analysis. The IRR of every project included in the CPA should be lower than the selected benchmark, which is indicated in investment decision document (such as FSR).</p>	-The detailed information stated in Section E.5 of PoA-DD and each specific SSC-CPA-DD
7	<p>Ref: EB 65, Annex 3 Para.14 (g):</p> <p>In the proposed PoA, both the local stakeholder consultations and environmental impact analysis would be done at CPA level.</p>	<p>-EIA and its approval for environment impact analysis of each plant.</p> <p>-Stakeholder questionnaires and/or meeting records for local stakeholder consultations of each plant</p>
8	<p>Ref: EB 65, Annex 3 Para.14 (h):</p> <p>No public funding from Annex 1 Parties has been involved in each CPA under the proposed PoA.</p>	- Confirmation letter from each CPA implementer





9	<p>Ref: EB 65, Annex 3 Para.14 (k) <sup>7</sup>:</p> <p>Hydropower project(s) involved in each CPA should be newly constructed and the total capacity for each CPA should be no more than 15MW during every year of crediting period of the CPA.</p>	<p>-FSR and its approval/PDR and its approval of each plant.</p> <p>-EIA and its approval</p>
10	<p>Ref: EB 65, Annex 3 Para.14 (l)</p> <p>The proposed small-scale CPA is not a debundled component of a large scale activity<sup>8</sup>, which satisfies both conditions (a) and (b) below:</p> <p>(a) Has the same activity implementer as the proposed small scale CPA or has coordinating or managing entity, which also manages a large scale PoA of the same technology measure, and;</p> <p>(b) The boundary is within 1 km of the boundary of the proposed small-scale CPA, at the closest point.</p>	<p>-Public Data base and CDM/PoA project information published on the authoritative websites such as UNFCCC/DNA website.</p> <p>- Contract between the CPA implementer and CME to confirm that each plant involved in each CPA is not a debundled component of a large scale activity.</p>
11	<p>Confirmation on the crediting period of the SSC-CPA which shall not exceed the length of the PoA (28 years) regardless of the time of inclusion of CPA in the PoA.</p>	<p>Specific SSC-CPA-DD</p>
12	<p>The SSC-CPA shall be in line with laws and regulations available at the time of inclusion of the CPA into the PoA.</p>	<p>-Referring to &lt;Industrial structure adjustment guidance catalogue&gt; published by NDRC of China, in Mar. 2011, the hydropower project is encouraged in China.</p> <p>-EIA and its approval</p>

**A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a SSC-CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality):**

>>

The following shall be demonstrated here:

- (i) The proposed PoA is a voluntary coordinated action;

<sup>7</sup> As for the requirement 14(i) and 14(j) of EB65 Annex 3, the CPA is the installation of one or more new grid-connected hydropower plants and the electricity generated by the project activity will be delivered to regional grid within the PoA boundary. The target group, distribution mechanisms and sampling requirements is not applicable in the PoA.

<sup>8</sup> Which may be a (i) registered small-scale CPA of a PoA, (ii) an application to register another small-scale CPA of a PoA or (iii) another registered CDM project activity.



At present, there are no mandatory laws or regulations in China stipulating to apply CDM to develop hydropower facilities. Therefore, the proposed PoA is a voluntary coordinated action of the CME.

(ii) If the PoA is implementing a voluntary coordinated action, it would not be implemented in the absence of the PoA;

A. The CME have planned to implement the PoA all over Henan, Hubei, Yunnan and Sichuan Province. Due to investment barriers, technology barriers, lack of infrastructure construction and so on, the proposed PoA would not be implemented in the absence of the PoA.

B. At present, there are no mandatory laws or regulations in China stipulating to apply CDM to develop hydropower facilities. Therefore, the proposed PoA is a voluntary coordinated action of the CME.

C. Each CPA included into the PoA would satisfy at least one method of the assessment and demonstration of additionality (details please see Section E.5.1), or it won't be included into the PoA.

D. If a CPA cannot satisfy the criterion of assessment and demonstration of additionality, it will not be included into the PoA.

(iii) If the PoA is implementing a mandatory policy/regulation, this would/is not enforced;

Not applicable as there is no mandatory law or regulations in China stipulating to apply CDM to develop hydropower facilities.

(iv) If a mandatory policy/regulation is enforced, the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation.

Not applicable as above.

Therefore, the anthropogenic emissions of GHG by sources reduced by CPAs under the PoA would not have occurred in the absence of the registered PoA, so the PoA can meet the criteria of additionality.

**A.4.4. Operational, management and monitoring plan for the programme of activities (PoA):**

**A.4.4.1. Operational and management plan:**

>>

ZCNI will be in charge of the management of the whole PoA, and CPA implementers will be responsible for the operation of each CPA. And the main responsibilities of CME and CPA implementers can be elaborated as follows:

<b>Entity</b>	<b>Management Responsibilities</b>
CME	<ul style="list-style-type: none"> <li>• Select and contract CPA implementers;</li> <li>• Track the PoA and the CPAs included and keep in touch with EB, Chinese DNA and related agencies;</li> <li>• Technical review of inclusion of CPAs;</li> <li>• Develop a PoA management system and making continuous improvements of the system;</li> <li>• Maintain existing relationship with the CPA implementers (e.g. conduct training for data monitoring);</li> <li>• Supervise the monitoring implementation of each CPA, and make sure the implementation of the CPA, and periodically collect monitoring data and make sure the data's integrity and accuracy;</li> <li>• Prepare monitoring reports for emission reduction verification.</li> </ul>



CPA implementer	<ul style="list-style-type: none"> <li>• Implement the CPA project activity (construction, operation, and maintenance of the project );</li> <li>• Carry out the monitoring action in accordance with monitoring plan under the guidance of the CME;</li> <li>• Collect the initial information and prepare the monitoring data to CME.</li> </ul>
-----------------	--

The operational and management arrangements established by ZCNI for the implementation of the PoA, including:

- (i) A record keeping system for each CPA under the PoA,
- (ii) A system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA,
- (iii) The SSC-CPA included in the PoA is not a de-bundled component of another CDM programme activity (CPA) or CDM project activity,
- (iv) The provisions to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA.

**(i) A record keeping system for each CPA under the PoA**

To manage the PoA and all included CPAs, ZCNI is responsible for maintaining the records keeping system displayed as databases that hold all relevant information of all CPAs and their hydropower plants. The records keeping system is as follows:

The record that is kept for the CPA is displayed in database A-1. It comprises the number of the CPA, geographic location, the contact data for the employee in the CPA implementer that is responsible for the CPA operation and so on.

CPA number	Name of CPA implementer	Address	Geographical coordinates	Contact information	Installed capacity	Monitoring parameters

Database A-1 CPA record keeping system

Furthermore, a hydropower plant database will be set up to manage the necessary hydropower plant data for each CPA is displayed in database A-2. The minimum data contained in this database is shown in the following table:

HP number	Name of the hydropower plant	Address	Construction completed date	Technical specification

Database A-2 Hydropower plant database

These records displayed in database A-1 and database A-2 will be kept as electronic versions in the office of ZCNI and backed up regularly. All data acquired within this record keeping system will be kept at least until two years after the end of the crediting period of the PoA.

These records displayed in database A-1 and A-2 can be used to unambiguously identify the CPAs under the PoA and the hydropower plants under each CPA, and will allow ZNCI to have control over the



implementation of the PoA and its CPAs.

In summary, ZCNI will record and document the following CPA detail information in database A-1 and A-2:

- Number and address of the CPA and its installed capacity
- The name and contact details of each participating CPA implementer
- The geographical coordinates of each CPA (for example, GPS coordinates of dam and power house)
- The record of technical specification of each hydropower plant in the CPA
- Monitoring parameters of each CPA.

In this way, the ZCNI will be able to track the emission reduction of each CPA over the full duration of the crediting period.

ZCNI will be responsible for the management of records and data associated with each CPA. The electronic / Excel records displayed in database A-1 and A-2 will be updated. Copy of the original data from the hydropower plants shall be stored at the CME office as well. It will form the basis for the verification of CPAs and be available for inspection by the DOE at any point in time.

*(ii) A system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA*

Double counting can occur if a registered CDM project activity or a CPA of another PoA is sought to be registered under the proposed PoA. To prevent such instances, ZCNI seeks confirmation in SSC-CPA when conducting CPA eligibility check. In particular, each SSC-CPA has unique geographical boundary as defined by the project area. To confirm that no CPA or CDM project activity developed in the proposed project area, the relevant information, about the projects using the same methodology AMS-I.D or the same measure/technology, on websites of UNFCCC and Chinese DNA will be checked before applying for CDM and implementation of the CPA in Yunnan, Henan, Sichuan and Hubei Province.

Besides this, the proposed CPA implementer will sign a contract with ZCNI to confirm that: a) They are aware of and have agreed that their activity is been subscribed to the PoA; b) They have neither already been registered as a CDM project, nor as a CPA of another PoA.

*(iii) The SSC-CPA included in the PoA is not a de-bundled component of another CDM programme activity (CPA) or CDM project activity.*

As per “Guidelines on Assessment of De-bundling for SSC Project Activities (version03)” issued on the EB’s 54th meeting, hydropower projects with a size greater than 1% of the small thresholds will perform the de-bundling check. The database described above (including geological coordinates, addresses, project titles and implementers’ name) will be used to perform the de-bundling check. Every new hydropower plant included as a CPA will be compared to the list of project activities under-validation or registered at the UNFCCC. Moreover, the project implementers will be made aware of the de-bundling rules and will confirm that the proposed CPA is not a de-bundled part of a bigger hydropower project. When such a case occur then the coordinating entity would not proceed with inclusion of the corresponding CPA in the proposed PoA.

*(iv) The provisions to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA*

To ensure that those operating the CPA are aware of, and have agreed that their activity is being subscribed to the PoA, the CPA implementer shall enter into a contractual arrangement with the CME.

<b>A.4.4.2. Monitoring plan:</b>
----------------------------------

>>



Each CPA will install the electricity meter(s) to monitor the required parameters, and no sampling will be conducted for calculating the emission reductions attributable to each project plant.

ZCNI will collect the monitoring information for all CPAs that will be verified and prepares monitoring report. All the data will be stored in the record keeping system created by ZCNI which will be provided to DOE for verification.

For each CPA, all parameters included in section E.7.1. will be monitored according to the operation and monitoring manual.

- CPA implementers will monitor and record all parameters included in section E.7.1. individually.
- ZCNI will provide guidance to CPA implementers on how monitoring should be conducted and data should be collected in regards to emission reduction calculation.
- CPA implementers will provide data on monitored parameters to ZCNI.
- ZCNI will document and store all parameters included in section E.7.1. which are provided by CPA implementers. Besides, copy of the data provided by CPA implementers will be kept at the CME office.
- ZCNI will review relevant monitoring documents, prepare the monitoring report, and provide to DOE.

The monitoring information of all CPAs and the monitoring reports prepared by ZCNI will be provided to the DOE.

<b>A.4.5. Public funding of the programme of activities (PoA):</b>
--

>>

There is no public funding from Annex I parties for the PoA.



**SECTION B. Duration of the programme of activities (PoA)**

**B.1. Starting date of the programme of activities (PoA):**

>>

The starting date of PoA is 27/04/2012 and the starting date of crediting period of PoA is 01/10/2013

**B.2. Length of the programme of activities (PoA):**

>>

28 years



**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:**

1. Environmental Analysis is done at PoA level ☐
2. Environmental Analysis is done at SSC-CPA level ☒

The individual nature of each hydropower project (geography, capacity, with or without dam etc.) justifies a separate environmental assessment for each CPA. Environmental analysis will therefore be conducted for each hydropower plant included in a CPA, according to the applicable environmental policies.

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

>>

The environmental impacts analysis will be done at CPA level.

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

>>

The EIA will be approved by local environmental protection bureau at CPA level in accordance with the China laws/regulations.





**SECTION D. Stakeholders' comments**

>>

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

1. Local stakeholder consultation is done at PoA level ☐
2. Local stakeholder consultation is done at SSC-CPA level ☒

The Local Stakeholder Consultations (the consultation meeting or questionnaire survey) will be carried out in each hydropower project involved in a CPA, taking into consideration the differences of circumstances and opinions of each and every community in which each project is located. It is essential to capture each community's view on the impact of the CPA implemented in their surroundings.

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

>>

N/A

**D.3. Summary of the comments received:**

>>

N/A

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

>>

N/A



## SECTION E. Application of a baseline and monitoring methodology

### E.1. Title and reference of the approved SSC baseline and monitoring methodology applied to a SSC-CPA included in the PoA:

>>

AMS-I.D: “Grid connected renewable electricity generation” (Version 17.0)

<http://cdm.unfccc.int/methodologies/DB/RSC TZ8SKT4F7N1CFDXCSA7BDQ7FUIX>

The methodology also refers to:

“Tool to calculate the emission factor for an electricity system” (Version 02.2.1)

“Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” (Version 02)

“Guidelines for demonstrating additionality of microscale project activities” (Version 04.0).

“Guidelines on the demonstration of additionality of small-scale project activities” (Version 09.0)

For more information, please refer to:

<http://cdm.unfccc.int/methodologies/SSCmethodologies/approved>

As per methodologies and tools above, each of them is approved for use in a PoA.

### E.2. Justification of the choice of the methodology and why it is applicable to a SSC-CPA:

>>

NOTE: In the case of CPAs which individually do not exceed the SSC threshold, SSC methodologies may be used once they have first been reviewed and, as needed, revised to account for leakage in the context of a SSC-CPA.

The applicability criteria of AMS-I.D are the following:	Methodology AMS-I.D. is applicable to a CPA under the proposed PoA because:
This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: 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.	All CPAs under the proposed PoA will consist of renewable energy generation units (hydro) that supplies electricity to regional grids CCPG or CSPG.
This methodology is applicable to project activities that: (a) Install a new power plant at a site where there was no renewable energy power plant operating 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).	All CPAs under the proposed PoA will install new hydropower plant(s) at a site where there was no renewable energy power plant operating prior to the implementation of the CPA (Greenfield plant). The activities described in (b) (c) or (d) does not involve under the PoA.
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	Hydro power plants with reservoirs will be eligible to include to the proposed PoA only when one of the followings can be satisfied: • 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 4 W/m <sup>2</sup> ; • 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 4W/m <sup>2</sup> .	reservoir; • The project activity is implemented in an existing reservoir with the increased of the volume, the power density is greater than 4W/m <sup>2</sup> ; • The project activity in each CPA results in new reservoirs and power density is greater than 4W/m <sup>2</sup> .
If the new unit has both renewable and nonrenewable components (e.g. a wind/diesel unit), the eligibility limit of 15MW 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 15MW.	Not applicable. Only renewable component will be involved in each CPA.
Combined heat and power (co-generation) systems are not eligible under this category.	Not applicable. The proposed PoA does not include combined heat and power systems.
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.	Not applicable. All CPAs under the proposed PoA are Greenfield projects and do not involve the addition of renewable energy generation units at an existing renewable energy 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.	Not applicable. All CPAs under the proposed PoA are Greenfield projects and do not involve retrofit or replacement in an existing facility for renewable energy generation.

**E.3. Description of the sources and gases included in the SSC-CPA boundary**

>>

According to the applied methodology AMS-I.D (Version 17.0), for each SSC-CPA under the proposed PoA, the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the SSC-CPA is connected to.

The greenhouse gases and emission sources included in or excluded from the project boundary are shown in the table below.

	Source	Gas	Included?	Justification/ Explanation
<b>Baseline</b>	CO <sub>2</sub> emission from electricity generation in fossil fuel fired power plants that are displaced due to the project activity	CO <sub>2</sub>	Yes	Main emission source
		CH <sub>4</sub>	No	Minor emission source
		N <sub>2</sub> O	No	Minor emission source



Project Activity	Emissions of CH <sub>4</sub> from the reservoir	CO <sub>2</sub>	No	Minor emission source
		CH <sub>4</sub>	No/Yes	No: If the power density of the project activity is greater than 10W/m <sup>2</sup> , minor emission source Yes: If the power density of the project activity is greater than 4 W/m <sup>2</sup> and less than or equal to 10 W/m <sup>2</sup> , main emission source.
		N <sub>2</sub> O	No	Minor emission source

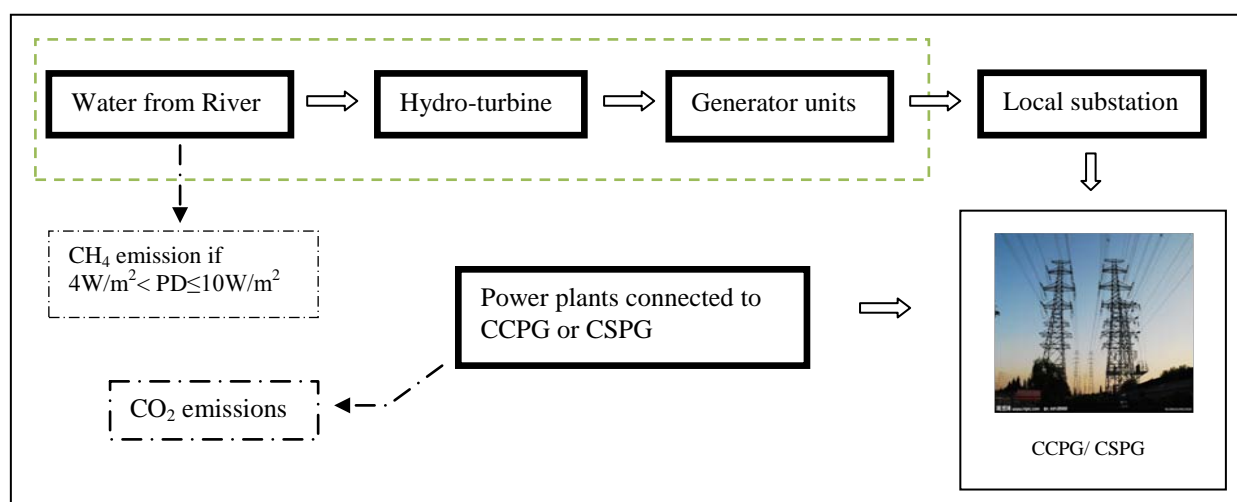


Figure E-1 Project boundary of project activity under the PoA

**E.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:**

>>

As per AMS-I.D. (version 17.0), the baseline scenario of all CPAs under the PoA is, that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.

The baseline emissions are the product of electrical energy baseline  $EG_{BL,y}$  expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor. The grid emission factor is calculated by applying the latest “Tool to calculate the emission factor for an electricity system” (version02.2.1).



**E.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the SSC-CPA being included as registered PoA (assessment and demonstration of additionality of SSC-CPA): >>**

**E.5.1. Assessment and demonstration of additionality for a typical SSC-CPA:**

>>

A specific SSC-CPA argues additionality based on "Guidelines for demonstrating additionality of microscale project activities"(Version 04.0) or the guidance provided by "Guidelines on the demonstration of additionality of small-scale project activities"(Version 09.0). The additionality of each CPA will be assessed according to the following steps:

**Considering CDM before the construction of the CPA**

To demonstrate the additionality of each CPA, the first step must be taken is to list the timeline of the main events involved in the implementation of each CPA, which will clearly prove that the project owner took CDM into serious consideration before commencing the CPA. According to the glossary of CDM terms, the starting date of a CDM programme activity is the earliest date at which either the implementation or construction or real action of a programme activity begins. The starting date of the CPA cannot be prior to the commencement of validation of the programme of activities, here means the date on which the CDM-PoA-DD is first published for global stakeholder consultation (GSP time). And the project owners have taken successive actions to secure the CDM application before the construction works for the CPA.

**Additionality demonstration of the CPA**

Based on size and location of a CPA under this SSC PoA, at least one of two following approaches will be used:

**Approach 1: Demonstrating additionality according to the Guidelines for demonstrating additionality of microscale project activities (Version 04.0).**

The additionality criteria of "Microscale Project Activity" related to the CPA could be summarized as follow:

No.	Criteria in the guideline	Real situation of the CPA	Applicable? (Y/N)
1	The total installed capacity of the project activity is no more than 5MW;	The total installed capacity of the project activity is XXX;	
2	The geographic location of the project activity is in a special underdeveloped zone (SUZ) of the host country.	The project activity/ies in the CPA is/are located in XX County, XX City of XX Province, which is a special underdeveloped zone (SUZ) <sup>9</sup> of the P.R. China.	

If the project activity under the PoA can satisfy the above applicable criteria, it could be deemed as additional directly.

**Approach 2: Demonstrating additionality according to the Guidelines on the demonstration of additionality of small-scale project activities (Version 09.0).**

---

<sup>9</sup>The definition and condition of SUZ is demonstrated in paragraph 2 (a) of “Guidelines for demonstrating additionality of microscale project activities”. The relevant requirements will be met if the approach 1 is chosen to demonstrate additionality.



According to the Guidelines on the demonstration of additionality of small-scale project activities paragraph 1 (a), investment barrier analysis can be applied for each CPA under the PoA. The steps in the "Tool for the demonstration and assessment of additionality" (Ver.06.0.0) will be applied as follow:

**Step 1: Determine appropriate analysis method**

There are three analysis methods recommended to conduct investment analysis, including simple cost analysis (Option I), investment comparison analysis (Option II) and benchmark analysis (Option III).

The proposed CPA chooses option III, since the alternative to the project activity is the supply of electricity by power grid. This is not to be considered an investment scenario and electricity revenue will be attained. Thus benchmark approach is considered appropriate.

**Step 2: Option III: Apply benchmark analysis**

According to relevant national guidance and general approach of small hydropower plant investment assessment, IRR (Internal Rate of Return) is the most suitable financial/economic indicator for the proposed CPA.

The applicable national benchmark or relevant EB guidance used for investment decision will be adopted for the investment analysis.

**Step 3: Calculation and comparison of financial indicators**

The IRR calculations will be based on a list of economic parameters provided by the CPA implementer that were available at the investment decision. The list of parameters is shown in the following table:

Table E-1 Parameters for IRR Calculation

<b>Parameters</b>	<b>Unit</b>	<b>Data Source</b>
Installed capacity	MW	
Total investments	Million Yuan	
Total static investment	Million Yuan	
Net grid-connected electricity	MWh/year	
Construction period	Year	
Operational life time	Year	
Electricity Price (incl. VAT)	Yuan/kWh	
Value Added Tax (VAT)	%	
City maintenance and construction tax	%	
Surcharge for education	%	
Income tax	%	
Depreciation rate	% per year	
Rate of residual value	% per year	
Annual Operation & Maintenance cost	Million Yuan	
Expected CER price	Euro	

*Generally values that were applied at the moment of the investment decision shall be used for the analysis above. Mostly, the Feasibility Study/Preliminary Design Report will be the popular source.*

The investment analysis compares the IRR of the project with the benchmark indicated in investment decision document (such as FSR). The IRR with and without CDM revenue are listed in Table E-2. Without



the income from CERs, the IRR of the proposed project will be lower than the benchmark, and the project is not financially viable. With the income from CERs, the IRR will be more financially attractive to investors.

**Table E-2 Financial Indicators of the project activity**

	<b>IRR</b>
Without CER Revenue	%
With CER Revenue	%

#### **Step 4: Sensitivity analysis**

A sensitivity analysis will be also conducted using assumptions that are conservative from the point of view of analysing additionality, eg.. the “best-case” conditions for the IRR were assumed by altering the following parameters by +/- 10%:

- (1) Net grid-connected electricity
- (2) Electricity Price
- (3) Total static investment
- (4) Annual O&M cost

The full results of each sensitivity analysis will be reported in the respective SSC-CPA-DD using the following Table E-3.

**Table E-3: Sensitivity analysis of the IRR**

Fluctuation Range	10%	5%	0	-5%	-10%
Net grid-connected electricity					
Electricity Price					
Total static investment					
Annual O&M cost					

If the IRR exceeds the benchmark in one or more of the above scenarios considered for the sensitivity analysis, the CPA implementers shall provide evidences that this is unlikely to happen. If no sufficient proof is provided, the CPA will be considered as not additional.

#### **E.5.2. Key criteria and data for assessing additionality of a SSC-CPA:**

>>

The key criteria for assessing the additionality of a CPA would be either Approach 1 "Guidelines for demonstrating additionality of microscale project activities" (Ver.04.0) or Approach 2 "Guidelines on the demonstration of additionality of small-scale project activities"(Ver.09.0):

<b>Approach 1: "Guidelines for demonstrating additionality of microscale project activities" (Ver.04.0)</b>
1. The total installed capacity of the project activity is no more than 5MW; and,
2. The geographic location of the projects in the CPA is in a special underdeveloped zone (SUZ) of the P.R. China.
Or,
<b>Approach 2: "Guidelines on the demonstration of additionality of small-scale project activities"(Ver.09.0)</b>
The IRR (without CER revenues) of the every project included in the CPA should be lower than the selected benchmark, which is indicated in investment decision document (such as FSR).

For details please refer to section E5.1 above.





**E.6. Estimation of Emission reductions of a CPA:**

**E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical SSC-CPA:**

>>

According to the methodology AMS-I.D. version 17.0, the emission reduction can be obtained by the following processes:

**Baseline Emissions:**

The baseline emissions are the product of electrical energy baseline  $EG_{BL,y}$ , expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor.

$$BE_y = EG_{BL,y} * EF_{CO_2,grid,y} \quad (1)$$

Where:

$BE_y$  = Baseline Emissions in year y (t CO<sub>2</sub>)

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

$EF_{CO_2,grid,y}$  = CO<sub>2</sub> emission factor of the grid in year y (t CO<sub>2</sub>/MWh)

For newly built hydropower project.

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

Where:

$EG_{facility,y}$  = Quantity of net electricity supplied to the grid in year y (MWh)

$$EF_{CO_2,grid,y} = EF_{grid,CM,y} \quad (3)$$

$EF_{grid,CM,y}$  = CO<sub>2</sub> emission factor of the grid in year y (t CO<sub>2</sub>/MWh) calculated using “Tool to calculate the Emission Factor for an electricity system” (version 02.2.1)

The emission factor can be calculated in a transparent and conservative manner as follows:

- (a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the “Tool to calculate the Emission Factor for an electricity system”;

OR

- (b) The weighted average emissions (in t CO<sub>2</sub>/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.

A combined margin (CM) is adopted to calculate the emission reductions. The calculating process will be in accordance with steps of Tool to calculate the emission factor for an electricity system (version 02.2.1) and



the latest version of *Baseline Emission Factors for Regional Power Grids in China* published by Chinese DNA at the time of CPA-DD submission to the DOE for validation. The detailed calculating processes are as follows:

- Step 1: Identify the relevant electricity systems.
- Step 2: Choose whether to include off-grid power plants in the project electricity system (optional).
- Step 3: Select a method to determine the operating margin (OM).
- Step 4: Calculate the operating margin emission factor according to the selected method.
- Step 5: Calculate the build margin (BM) emission factor.
- Step 6: Calculate the combined margin (CM) emission factor.

The detailed calculating processes are:

### Step 1 Identify the relevant electricity systems

Identify the electricity system and its covered areas that the CPA connects to, according to the “Tool to calculate the emission factor for an electricity system” and delineation of electricity system given by Chinese DNA.

Part of the CPAs will connect to CSPG which covers Guangdong, Yunnan, Guizhou, Hainan Province and Guangxi Zhuang Autonomous Region, and the others will connect to CCPG which covers Henan, Hubei, Hunan, Jiangxi, Sichuan Province and Chongqing City. Correspondingly, the relevant electricity system (CSPG or CCPG) identified depends on the specific CPA.

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

According to the tool, project participants may choose between the following two options to calculate the operating margin and build margin emission factor:

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

**Option II:** Both grid power plants and off-grid power plants are included in the calculation.

Option I is chosen to calculate the operating margin and build margin emission factor.

### 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.

In the five most recent years where data are available, the low-cost/must run resource<sup>10</sup> constituted less than 50%<sup>11</sup> of total power generation of the grid. As a result, the simple OM method can be used to calculate the operating margin emission factor ( $EF_{grid,OM,y}$ ) of the CPA.

---

<sup>10</sup> Low-cost/must-run resources are defined as power plants with low marginal generation costs or power plants that are dispatched independently of the daily or seasonal load of the grid. They typically include hydro, geothermal, wind, low-cost biomass, nuclear and solar generation. If coal is obviously used as must-run, it should also be included in this list, i.e. excluded from the set of plants.



To calculate the simple OM emission factor of the grid, the ex-ante option is adopted by using 3-year generation-weighted average based on the most recent data at the time of the CPA-DD submission to the DOE for validation.

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

The simple OM emission factor is calculated as the generation-weighted average CO<sub>2</sub> emissions per unit net electricity generation (t CO<sub>2</sub>/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants/units. It may be calculated:

Option A: Based on the net electricity generation and a CO<sub>2</sub> emission factor of each power unit;<sup>12</sup> or

Option B: Based 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.

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 (i.e., if Option I has been chosen in Step 2).

The fuel consumption data in China is not available for each power plant/unit, thus Option A is not applicable. According to the latest version of Baseline Emission Factors for Regional Power Grids in China, only the nuclear and renewable power generation is considered as low-cost/must run power sources in China and the quantity of electricity supplied to the grid by these sources is known. Further, the off-grid power plants are not included in the calculation as mentioned in the above. So Option B is adopted to calculate the simple OM emission factor.

Under this Option, 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:

$$EF_{grid,OMsimple,y} = \frac{\sum_i (FC_{i,y} * NCV_{i,y} * EF_{co2,i,y})}{EG_y} \quad (4)$$

Where:

$EF_{grid,OMsimple,y}$  = Simple operating margin CO<sub>2</sub> emission factor in year y (t CO<sub>2</sub>/MWh)

$FC_{i,y}$  = Amount of fossil fuel type  $i$  consumed by power plant/unit  $m$  in year (y) (mass or volume unit)

$NCV_{i,y}$  = Net calorific value (energy content) of fossil fuel type  $i$  in year y (GJ/mass or volume unit)

<sup>11</sup> The concrete demonstration will be filled in the specific CPA-DD.

<sup>12</sup> Power units should be considered if some of the power units at the site of the power plant are low-cost/must-run units and some are not. Power plants can be considered if all power units at the site of the power plant belong to the group of low-cost/must-run units or if all power units at the site of the power plant do not belong to the group of low-cost/must-run units.



$EF_{co2,i,y}$	= CO <sub>2</sub> emission factor of fossil fuel type $i$ in year $y$ (t CO <sub>2</sub> /GJ)
$EG_y$	= 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 relevant year as per the data vintage chosen in Step 3.

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

In terms of vintage of data, project participants can choose between one of the following two options:

**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 CDM-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 activity 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 emissions 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.

For the CPA, option 1 is chosen to calculate Build Margin emission factor ( $EF_{grid, BM, y}$ ).

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:

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

Otherwise:

- 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 activities, 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 ( $SET_{\text{sample-CDM}}$ ) the annual electricity generation ( $AEG_{\text{SET-sample-CDM}}$ , 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.  $AEG_{\text{SET-sample-CDM}} \geq 0.2 \times AEG_{\text{total}}$ ), then use the sample group  $SET_{\text{sample-CDM}}$  to calculate the build margin. Ignore steps (e) and (f).

Otherwise:

- (e) Include in the sample group  $SET_{\text{sample-CDM}}$  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 ( $SET_{\text{sample-CDM} > 10\text{yrs}}$ ).

The Build Margin Emission Factor ( $EF_{\text{grid,BM},y}$ ) is calculated as follows:

$$EF_{\text{grid,BM},y} = \frac{\sum_m EG_{m,y} * EF_{EL,m,y}}{\sum_m EG_{m,y}} \quad (5)$$

Where:

$EF_{\text{grid,BM},y}$  = Build margin CO<sub>2</sub> emission factor in year  $y$  (t CO<sub>2</sub>/MWh)

$EG_{m,y}$  = Net quantity of electricity generated and delivered to the grid by power unit  $m$  in year  $y$  (MWh)

$EF_{EL,m,y}$  = CO<sub>2</sub> emission factor of power unit  $m$  in year  $y$  (t CO<sub>2</sub>/MWh)

$m$  = power units included in the build margin

$y$  = most recent historical year for which power generation data is available.

Due to data's unavailability, the BM calculation follows the guidance provided by CDM EB in the deviation. First, calculate the newly installed capacity and its power generation technology mix, then the weights of different power technologies in the newly installed capacity, finally the BM emission factor base on the emission factors of different types of most advanced commercial generation technologies.<sup>13</sup>

Because the generating capacity of the coal-fired, oil-fired and gas-fired power plants cannot be separated from the existing statistical data, the BM calculation adopts the following method: First, use the available data in the energy balance tables on the most recent year to calculate the proportion of CO<sub>2</sub> emissions from solid, liquid and gaseous fuels corresponding to the total emissions of CO<sub>2</sub> emissions. Second, calculate the emission factor of the fossil fuel fired power generation in each grid using the above proportions as the weights and the emission factors of the most advanced commercial generation technologies as the reference. Finally, the BM emission factor is multiplied by the proportion of fossil fuel fired power generation and the proportion of fossil fuel fired power plants in the newly added 20% capacity. Concrete steps and the formula for BM are as follows:

---

<sup>13</sup> <http://cdm.ccchina.gov.cn>



**Sub-step 5a. Calculating the share of CO<sub>2</sub> emission of different fuel-fired power plants in the total CO<sub>2</sub> emissions**

$$\lambda_{coal,y} = \frac{\sum_{i,j} F_{i,j,y} * NCV_{i,y} * EF_{co2i,j,y}}{\sum_{i,j} F_{i,j,y} * NCV_{i,y} * EF_{co2i,j,y}} \quad (6)$$

$$\lambda_{oil,y} = \frac{\sum_{i,j} F_{i,j,y} * NCV_{i,y} * EF_{co2i,j,y}}{\sum_{i,j} F_{i,j,y} * NCV_{i,y} * EF_{co2i,j,y}} \quad (7)$$

$$\lambda_{gas,y} = \frac{\sum_{i,j} F_{i,j,y} * NCV_{i,y} * EF_{co2i,j,y}}{\sum_{i,j} F_{i,j,y} * NCV_{i,y} * EF_{co2i,j,y}} \quad (8)$$

Where:

$F_{i,j,y}$  = the amount of fuel  $i$  (in a mass or volume unit) consumed by project  $j$  in year  $y$ ;

$NCV_{i,j}$  = Net calorific value (energy content) of fossil fuel type  $i$  consumed by province  $j$  (GJ/mass or volume unit)

$EF_{co2i,j,y}$  = CO<sub>2</sub> emission coefficient of fossil fuel type  $i$  (t CO<sub>2</sub>/mass or volume unit of the fuel), taking into account the carbon content of the fuels used by relevant provincial sub-grids  $j$  and the percent oxidation of fuel in year  $y$ ;

Coal, Oil and Gas is the footnote for solid fuels, liquid fuels and gas fuels.

**Sub-step 5b. Calculation the emission factor of fuel-fired power technology.**

$$EF_{Thermal} = \lambda_{Coal,y} * EF_{Coal,Adv,y} + \lambda_{Oil,y} * EF_{Oil,Adv,y} + \lambda_{Gas,y} * EF_{Gas,Adv,y} \quad (9)$$

Where:

$EF_{Coal,Adv,y}$ ,  $EF_{Oil,Adv,y}$  and  $EF_{Gas,Adv,y}$  represent the emission factors of the commercially available most advanced coal, oil and gas fired power technology, please refer to Annex 3 for more details in specific CPA-DD.

**Sub-step 5c. Calculating the  $EF_{grid,BM,y}$**

$$EF_{grid,BM,y} = \frac{CAP_{Thermal,y}}{CAP_{Total,y}} * EF_{Thermal,y} \quad (10)$$

Where:

$CAP_{Total,y}$  is the newly increment of total installed capacity;

$CAP_{Thermal,y}$  is the newly increment of fuel-fired installed capacity.

The  $EF_{grid,OM,y}$  and  $EF_{grid,BM,y}$  of the first crediting period of the CPA is calculated ex-ante and will not change during the first crediting period. For the second crediting period, the  $EF_{grid,OM,y}$  and  $EF_{grid,BM,y}$  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 of the CPA to the DOE. For the third crediting period, the  $EF_{grid,OM,y}$  and  $EF_{grid,BM,y}$  calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.



## Step 6. Calculate the combined margin (CM) 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 should be used as the preferred option.

Method (a) is adopted for calculating the combined margin emission factor of the CPA:

$$EF_{grid,CM,y} = w_{OM} * EF_{grid,OM,y} + w_{BM} * EF_{grid,BM,y} \quad (11)$$

Where:

$EF_{grid,CM,y}$  = Combined margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)

$EF_{grid,OM,y}$  = Operating margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)

$EF_{grid,BM,y}$  = Build margin CO<sub>2</sub> emission factor in year y (tCO<sub>2</sub>/MWh)

$w_{OM}$  = Weighting of operating margin emission factor (%)

$w_{BM}$  = Weighting of build margin emission factor (%)

The weight  $w_{OM}$  and  $w_{BM}$  are taken both by 0.5 for the first crediting period of the CPA; and  $w_{OM}=0.25$  and  $w_{BM}=0.75$  for the second and third period of the CPA.

For the detailed calculation, please refer to specific CPA-DD.

## Project emissions

In accordance with the methodology, for most renewable energy project activities,  $PE_y = 0$ . However, project emissions from water reservoirs of hydro power project activities that result in new reservoirs or the increase of existing reservoirs have to be considered following the procedure described in the most recent version of ACM0002 (version 13.0.0)

If the hydro power project activity result in the new reservoir or the increase of existing reservoir, the power density of the project activity (PD) is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}} \quad (12)$$

Where:

$PD$  = Power density of the project activity (W/m<sup>2</sup>)

$Cap_{PJ}$  = Installed capacity of the hydro power plant after the implementation of the project activity (W)

$Cap_{BL}$  = Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero.

$A_{PJ}$  = Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m<sup>2</sup>)

$A_{BL}$  = Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m<sup>2</sup>). For new reservoirs, this value is zero





The project emissions from water reservoirs of hydro power project activity are determined based on the PD of the project activity according to the following procedures:

- (a) If the power density of the project activity (*PD*) is greater than 4 W/m<sup>2</sup> and less than or equal to 10 W/m<sup>2</sup>:

$$PE_y = \frac{EF_{Res} * TEG_y}{1000} \quad (13)$$

Where:

$PE_y$  = Project emissions from water reservoirs in year *y* (tCO<sub>2</sub>e/yr)

$EF_{Res}$  = Default emission factor for emissions from reservoirs of hydro power plants in year *y* (kg CO<sub>2</sub>e/MWh)

$TEG_y$  = Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year *y* (MWh)

- (b) If the power density of the project activity (*PD*) is greater than 10 W/m<sup>2</sup>

$$PE_y = 0 \quad (14)$$

### **Leakage**

According to the methodology AMS-I.D. version 17.0, the project activity leakage does not take into account, the  $LE_y=0$

**E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a SSC-CPA:**

>>

### **Baseline Emissions:**

As per the methodology AMS-I.D., baseline emissions include only CO<sub>2</sub> emissions from electricity generation in the grid that the proposed CPA is connected to. The baseline emissions are to be calculated as follows:

$$BE_y = EG_{facility,y} * EF_{grid,CM,y} \quad (15)$$

Where:

$BE_y$  =Baseline Emissions in year *y* (t CO<sub>2</sub>)

$EG_{facility,y}$  =Quantity of net electricity supplied to the grid in year *y* (MWh)

$EF_{grid,CM,y}$  =CO<sub>2</sub> emission factor of the grid in year *y* (t CO<sub>2</sub>/MWh) calculated using “Tool to calculate the Emission Factor for an electricity system” (version 02.2.1)

The emission factor can be calculated in a transparent and conservative manner as follows:



- (i) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the “Tool to calculate the Emission Factor for an electricity system”;

OR

- (ii) The weighted average emission (in t CO<sub>2</sub>/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.

A combined margin (CM) is adopted to calculate the emission reductions. The calculating process will be in accordance with steps of Tool to calculate the emission factor for an electricity system (version 02.2.1) and the latest version of *Baseline Emission Factors for Regional Power Grids in China* published by Chinese DNA at the time of CPA-DD submission to the DOE for validation.

### **Project emissions**

In accordance with the methodology, for most renewable energy project activities, PE<sub>y</sub> = 0. However, project emissions from water reservoirs of hydro power project activities that result in new reservoirs or the increase of existing reservoirs have to be considered following the procedure described in the most recent version of ACM0002(ver13.0.0).

If the hydro power project activity result in the new reservoir or the increase of existing reservoir, the power density of the project activity (PD) is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}} \quad (16)$$

Where:

- PD = Power density of the project activity (W/m<sup>2</sup>)
- Cap<sub>PJ</sub> = Installed capacity of the hydro power plant after the implementation of the project activity (W)
- Cap<sub>BL</sub> = Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero.
- A<sub>PJ</sub> = Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m<sup>2</sup>)
- A<sub>BL</sub> = Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m<sup>2</sup>). For new reservoirs, this value is zero

The project emissions from water reservoirs of hydro power project activity are determined based on the PD of the project activity according to the following procedures:

- (a) If the power density of the project activity (PD) is greater than 4 W/m<sup>2</sup> and less than or equal to 10 W/m<sup>2</sup>:

$$PE_y = \frac{EF_{Res} * TEG_y}{1000} \quad (17)$$

Where:



- $PE_y$  = Project emissions from water reservoirs in year y (tCO<sub>2</sub>e/yr)
- $EF_{Res}$  = Default emission factor for emissions from reservoirs of hydro power plants in year y (kg CO<sub>2</sub>e/MWh)
- $TEG_y$  = Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (MWh)

(b) If the power density of the project activity (PD) is greater than 10 W/m<sup>2</sup>

$$PE_y = 0 \quad (18)$$

**Leakage:**

According to the methodology AMS-I.D. version 17.0, the project activity leakage does not take into account, the  $LE_y=0$

**Project Emission Reduction:**

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y \quad (19)$$

Where:

- $ER_y$  = Emission reductions in year y (t CO<sub>2</sub>/y)
- $BE_y$  = Baseline emissions in year y (t CO<sub>2</sub>/y)
- $PE_y$  = Project emissions in year y (t CO<sub>2</sub>/y)
- $LE_y$  = Leakage emissions in year y (t CO<sub>2</sub>/y)

**E.6.3. Data and parameters that are to be reported in CDM-SSC-CPA-DD form:**

<b>Data / Parameter:</b>	<b>EF<sub>grid,OM,y</sub></b>
Data unit:	tCO <sub>2</sub> /MWh
Description:	Operating Margin Emission Factor
Source of data used:	Chinese DNA: the latest version of Baseline Emission Factors for Regional Power Grids in China at <a href="http://cdm.ccchina.gov.cn">http://cdm.ccchina.gov.cn</a>
Value applied:	Depends on the grid concerned.
Justification of the choice of data or description of measurement methods and procedures actually applied :	Official and authoritative statistics
Any comment:	

<b>Data / Parameter:</b>	<b>EF<sub>grid,BM,y</sub></b>
Data unit:	tCO <sub>2</sub> /MWh
Description:	Build Margin Emission Factor
Source of data used:	Chinese DNA: the latest version of Baseline Emission Factors for Regional Power Grids in China at <a href="http://cdm.ccchina.gov.cn">http://cdm.ccchina.gov.cn</a>
Value applied:	Depends on the grid concerned.



**SMALL-SCALE CDM PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM  
(CDM SSC-PoA-DD) - Version 01**



**CDM – Executive Board**

page 33

Justification of the choice of data or description of measurement methods and procedures actually applied :	Official and authoritative statistics
Any comment:	

<b>Data / Parameter:</b>	<b>EG<sub>y</sub></b>
Data unit:	MWh
Description:	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
Source of data used:	China Electric Power Yearbook
Value applied:	See specific CPA-DD
Justification of the choice of data or description of measurement methods and procedures actually applied :	Official and authoritative statistics
Any comment:	

<b>Data / Parameter:</b>	<b>NCV<sub>i,y</sub></b>
Data unit:	GJ/mass or volume unit
Description:	Net calorific value (energy content) of fossil fuel i in year y
Source of data used:	China Energy Statistical Yearbook
Value applied:	See specific CPA-DD
Justification of the choice of data or description of measurement methods and procedures actually applied :	Official data
Any comment:	

<b>Data / Parameter:</b>	<b>FC<sub>i,y</sub></b>
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 Statistics Yearbook
Value applied:	See specific CPA-DD
Justification of the choice of data or description of measurement methods and procedures actually applied :	Official data
Any comment:	

<b>Data / Parameter:</b>	<b>EF<sub>CO2,i,y</sub></b>
--------------------------	-----------------------------



**SMALL-SCALE CDM PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM  
(CDM SSC-PoA-DD) - Version 01**



**CDM – Executive Board**

page 34

Data unit:	t CO <sub>2</sub> e/GJ
Description:	CO <sub>2</sub> emission factor of fossil fuel type <i>i</i> in year <i>y</i> (t CO <sub>2</sub> e/GJ)
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories (Volume 2, Energy, Chapter 1, Table 1.4)
Value applied:	See specific CPA-DD
Justification of the choice of data or description of measurement methods and procedures actually applied :	IPCC Default Value
Any comment:	

<b>Data / Parameter:</b>	$\eta_{i,Adv}$
Data unit:	%
Description:	Best commercial available efficiency of coal, gas, oil fuel power plant
Source of data used:	Chinese DNA: the latest version of Baseline Emission Factors for Regional Power Grids in China at <a href="http://cdm.ccchina.gov.cn">http://cdm.ccchina.gov.cn</a>
Value applied:	See specific CPA-DD
Justification of the choice of data or description of measurement methods and procedures actually applied :	These data are the best and most recent data available, and use the same data publication as the calculation of the emission factors published by the Chinese authorities.
Any comment:	

<b>Data / Parameter:</b>	$CAP_y$
Data unit:	MW
Description:	The installed capacity of every kind of electricity generation (such as thermal power, hydro power, nuclear power, wind power and other energy sources etc.) of the grid in the recent years.
Source of data used:	China Electric Power Yearbook
Value applied:	See specific CPA-DD
Justification of the choice of data or description of measurement methods and procedures actually applied :	Official data
Any comment:	

<b>Data / Parameter:</b>	$Cap_{BL}$
Data unit:	W
Description:	Installed capacity of the hydro power plant before the implementation of the project activity.
Source of data used:	Project site.



Value applied:	For new hydro power plants, this value is zero.
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

<b>Data / Parameter:</b>	$A_{BL}$
Data unit:	$m^2$
Description:	Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full ( $m^2$ ).
Source of data used:	Project site.
Value applied:	For new reservoirs, this value is zero.
Justification of the choice of data or description of measurement methods and procedures actually applied :	
Any comment:	

<b>Data / Parameter:</b>	$EF_{Res}$
Data unit:	kgCO <sub>2</sub> e/MWh
Description:	Default emission factor for emissions from reservoirs of hydro power plants
Source of data used:	Decision by EB23
Value applied:	90 kgCO <sub>2</sub> e/MWh
Justification of the choice of data or description of measurement methods and procedures actually applied :	-
Any comment:	Only applicable to hydro power project activities with a power density of the project activity (PD) greater than 4 W/m <sup>2</sup> and less than or equal to 10 W/m <sup>2</sup> .

**E.7. Application of the monitoring methodology and description of the monitoring plan:**

**E.7.1. Data and parameters to be monitored by each SSC-CPA:**

<b>Data / Parameter:</b>	$EG_{facility,v}$
Data unit:	MWh/yr
Description:	Quantity of net electricity supplied to the grid in year y
Source of data to be used:	Measured by meter
Value of data applied	See specific CPA-DD



for the purpose of calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	Measured by electricity meter(s). Continuous monitoring and monthly recording
QA/QC procedures to be applied:	The meter will be calibrated periodically according to national standard, and the measurement results will be cross checked with records for sold/purchased electricity.
Any comment:	The net electricity supplied to the grid is the difference between the measured quantities of the grid electricity export and the import.

<b>Data / Parameter:</b>	<b>CAP<sub>PJ</sub></b>
Data unit:	W
Description:	Installed capacity of the hydro power plant after the implementation of the project
Source of data to be used:	Project site.
Value of data applied for the purpose of calculating expected emission reductions in section B.5	See specific CPA-DD
Description of measurement methods and procedures to be applied:	Verified on site yearly
QA/QC procedures to be applied:	
Any comment:	

<b>Data / Parameter:</b>	<b>A<sub>PJ</sub></b>
Data unit:	m <sup>2</sup>
Description:	Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full.
Source of data to be used:	Project site
Value of data applied for the purpose of calculating expected emission reductions in section B.5	See specific CPA-DD
Description of measurement methods and procedures to be applied:	Yearly measured from topographical surveys, maps, satellite pictures, etc
QA/QC procedures to	





be applied:	
Any comment:	

<b>Data / Parameter:</b>	<b>TEG<sub>v</sub></b>
Data unit:	MWh/yr
Description:	Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y
Source of data to be used:	Measured by meter
Value of data applied for the purpose of calculating expected emission reductions in section B.5	See specific CPA-DD
Description of measurement methods and procedures to be applied:	Continuous measurement and monthly recording
QA/QC procedures to be applied:	The meter will be calibrated periodically according to national standard.
Any comment:	Only applicable to hydro power project activities with a power density of the project activity (PD) greater than 4 W/m <sup>2</sup> and less than or equal to 10 W/m <sup>2</sup> .

**E.7.2. Description of the monitoring plan for a SSC-CPA:**

>>

**1. Monitoring Framework**

The CME (ZCNI) will act as the overall supervisor of the PoA, preparing the operation and monitoring manual for CPAs, calculating emission reductions and preparing monitoring reports periodically to the DOE

The CPA implementers will undertake the monitoring of CPA operations including employee training, data collection and report to ZCNI periodically. The monitoring structure of the project is as follows:

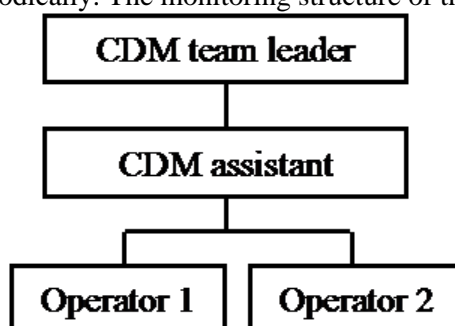


Figure E-1 Monitoring structure

This monitoring team of the CPA will be under the supervision of the CME, which consists of a team leader, an assistant and at least two operators.

This team leader has the overall responsibility for the monitoring and verification process, training and managing all team members, and keep in touch with the CME. The assistant will help the team leader to supervise the operation of the project, including data monitoring, negotiations with the consumers, and to collect financial data such as the sold/purchase electricity records. The operators will be responsible for



calibrating and maintaining the meters, measuring and recording relevant readings, collecting, checking, archiving and managing data, and making summary according to the CDM requirements at a regular basis.

## 2. Monitoring Data

The data and parameters to be monitored are indicated in Section E.7.1.

## 3. Data Collection and Management

Qualified meters will be installed to measure net electricity supplied to the grid ( $EG_{\text{facility},y}$ ). Installed capacity of the hydro power plant after the implementation ( $CPA_{PJ}$ ) will be yearly verified and area of the reservoir ( $A_{PJ}$ ) will be yearly verified. For hydro power project activities with a power density of the project activity (PD) greater than  $4 \text{ W/m}^2$  and less than or equal to  $10 \text{ W/m}^2$ , the total electricity produced by the project activity ( $TEG_y$ ) will be monitored by the qualified meters. The CPA implementers will record and collect the data as required by its monitoring plan, and report to ZCNI periodically, while, ZCNI will check the data and its evidence to ensure its accuracy. The data will be archived electronically and be stored for 2 years after the end of the crediting period of each CPA.

## 4. Quality Assurance and Quality Control

The meters will be installed by either the project developer or the grid company according to the national standards, and the accuracy of the meters will be satisfied with the related national standards. The project entity will implement QA&QC measures to calibrate and guarantee the accuracy of metering and safety of the project operation. The metering devices will be calibrated and inspected properly and periodically as per standard industry norms and requirements. The grid company and the project owners are responsible for operation and maintenance of their respective electricity meters.

## 5. Training

The employee of each CPA will receive general training on hydropower project operation organized by the CPA implementer, including reading and calibration of meters, recording of the readings, adjustment of readings, and reporting of readings. On the other hand, they will receive CDM training, including validation, registration and verification.

## 6. Emergency procedure

When reading error of the meter exceeds the allowable range or any inconsistency occurs, the meter should be repaired immediately. The record should be kept by the CPA implementer.

When the fault of the meter exceeds the allowable tolerance or its malfunction occurs, the grid connected electricity generated by the proposed project will be resolved by following measures:

- The value of records for sold electricity will be adopted; or
- The conservative and reasonable methods agreed by both parties will be adopted; or
- If no agreement can be reached, arbitration in accordance with previous agreement will be preceded.

<b>E.8 Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)</b>
---

>>

Date of completion of the application of the baseline study and monitoring methodology is 30/09/2012.

### Innovative Carbon Investment Co., Ltd.

Address: Room 825, Jingchengjianguo, 5<sup>th</sup> Jianguomen North Avenue, Dongcheng District, Beijing 100005, P.R. China

Person in charge:

Lawrence Xu



Tel: 86-10-65174621

Fax: 86-10-65175899

Email: [Lawrence.xu@mailici.com](mailto:Lawrence.xu@mailici.com)



**Annex 1**

**CONTACT INFORMATION ON COORDINATING/MANAGING ENTITY and PARTICIPANTS  
IN THE PROGRAMME of ACTIVITIES**

Organization:	Zhongying Changjiang International New Energy Investment Co., Ltd
Street/P.O.Box:	T1 Jiangxia Avenue, Eastlake New Technology Development Zone
Building:	607room, Kaidi Building
City:	Wuhan City
State/Region:	Hubei Province
Postfix/ZIP:	430223
Country:	P.R. China.
Telephone:	027-67869276
FAX:	027-87992893
E-Mail:	xuefei@kaidihi.com
URL:	
Represented by:	Xuefei
Title:	General Manager of CDM department
Salutation:	Mr.
Last Name:	Xue
Middle Name:	
First Name:	Fei
Department:	Carbon Asset Management Centre
Mobile:	13871271546
Direct FAX:	027-87992893
Direct tel:	027-67869276
Personal E-Mail:	xuefei@kaidihi.com



SMALL-SCALE CDM PROGRAMME OF ACTIVITIES DESIGN DOCUMENT FORM  
(CDM SSC-PoA-DD) - Version 01



CDM – Executive Board

page 41

Organization:	National Development and Reform Commission of the People's Republic of China
Street/P.O.Box:	No.38 Yuetan South Street
Building:	
City:	Beijing
State/Region:	
Postfix/ZIP:	100824
Country:	P.R. of China
Telephone:	(010)68502963
FAX:	(010)68502358
E-Mail:	<a href="mailto:sunch@ndrc.gov.cn">sunch@ndrc.gov.cn</a>
URL:	
Represented by:	Sun Cuihua
Title:	Vice Director
Salutation:	Ms.
Last Name:	Sun
Middle Name:	
First Name:	Cuihua
Department:	
Mobile:	
Direct FAX:	(010)68502358
Direct tel:	(010)68502963
Personal E-Mail:	<a href="mailto:sunch@ndrc.gov.cn">sunch@ndrc.gov.cn</a>



**Annex 2**

**INFORMATION REGARDING PUBLIC FUNDING**

No public funding from Annex I countries is involved in the Project.



**Annex 3**

**BASELINE INFORMATION**

For details of the baseline information, please refer to the specific CPA-DD.



**Annex 4**

**MONITORING INFORMATION**

-----