CLEAN DEVELOPMENT MECHANISM
FORM FOR SUBMISSION OF BUNDLED SMALL SCALE PROJECT ACTIVITIES
(SSC-CDM-BUNDLE)

SECTION A. General description of the Bundle

A.1. Title of the Bundle:

Title: 12.82 MW Bundled Small Hydropower Project in Qiandongnan Autonomous Region, Guizhou Province, P. R. China.
Version number of the document: Version 04
Date: September 06, 2008

Revision history of the document:

Version of the Document	Date of the Document	Reason for Revision
Version 01	August 28, 2007	For Global Stakeholder Consultation
Version 02	April 14, 2008	Revise according to the Resolution of Corrective Action and Clarification Requests of JACO CDM
Version 03	August 18, 2008	Revise for Methodology Update
Version 04	September 06, 2008	Revise according to the Resolution of Corrective Action and Clarification Requests of JACO CDM

A.2. Description of the Bundle and the subbundles :

Project activity	Type	Category	Technology/Measure
Jinping Sandengkan Project	Renewable energy projects	Renewable Energy Generation for a Grid	Hydropower
Majingao Project	Renewable energy projects	Renewable Energy Generation for a Grid	Hydropower
Sancengdong Project	Renewable energy projects	Renewable Energy Generation for a Grid	Hydropower
Wawadong (I) Project	Renewable energy projects	Renewable Energy Generation for a Grid	Hydropower

The 12.82 MW Bundled Small Hydropower Project (hereafter referred to as the Bundled Project) is located at Qiandongnan Autonomous Region, Guizhou Province, P. R. China. It consists of Jinping Sandengkan small hydropower plant (hereafter referred to as Jinping Sandengkan Project), Majingao small hydropower plant (hereafter referred to as Majingao Project), Sancengdong small hydropower plant (hereafter referred to as Sancengdong Project), and Wawadong (I) small hydropower plant (hereafter referred to as Wawadong (I) Project). The total installed capacity of the Bundled Project is 12.82 MW.

The Jinping Sandengkan Project is located at Liangjiang River within Tonggu Town, Jinping County. It is designed to deliver discharge flow of 36.60 m^3/s with 15.77 m water head. The total installed capacity

of the Jinping Sandengkan Project is 4.8 MW with 0.762 MW of guarantee output. It is estimated that the feed-in electricity to the Guizhou Power Grid from the Jinping Sandengkan Project is approximately 17,791 MWh per year.

The Majingao Project is located at Liangwang River within Taiyong Town, Jianhe County. It is designed to deliver discharge flow of 13.11 m^3/s with 14.5 m water head. The total installed capacity of the Majingao Project is 1.5 MW with 0.219 MW of guarantee output. It is estimated that the feed-in electricity to the Guizhou Power Grid from the Majingao Project is approximately 4,520 MWh per year.

The Sancengdong Project is located at Liangxi River within Cengong County. It is designed to deliver discharge flow of 3.80 m^3/s with 82 m water head. The total installed capacity of the Sancengdong Project is 2.52 MW with 0.54 MW of guarantee output. It is estimated that the feed-in electricity to the Guizhou Power Grid from the Sancengdong Project is approximately 10,016 MWh per year.

The Wawadong (I) Project is located at Guimian River within Panxi Town, Jianhe County. It is designed to deliver discharge flow of 3.52 m^3/s with 135.5 m water head. The total installed capacity of the Wawadong (I) Project is 4 MW with 0.389 MW of guarantee output. It is estimated that the feed-in electricity to the Guizhou Power Grid from the Wawadong (I) Project is approximately 10,659 MWh per year.

A.3. Project participants:

Name of Party involved (*) ((host) indicates a host Party)	Private and/or public entity(ies) project participants (*) (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
China (host)	Jinping County Kaiyuan Hydropower Development Co.,Ltd. (project owner)	NO
Japan	Smart Energy Co., Ltd (purchasing party)	NO

SECTION B. Technical description of the Bundle:

B.1. Location of the Bundle:

B.1.1. Host Party(ies):

People's Republic of China (the "Host Country")

B.1.2. Region/State/Province etc.:

Qiandongnan Autonomous Region of Guizhou Province

B.1.3. City/Town/Community etc:

Jinping County, Jianhe County, and Cengong County

B.1.4. Details of physical location, including information allowing the unique identification of this Bundle:

The Bundled Project is sited within Qiandongnan Autonomous Region, Guizhou Province, China.

Jinping Sandengkan Project is located within Zhongchen Country which has geographical coordinates with east longitude of 108º48'37" ~ 109º24'35" and north latitude of 26º23'39" ~ 26º46'49".

Majingao Project is located within Taiyong Town, Jianhe County which has geographical coordinates with east longitude of 108º25' and north latitude of 26º24'~26º30'.

Sancengdong Project is located within Kelou Town, Cengong Country which has geographical coordinates with east longitude of 108º21'33" ~ 108º24'56" and north latitude of 27º20'50" ~ 27º20'13".

Wawadong (I) Project is located within Jianhe Country, dam has geographical coordinates with east longitude of 108º54'04" and north latitude of 26º42'43", power plant has geographical coordinates with east longitude of 108º53'54" and north latitude of 26º42'35".

Figure 1 shows the location of the Bundled Project.

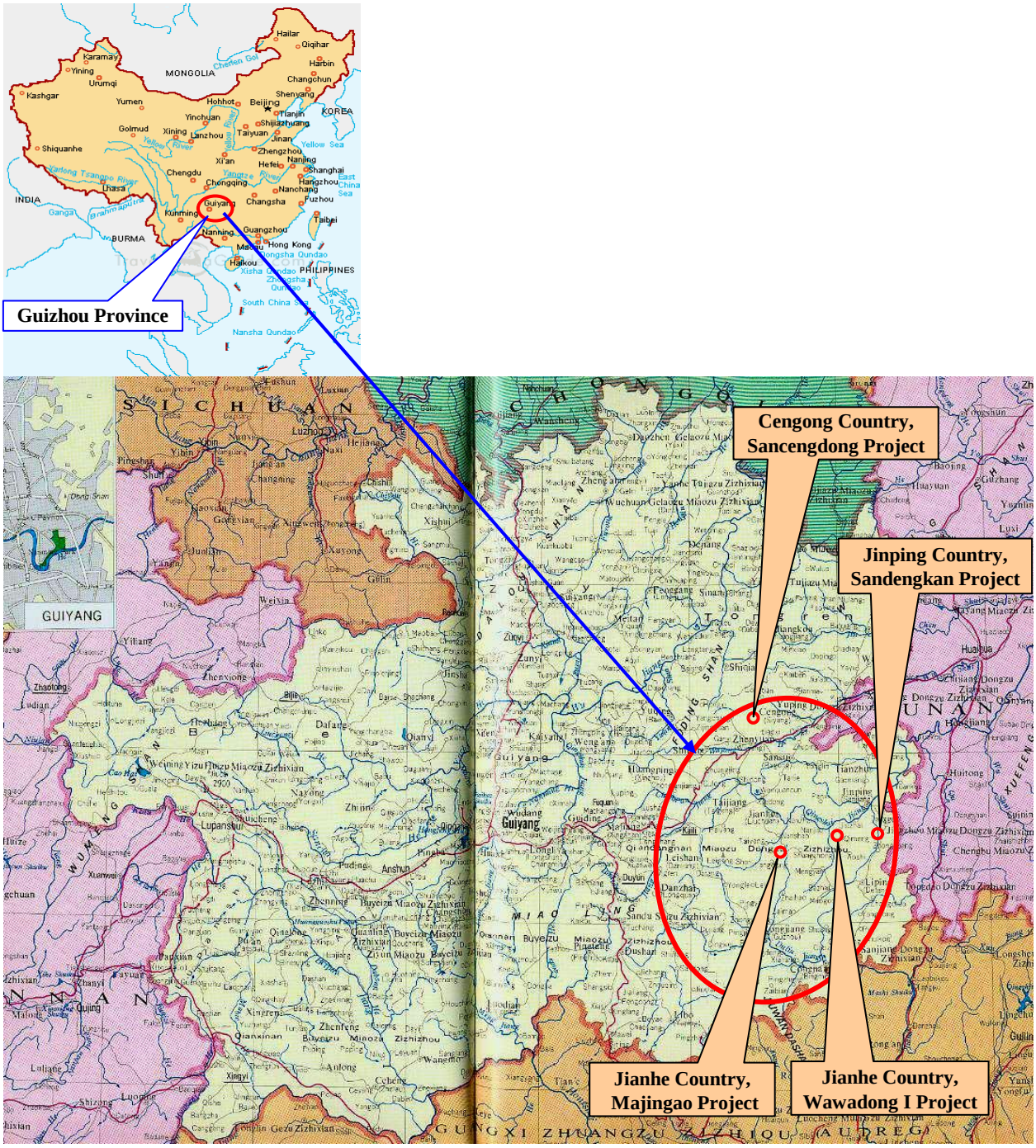

Figure 1: The location of the Bundled Project.

B.2. Type(s), category(ies) and technology/(ies)/Measure/(s) of the bundle:

Using the categorization of Appendix B to the *Simplified Modalities and Procedures for Small-scale CDM Project Activities*, the Bundled Project type and category are defined as follows:

Type I: Renewable energy projects

Category I.D.: Renewable Energy Generation for a Grid

The Bundled Project consists of the Jinping Sandengkan Project, Majingao Project, Sancengdong Project and Wawadong (I) Project. The methodology AMS.I.D. is applicable to renewable energy generation units that supply electricity to an electricity grid, which is the case for the Bundled Project. Moreover, the size of the Bundled Project is 12.82 MW, which is within the limit of 15 MW stipulated for the chosen small-scale methodology.

The Jinping Sandengkan Project is a new hydropower plant with three sets of 1.6 MW hydro turbines (ZDJP502-LH-140) and associated generators (SF1600-16/2150) to produce clean electricity without GHG emissions for CSPG via 35 kV transmission line.

The Majingao Project is a new hydropower plant at dam toe with three sets of 0.5 MW hydro turbines (ZD560-LH-80) and associated generators (SF500-10/1180*50) to produce clean electricity without GHG emissions for CSPG via 35 kV transmission line.

The Sancengdong Project is a new hydropower plant at dam toe with four sets of 0.63 MW hydro turbines (HL110-WJ-56) and associated generators (SFW-K630-6/990) to produce clean electricity without GHG emissions for CSPG via 35 kV transmission line.

The Wawadong (I) Project is a new hydropower plant at dam toe with two sets of 2 MW hydro turbines (HL130-WJ-71) and associated generators (SFW2000-6/1430) to produce clean electricity without GHG emissions for CSPG via 35 kV transmission line.

The turbines and generators are made in China. The key specification of the hydro turbines and the generators of the Bundled Project are listed in Table B.2.1.

Table B.2.1. Key technical indicators of the hydro turbine and the generator of the Bundled Project

	Project Name	**Jinping Sandengkan Project**	**Majingao Project**	**Sancengdong Project**	**Wawadong (I) Project**
Hydro Turbine	Turbine Type	ZDJP502-LH-40	ZD560-LH-80	HL110-WJ-56	HL130-WJ-71
	Water head	15.77m	14.5 m	82 m	135.5 m
	Rated power	1733 kW	500 kW	670.9 kW	2192.7 kW
	Rated speed	375 r/min	600 r/min	1000 r/min	1000 r/min
	Manufacture	Jiangxi Ganzhou Power Co., Ltd	Hunan Xinling Hydro Power Co., Ltd	Guangdong Chaozhou Huineng Co., Ltd	Zhejiang Jinhua Hydro Power Co., Ltd.
Generator	Generator Type	SF1600-16/2150	SF500-10/1180*50	SFW-K630-6/990	SFW2000-6/1430
	Rated Power	1600 kW	500 kW	630 kW	2000 kW
	Power Factor	0.8	0.8	0.8	0.8
	Rated Voltage	6.3 kV	0.4kV	0.4 kV	6.3 kV
	Manufacture	Jiangxi Ganzhou Power Co., Ltd	Hunan Xinling Hydro Power Co., Ltd	Guangdong Chaozhou Huineng Co., Ltd	Zhejiang Jinhua Hydro Power Co., Ltd.

With all technologies and facilities provided domestically, the Bundled Project involves no technology transfer from abroad.

B.3 Estimated amount of emission reductions over the chosen crediting period:

The project activity contributes emission reductions for about 36,252 tCO_2e per year during the first 7-year crediting period from Oct 2008 to Sep 2015.

Years	Annual estimation of emission reductions in tonnes of CO_2e
2008(Oct. To Dec. 2008)	9,063
2009	36,252
2010	36,252
2011	36,252
2012	36,252
2013	36,252
2014	36,252
2015(Jan. to Sept. 2015)	27,189
Total estimated reductions (tonnes of CO_2e)	253,764
Total number of crediting years	7
Annual average over the crediting period of estimated reductions (tonnes of CO_2e)	36,252

SECTION C. Duration of the project activity / Crediting period:

C.1. Duration of the Bundle

C.1.1. Starting date of the Bundle:

The starting date of Jinping Sandengkan Project: November 5, 2005 (date of the construction contract)
The starting date of Majingao Project: March 28, 2006 (date of the main equipment purchase contract)
The starting date of Cengong Sancengdong Project: March 17, 2006 (date of the main equipment purchase contract)
The starting date of Wawadong (I) Project: June 30, 2005 (date of the construction contract)

The earlier date of the construction contracts or main equipment purchase contract is determined as the starting date of the project activity.

C. 1.2. Expected operational lifetime of the project activity:

25 years, 0 month

C.2. Choice of crediting period and related information:

C.2.1. Renewable crediting period:

C.2.1.1. Starting date of the first crediting period:

October 01, 2008 or registration date, whichever is the latest date.

C.2.1.2. Length of the first crediting period:

7 years, 0 month

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

Not applicable.

C.2.2.2. Length:

Not applicable.

SECTION D. Application of a monitoring methodology:

In this PDD, emission factor of the Bundled Project is determined ex-ante. Therefore the electricity supplied to and drawn from the grid by the Bundled Project is an integral data to determine emission reductions. The monitoring plan is designed to monitor these two electricity data of the Bundled Project. The amount of net electricity supply to the grid (EG_y) can be calculated by $EG_{PJ\ to\ Grid,\ y} - EG_{Grid\ to\ PJ,\ y}$.

1. The organizational structure of monitoring

Smart Energy Co., Ltd. is responsible for the calculation of emission reductions of the Bundled Project. Companies involving the Bundled Project, Jinping County Kaiyuan Hydropower Development Co.,Ltd., Jianhe County Qianlian Hydropower Development Co.,Ltd., Cengong County Sancengdong Electric Power Co.,Ltd., and Jianhe County Jingjian Hydropower Development Co.,Ltd. are responsible for the operation of the individual Project within the Bundled Project.

Figure 2 describes for the detailed operation and management structure of the Bundled Project.

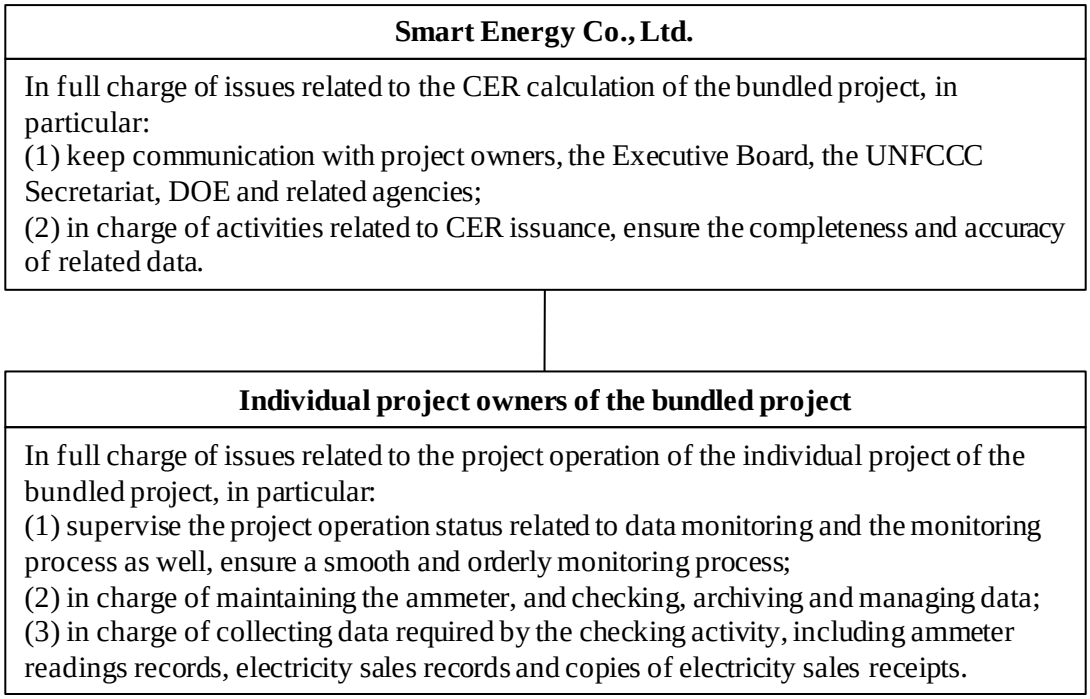

Figure 2 Monitoring Structure

Operation staff for each project will record the data periodically. One technician from the power plant and one financial staff will to crosscheck the data and administrate the monitoring work.
The Smart Energy Co., Ltd and designated agency will be in charge of training monitoring operator. The monitoring data of the power plants will be delivered to the designated who is responsible to check and verify the data and develop the final monitoring report.

2. Installation and calibration of monitoring equipments

The owners of the bundled project will make contract with the local electric power grid company for electricity supply after go into operation. The power output to the grid and input from the grid will be monitored and regulated:

- Electric meters to measure the power supplied to the grid in the projects will be installed and maintained according to the "Technical administrative code of electric energy metering (DL/T 448-2000)[1]". Examination and verification will be made by the project owners and the local electric power grid company before the meters come into operation.
- All the meters which have 0.5s level accuracy can measure the electricity both output to the grid and input from the grid.
- For the Jinpin Sandengkan project, an electric meter is installed in the Tonggu Substation, which belongs to the local electric power grid company.
- For the Jianhe Majinao project, an electric meter is installed in the Taiyong Substation, which belongs to the local electric power grid company.
- For the Cengong Sancengdong project, an electric meter is installed in the Longtian Substation, which belongs to the local electric power grid company.

[1] Technical administrative code of electric energy metering(DL/T 448-2000), issued by State Economic and Trade Commission of the People's Republic of China, 2000-10-03

- For the Jianhe Wawadong I project, two electric meters will be installed. One backup meter installed in the plant belongs to the project owner, the other one which will be used to measure the power supply is installed in the Panxi substation and belongs to the local grid company.
- All the meters should be examined annually and calibrated at least every three years by the entities designated by local electric power grid company. The accuracy of active and reactive power should be level 0.5s and 1s. All the examination and calibration should be operated according to egulations of the national power industry[3]. Records of examination and calibration should be sealed after verified by both the project owner and the local electric power grid company, then the records should be submitted to DOE. Neither of the two parties should unseal or modify the meter unilaterally without the other party.
- In any cases stated as follows, the meters should be examined and calibrated by the local electric power grid company within 10 days.
  (a). Reading errors of the meters overpass the regulated range.
  (b). After repair or modification for the broken meters.
  (c). Any parties that require to modify, calibrate or replace the meters, should announce the other party in advance, a representative from the other party should be sent to inspect the process of modification, calibration or replacement.

3. Data collection, storage and management

Operators of project and the local electric power Grid Company should record the data from the substation electric meters monthly.
In case the error of last month data overpass the regulated range, or the meter malfunctions, the data of the power supplied to the grid should be determined as follows:

(a). A conservative value can be estimated only if the project owner and the electric power grid company provided enough evidence to the DOE to prove its conservatism and appropriateness.
(b). In case the project owner and electric power grid company cannot obtain an agreement on the estimated value, arbitration by the regulation entities should be requested to maintain the appropriateness of the estimated value.

All the monitoring records, both in paper based documents and in computer based documents, should be kept by the project owners monthly. Copies of the electricity purchase receipt should also be kept, with monitoring plan, other documents such as maps, environment evaluation reports will be used to verify the monitoring data. The project owner should provide index of all the project documents and monitoring data which are kept and archived by the project owner during the crediting period and two years beyond crediting period, to the DOE as the purpose of verification. The CDM project management group is in charge of all the paper based documents and data, which should have at least one copy.
In case of unexpected destruction of the equipments, new meters should be installed by the entities designated by the electric power grid company. A conservatively estimated value of the power supplied to the grid during the period which the meter were broken.

4. Monitoring report

The CDM project manager should finish the monitoring report for last year, copies should be delivered to each project owner and Smart Energy Co.,Ltd. Accepted by the project owners, the report will be submitted to the DOE with the monitoring data for verification.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Project participants:

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