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:

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Sichuan Lengshuikou 12.1 MW Small-Scale Bundled Hydropower Project

A.2. Version and Date :

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Version: 01

Date: September 6, 2010

A.3. Description of the Bundle and the subbundles :

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Sichuan Lengshuikou 12.1 MW Small-Scale Bundled Hydropower Project (LSBHP), hereinafter also referred to as "the Project" or "the proposed project", includes three small-scale run-of-river diversion type hydropower stations, named Lengshuikou, Jinyuhe and Xuekoushan developed by Sichuan Mabian Tianhe Power Co., ltd. All the three stations are located in Xuekoushan River which is the first-level branch on the left bank of Mabian River in Mabian Yi Autonomous County, Leshan City, Sichuan Province, the People's Republic of China.

The Lengshuikou project (stage 1) is a newly built hydropower station. Its installed capacity is 6.4MW with a designed water head of 357m, a designed water flow of 2.26m^3/s, an average annual operation time of 4950hrs and an annual go-to-grid electricity of 24,210 MWh which is dispatched to the CCPG.

The Jinyuhe project (stage 2) is a newly built hydropower station. Its installed capacity is 2.5MW with a designed water head of 154.4m, a designed water flow of 1.40m^3/s, an average annual operation time of 5100hrs and an annual go-to-grid electricity of 10,466 MWh which is dispatched to the CCPG.

The Xuekoushan project (stage 3) is a newly built hydropower station. Its installed capacity is 3.2MW with a designed water head of 120.3m, the designed water flow of 3.30m^3/s, an average annual operation time of 4920 hrs and an annual go-to-grid electricity of 13,222MWh which is dispatched to the CCPG.

The proposed project has a total aggregated installed capacity of 12.1 MW, with an annual total go-to-grid electricity of 47,898 MWh transmitted to the CCPG. The reservoir surface area of the 3 stages are 70 m^2, 855 m^2 and 4,848 m^2 respectively, and the power density of the 3 stages are 91,428 W/m^2, 2,924 W/m^2 and 660 W/m^2.

The Project will lead to an estimated annual greenhouse gases (GHG) emission reductions of approximately 46,679tCO_2e over the chosen crediting period annually (7 years, renewable twice). The total GHG emission reductions over the first 7 years crediting period are 326,753tCO_2e.

A.4. Project participants:

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Name of Party	Private and/or public	Kindly indicate if the Party

involved(*)((host) indicates a host Party)	entity(ies) project participants (*) (as applicable)	involved wishes to be considered as project participant (Yes/No)
P. R. China (host)	Sichuan Mabian Tianhe Power Co., Ltd.	No
Netherlands	CEZ a.s.	No
(*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party (ies) involved is required.		

Sichuan Mabian Tianhe Power Co., Ltd is a Limited Company registered under the law of the People's Republic of China, and the sole investor, constructor, operator, and owner of the proposed project.

ČEZ a.s. is one of the largest power utilities in Central and Eastern Europe, and ranking in the top 10 Utilities by size and number of customers in all Europe.

SECTION B. Technical description of the Bundle:

B.1. Location of the Bundle:

B.1.1. Host Party(ies):

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People's Republic of China

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

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Sichuan Province

B.1.3. City/Town/Community etc:

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Leshan City/Mabian Yi Autonomous County

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

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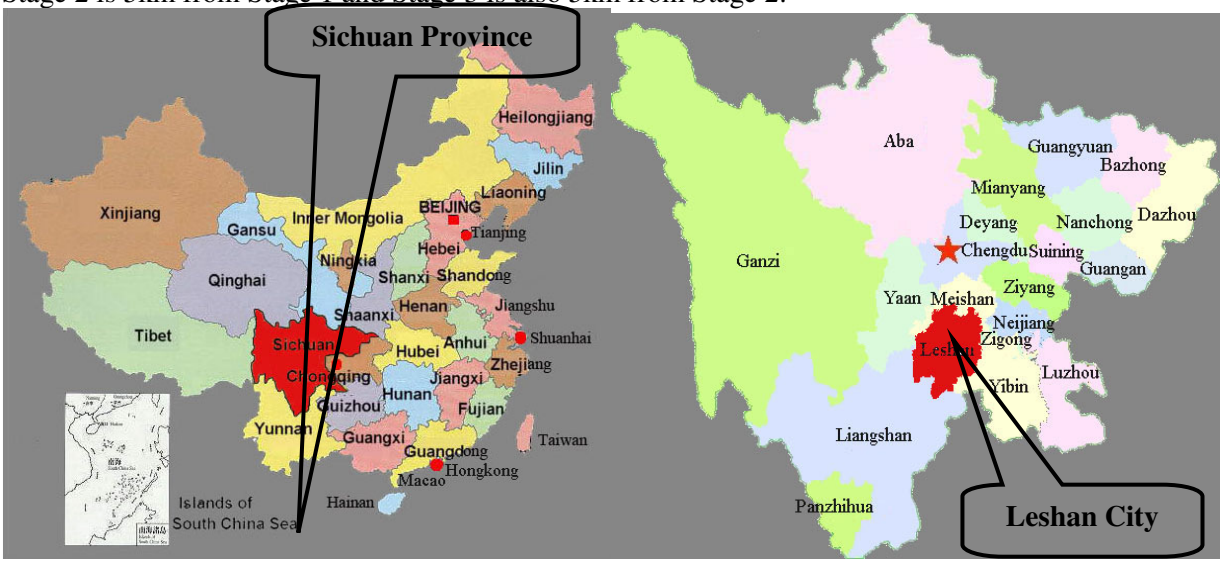
The Lengshuikou project is located in Wenquandang Town, 40 km from Mabian County. Its plant geographical coordinates are east longitude of 103º25' 01"and north latitude of 28º55'13" and the dam is 1.6km from it.

The Jinyuhe project is located in Wenshuidang Town, 29 km from Mabian County. Its plant geographical coordinates are east longitude of 103º26'13" and north latitude of 28º54'30" and the dam is 2.5km from it.

The Xuekoushan project is located in Xuekoushan Town, 25 km from Mabian County. Its plant geographical coordinates are east longitude of 103º27'53" and north latitude of 28º55'43" and the dam is 4.2km from it.

Stage 2 is 5km from Stage 1 and Stage 3 is also 5km from Stage 2.



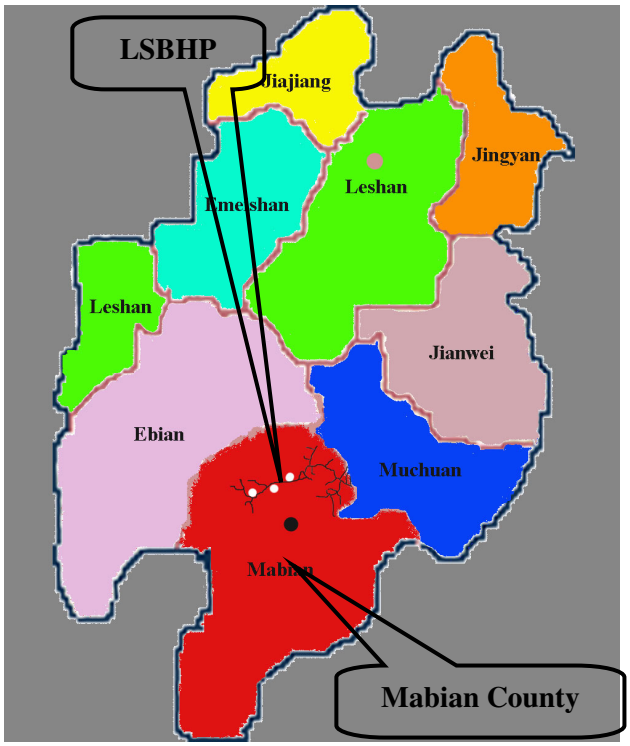


Figure 1. Location of LSBHP

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

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According to the categorization of the latest updated version of Appendix B to the Simplified Modalities and Procedures for Small-scale CDM Project Activities, the project type and category are defined as follows:

Type I: Renewable energy projects
Project Category I.D. Renewable Energy Generation for a Grid

Technology:

The three stage hydropower projects are diversion type hydropower projects organised in parallel (i.e. each stage sends back to Xuekoushan River the turbinated water). The construction of each stage of the proposed project mainly consists of:

- Dam;
- Tunnel inlet sluice;
- Diversion tunnel (culvert, tunnel);
- Fore-bay;
- Pressure pipelines
- Power house, comprising, inter alia, of a machine hall consisting of a separate turbine floor and generator floor; a control room housing all the electrical control panels required for operation of the units; annex rooms and auxiliary floors for auxiliary equipment; transformer deck; out door switchyard.

Each stage utilizes two sets of turbine-generator. Turbine and generators are newly manufactured by Sichuan Taiji Electrical and Mechanical Equipment Co., Ltd. The key technical indicators of the hydro turbines and the generators of the project are listed in Table A1.

Table 1 Key Technological Parameters of the Project

	Stage 1	Stage 2	Stage 3
Turbine			
Type	CJA237-W100/2×9.8	HLD54-WJ-71	HLA542-WJ-90
Manufacturer	Sichuan Taiji Electrical and Mechanical Equipment Co., Ltd.[1]		
Number	2	2	2
Rated rotation speed(r/min)	750	1000	750
Rated water head(m)	357	150	118
Rated flowing(m^3/s)	1.13	1.01	1.65
Rated power(kW)	3404	1352	1757.2
Generator			
Type	SFW_{3200}-8/1730	SFW_{1250}-6/1430	SFW_{1600}-8/1730
Manufacture	Sichuan Taiji Electrical and Mechanical Equipment Co., Ltd.[4]		
Number	2	2	2
Rated voltage(kV)	6.3	6.3	6.3

[1] Manufacture contract of turbine-generator of Lengshuikou, Jinyuhe and Xuekoushan between Sichuan Mabian Tianhe Co.,Ltd. and Sichuan Taiji Electrical and Mechanical Equipment Co., Ltd.(February 12th 2007,September 17th 2007,September 17th 2008)

Rated rotation speed(r/min)	750	1000	750
Rated installed capacity(MW)	3.2	1.25	1.6
Main transformer			
Type	S9-8000/35KV	SF9-4000/35KV	SF9-4000/35KV
Number	1	1	1
Rated Capacity	8000kVA	4000kVA	4000kVA

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

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The project will employ a renewable crediting period (7 years duration, renewable twice). The first crediting period is from January 1st 2011 to December 31st 2017.The estimated average annual and total amount of GHG emission reductions over the first 7 years crediting period are 46,679 tCO_2e and 326,753 tCO_2e respectively.

The total estimation of the emission reductions during the first crediting period is provided in Table 2.

Table 2 The estimated amount of emission reductions over the first crediting period from the project

Years	Annual estimation of emission reduction in tons of CO_2e
2011	46,679
2012	46,679
2013	46,679
2014	46,679
2015	46,679
2016	46,679
2017	46,679
Total estimated reductions(tons of CO_2e)	326,753
Total number of crediting years	7
Annual average over the crediting period of estimated reduction(tons of CO_2e)	46,679

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

C.1. Duration of the Bundle

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C.1.1. Starting date of the Bundle:

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December 20th, 2006

The date is the earliest construction contract signed date among three stages.

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

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C.2.1. Renewable crediting period:

>>
7*3 years

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

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01/01/2011 or the date of the project registration by the UNFCCC whichever is later

C.2.1.2. Length of the first crediting period:

>>
7 years

C.2.2. Fixed crediting period:

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C.2.2.1. Starting date:

>>
Not applicable

C.2.2.2. Length:

>>
Not applicable

SECTION D. Application of a monitoring methodology:

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D.1 Data and parameters monitored:

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Data / Parameter:	$EG_{1,out,y}$
Data unit:	MWh
Description:	Electricity supplied to the grid by Stage 1 to the grid in year y
Source of data to be used:	Electricity meter reading
Value of data:	24,120MWh
Description of measurement methods and procedures to be applied:	The net supply of power to the grid by the project is measured through national standard electricity metering instruments. The reading of the electricity meter will be hourly measured and monthly recorded. The accuracy of electricity meter is 0.5s.
QA/QC procedures:	According to national standards, meter will be calibrated periodically. Data measured by meters will be cross checked by electricity sales receipt.
Any comment:	$EG_{1,y} = EG_{1,out,y} - EG_{1,in,y}$

Data / Parameter:	$EG_{1,in,y}$
Data unit:	MWh
Description:	Electricity bought from the grid by Stage 1 in year y
Source of data to be used:	Electricity meter reading at the connection point between the proposed project and the grid

Value of data:	0MWh in PDD and real value according to the meter reading
Description of measurement methods and procedures to be applied:	The net supply of power to the grid by the project is measured through national standard electricity metering instruments. The reading of the electricity meter will be hourly measured and monthly recorded. The accuracy of electricity meter is 0.5s.
QA/QC procedures:	According to national standards, meter will be calibrated periodically. Data measured by meters will be cross checked by electricity sales receipt.
Any comment:	$EG_{1,y} = EG_{1,out,y} - EG_{1,in,y}$

Data / Parameter:	$Cap_{1,PJ}$
Data unit:	W
Description:	Installed capacity of stage 1 after the implementation of the project activity.
Source of data to be used:	Project site.
Value of data	6,400,000
Description of measurement methods and procedures to be applied:	Determine the installed capacity based on the recognized standards yearly.
QA/QC procedures to be applied:	-
Any comment:	-

Data / Parameter:	$A_{1,PJ}$
Data unit:	m^2
Description:	Area of the reservoir measured in the surface of the water of stage 1, when the reservoir is full.
Source of data to be used:	Project site.
Value of data	70
Description of measurement methods and procedures to be applied:	Measured from topographical surveys yearly
QA/QC procedures to be applied:	-.
Any comment:	-

Data / Parameter:	$EG_{2,out,y}$
Data unit:	MWh
Description:	Electricity supplied to the grid by Stage 2 to the grid in year y
Source of data to be used:	Electricity meter reading
Value of data:	10,466MWh
Description of measurement methods and procedures to be applied:	The net supply of power to the grid by the project is measured through national standard electricity metering instruments. The reading of the electricity meter will be hourly measured and monthly recorded. The accuracy of electricity meter is 0.5s.
QA/QC procedures:	According to national standards, meter will be calibrated periodically. Data measured by meters will be cross checked by electricity sales receipt.

Any comment:	$EG_{2,y} = EG_{2,out,y} - EG_{2,in,y}$

Data / Parameter:	$EG_{2,in,y}$
Data unit:	MWh
Description:	Electricity bought from the grid by Stage 2 in year y
Source of data to be used:	Electricity meter reading at the connection point between the proposed project and the grid
Value of data:	0MWh in PDD and real value according to the meter reading
Description of measurement methods and procedures to be applied:	The net supply of power to the grid by the project is measured through national standard electricity metering instruments. The reading of the electricity meter will be hourly measured and monthly recorded. The accuracy of electricity meter is 0.5s.
QA/QC procedures:	According to national standards, meter will be calibrated periodically. Data measured by meters will be cross checked by electricity sales receipt.
Any comment:	$EG_{2,y} = EG_{2,out,y} - EG_{2,in,y}$

Data / Parameter:	$Cap_{2,PJ}$
Data unit:	W
Description:	Installed capacity of stage 2 after the implementation of the project activity.
Source of data to be used:	Project site.
Value of data	2,500,000
Description of measurement methods and procedures to be applied:	Determine the installed capacity based on the recognized standards yearly.
QA/QC procedures to be applied:	
Any comment:	-

Data / Parameter:	$A_{2,PJ}$
Data unit:	m^2
Description:	Area of the reservoir measured in the surface of the water of stage 2, when the reservoir is full.
Source of data to be used:	Project site.
Value of data	855
Description of measurement methods and procedures to be applied:	Measured from topographical surveys yearly
QA/QC procedures to be applied:	-
Any comment:	-

Data / Parameter:	$EG_{3,out,y}$
Data unit:	MWh
Description:	Electricity supplied to the grid by Stage 3 to the grid in year y

Source of data to be used:	Electricity meter reading
Value of data:	13,222MWh
Description of measurement methods and procedures to be applied:	The net supply of power to the grid by the project is measured through national standard electricity metering instruments. The reading of the electricity meter will be hourly measured and monthly recorded. The accuracy of electricity meter is 0.5s.
QA/QC procedures:	According to national standards, meter will be calibrated periodically. Data measured by meters will be cross checked by electricity sales receipt.
Any comment:	$EG_{3,y} = EG_{3,out,y} - EG_{3,in,y}$

Data / Parameter:	$EG_{3,in,y}$
Data unit:	MWh
Description:	Electricity bought from the grid by Stage 3 in year y
Source of data to be used:	Electricity meter reading at the connection point between the proposed project and the grid
Value of data:	0MWh in PDD and real value according to the meter reading
Description of measurement methods and procedures to be applied:	The net supply of power to the grid by the project is measured through national standard electricity metering instruments. The reading of the electricity meter will be hourly measured and monthly recorded. The accuracy of electricity meter is 0.5s.
QA/QC procedures:	According to national standards, meter will be calibrated periodically. Data measured by meters will be cross checked by electricity sales receipt.
Any comment:	$EG_{3,y} = EG_{3,out,y} - EG_{3,in,y}$

Data / Parameter:	$Cap_{3,PJ}$
Data unit:	W
Description:	Installed capacity of stage 3 after the implementation of the project activity.
Source of data to be used:	Project site.
Value of data	3,200,000
Description of measurement methods and procedures to be applied:	Determine the installed capacity based on the recognized standards yearly.
QA/QC procedures to be applied:	-
Any comment:	-

Data / Parameter:	$A_{3,PJ}$
Data unit:	m^2
Description:	Area of the reservoir measured in the surface of the water of stage 3, when the reservoir is full.
Source of data to be used:	Project site.
Value of data	4848
Description of measurement methods and procedures to be applied:	Measured from topographical surveys yearly

QA/QC procedures to be applied:	-
Any comment:	-

D.2 Description of the monitoring plan:

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This section details the steps taken to monitor on a regular basis the GHG emissions reductions from the Sichuan Lengshuikou 12.1 MW Small-Scale Bundled Hydropower Project. The Monitoring Plan for this project has been developed to ensure that from the start, the project is well organized in terms of the collection and archiving of complete and reliable data.

1. Monitoring organization

Prior to the start of the crediting period, the organization of the monitoring team will be established. Clear roles and responsibilities will be assigned to all staff involved in the CDM project and a single CDM Manager will be nominated as shown in Figure 2. The CDM Manager will have the overall responsibility for the monitoring system on this project.

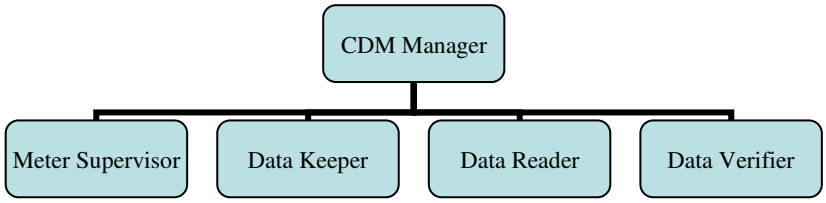

Figure 2 CDM monitoring team

2. Monitoring parameter

Given the emission factor is ex-calculated and according to the Methodology AMS-I.D.(version 13), the only data to be monitored is electricity supplied to the grid and purchased by the project (detailed in B.7.1).

3. Monitoring equipment and installation

Electricity meters should meet the relevant local standards at the time of installation. This means that, before installation, the meters should be factory calibrated by the manufacturer. The meters will be installed by either the project developer or the grid company according to the Chinese standard "electricity meter installation technical management code" (DL/T448-2000). The meters must be pasted with seal after installation or calibration. The seal is forbidden to rip by either party independently.

Totally four electricity meters with accuracy of 0.5s will be installed: No.1, No.2 and No.3 (M1, M2 and M3) will be installed respectively at the high voltage export end of main transformer of each station to monitor the go-to-grid and purchased electricity of each stage hydropower station as back-up meters.No.4 (M4) will be installed at the import end of substation to monitor the go-to-grid and purchased electricity of the project as the main meter. Generally the data read from M4 is the counting electricity. The data sum of M1+M2+M3 subtracting the line loss is used when M4 has some fault.

And project owner will purchase electricity from power grid for emergency case and construction period. So no fossil fuel will be used for the project.

Electrical grid connection diagram is shown in Figure 3.

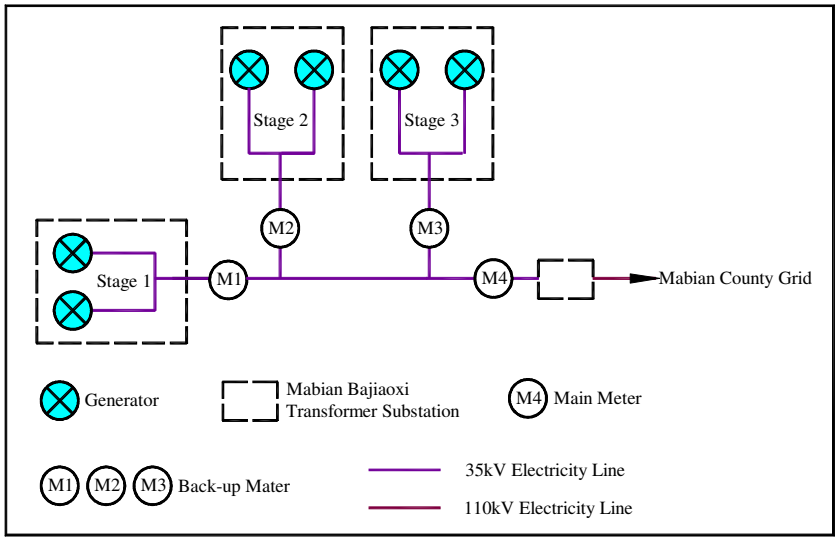

Figure 3 Electrical grid connection diagram

Area of the reservoir measured in the surface of the water, when the reservoir is full. It will be measured from topographical surveys.

4. Data recording procedure

The data is measured hourly and recorded monthly. The project owner provides the power grid company with sales receipts, and preserves the copies of the sales receipts. The power grid company provides the project owner with data of power imported from power grid. The project owner provides DOE with record of net power generation data and copies of sales receipts.

5. Quality Assurance (QA)/Quality Control (QC)

The project developer will sign an agreement with the grid company to specify the QA procedure for measurement and calibration to ensure the measurement accuracy of the main meter. Internal auditing, management review and corrective actions will be set up in the management system of the proposed project.

In case the following circumstances occur on the main meter:

- any abnormal circumstances identified
- meter failure
- meter is repaired or replaced due to faults of the meter parts

The project developer and the grid company will ensure informing the counterparty immediately to jointly appoint a qualified third party conduct appropriate action accordingly. In the mean time, readings from the backup meter that is owned and managed by the project developer will be adopted.

6. Data and records management

At the end of each month the monitoring data needs to be filed electronically. The electronic files need to have CD back-up or print-out. The project developer needs to keep electricity sale and purchase invoices.

All written documentation such as the records, the EIA and the PDR, should be stored and should be available to the verifier so that the reliability of the information may be checked. In order to make it easy for the verifier to retrieve the documentation and information in relation to the project emission reduction verification, the project developer should provide a document register. The document management system will be developed to ensure adequate document control for CDM purposes.

The dedicated CDM Manager of the project developer is responsible for checking the data (according to a formal procedure) and the CDM Manager will be responsible for managing the collection, storage and archive of all data and records. A procedure will be developed to manage the CDM record keeping arrangements. All the data collected as part of monitoring will be achieved electronically and be kept at least 2 years after the end of the last crediting period.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

Organization:	Sichuan Mabian Tianhe Power Co., Ltd.
Street/P.O.Box:	No.39 Ya jia xiang
Building:	
City:	Minjian Town，Mabian Yi Autonomous County, Leshan City
State/Region:	Sichuan Province
Postfix/ZIP:	614600
Country:	People's Republic of China
Telephone:	+86 (0)833 4521118
FAX:	+86 (0)833 4521118
E-Mail:	mbth@yahoo.cn
URL:	
Represented by:	
Title:	Board Chairman
Salutation:	Mr.
Last Name:	Shen
Middle Name:	
First Name:	Jing
Department:	
Mobile:	
Direct FAX:	+86 (0)833 4521118
Direct tel:	+86 (0)833 2823998
Personal E-Mail:	

Organization:	CEZ a.s
Street/P.O.Box:	Duhová 2/1444 Praha 4
Building:	
City:	Prague
State/Region:	
Postfix/ZIP:	140 53
Country:	Czech Republic
Telephone:	+420 211 041 111
FAX:	+420 211 042 050
E-Mail:	cez@cez.cz
URL:	www.cez.cz
Represented by:	
Title:	Ms.
Salutation:	
Last Name:	Eva
Middle Name:	
First Name:	Polanská
Department:	Environmental investment
Mobile:	+420 725 628 105
Direct FAX:	+420 211 042 050
Direct tel:	+420 211 042 592
Personal E-Mail:	eva.polanska@cez.cz