

MONITORING REPORT

Version 03 27/12/2010

Yiyang Xiushan Hydropower Project, P.R. China

Registered Reference Number in CDM: 1744

Monitoring Period: 01/10/2007-09/05/2009

SECTION A. General description of the project activity

A.1. Brief description of the project activity: >>

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Yiyang Xiushan Hydropower Project activity (hereinafter known as “the Project”) is located in the lower reaches of Zijiang River at Xiushan Town, Taojiang County, Yiyang City, Hunan Province, P.R. China. The main purpose of the Project activity is to generate electricity by using the renewable hydro source. The Project will achieve greenhouse gas emissions reduction by partly avoiding operation of existing thermal power plant and future capacity expansion of fossil fuel-based generation in CCPG.

The project employs 5 units of GZTF08-wp-625 turbines, and 5 units of SFWG13-80/6630 generators matched with turbines. The total installed capacity of the project is 65MW. The construction started at 18/08/2005, and the project was put into operation in 01/10/2007.

During this Monitoring Period, the total emission reduction achieved is 353,256tCO_{2e}

Year	2007	2008	2009	Total
Emission Reductions	27,677 tCO _{2e}	219,059 tCO _{2e}	106,520 tCO _{2e}	353,256 tCO _{2e}

A.2. Project Participants

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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)
People's Republic of China (Host)	Taohuajiang Energy Development Co., Ltd, Taojiang County	No

A.3. Location of the project activity:

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The Project is located in the lower reaches of Zijiang River, Xiushan Town, Taojiang County, Yiyang City of Hunan Province.

The exact geographic project site is: Longitude: 112°11' E Latitude: 28°51' N

A.4. Technical description of the project

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The main contractures of the project include dam, outlet structure, water inlet structure, power house and switching station, and etc, and the powerhouse is built right after the dam. The project employs 5 units of GZTF08-wp-625 turbines, and 5 units of SFWG13-80/6630 generators. Water would drive the turbines and generators to produce electricity. The electricity would be delivered to Hunan Provincial Grid through two transmission line, which is “Xiuguan” line and “Xiuxiao” line. Correspondingly the two substations are Niutanhe substation and Xiaojiaoshan substation. The technical process diagram of the project is as follows:

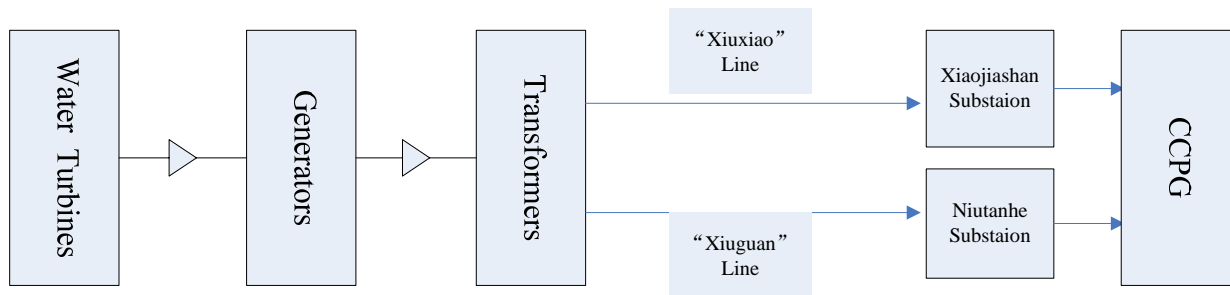


Figure 1: Technical process diagram

A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity:

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The approved consolidated baseline and monitoring methodology ACM0002 version 06:
 “Consolidated baseline methodology for grid-connected electricity generation from renewable source”
 “Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources”

A.6. Demonstration to confirm that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction:

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The project is a renewable energy project, which aimed to produce clean energy with hydro resources and achieve GHG emissions reduction by partly avoiding operation of existing thermal power plant and future capacity expansion of fossil fuel-based generation in CCPG. It is obvious that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction.

A.7. Demonstration that the project has not created another form of environmental credit (for example renewable energy certificates):

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In 10/05/2009, the project was registered as a CDM project and the crediting date starts from 10/05/2009¹.
 From the commission date (01/10/2007) to registration date (10/05/2009), the project does not create any form of environmental credit. The project owner would only apply for registration as a VCS project for GHG emissions achieved between 01/10/2007 to 10/05/2009.

A.8. Project rejected under other GHG programs (if applicable):

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Not applicable.
 In 10/05/2009, the project was registered as a CDM project.

A.9. Proof of Ownership:

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Approval of Feasibility Study Report issued by Hunan Provincial Development and Reform Commission
 Business License of Taohuajiang Energy Development Co., Ltd, Taojiang County
 Land Usage Certification to Taohuajiang Energy Development Co., Ltd, Taojiang County about the Xiushan Hydropower Project.

¹ <http://cdm.unfccc.int/Projects/DB/DNV-CUK1205730913.74/view>

A.10. Projects that reduce GHG emissions from activities that participate in an emissions trading program (if applicable):

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In 10/05/2009, the project was registered as a CDM project and the crediting date starts from 10/05/2009².

From the commission date (01/10/2007) to registration date (10/05/2009), the project does not create any form of environmental credit and so not involved in an emission trading program.

The project owner would only apply for registration as a VCS project for GHG emissions achieved between 01/10/2007 to 10/05/2009.

A.11. Name of responsible person(s)/entity(ies):

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HUNAN TIANJI ENERGY CONSERVATION TECHNOLOGY DEVELOPMENT CO.,LTD.

Ouyang Jun hntj16888@vip.163.com

3E Energy Technology Consulting Co., Ltd

TSU, climatecc@163.com

² <http://cdm.unfccc.int/Projects/DB/DNV-CUK1205730913.74/view>

SECTION B. Implementation of the project activity**B.1. Implementation status of the project activity**

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As described by the registered PDD, the construction start date is 18/08/2005. The project was put into operation in 01/10/2007. During this monitoring period, no special events happened, which could impact the applicability of the applied methodology. The power plant is in normal operation.

B.2. Revision of the monitoring plan

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Not applicable.

B.3. Request for deviation applied to this monitoring period

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Not applicable.

B.4. Notification or request of approval of changes

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Not applicable.

SECTION C. Description of the monitoring system

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1. Monitoring system

As described in monitoring plan in the registered PDD and Power Purchase Agreement, the electricity generated by the proposed project is connected into the CCPG through Niutanhe Substation and Xiaojiasha Substation, which in correspondingly the transmission line are named as “Xiuguan” line and “Xiuxiao” line.

M1 and M2 are the main meters, which are installed at the substations. They are used for transaction and monitoring the electricity supplied to CCPG.

M3 and M4 are the auxiliary meters, which are installed at the project site. They are used to monitoring electricity drawn from the CCPG, as described by the PDD.

Figure 2 is the monitoring system diagram of the proposed project.

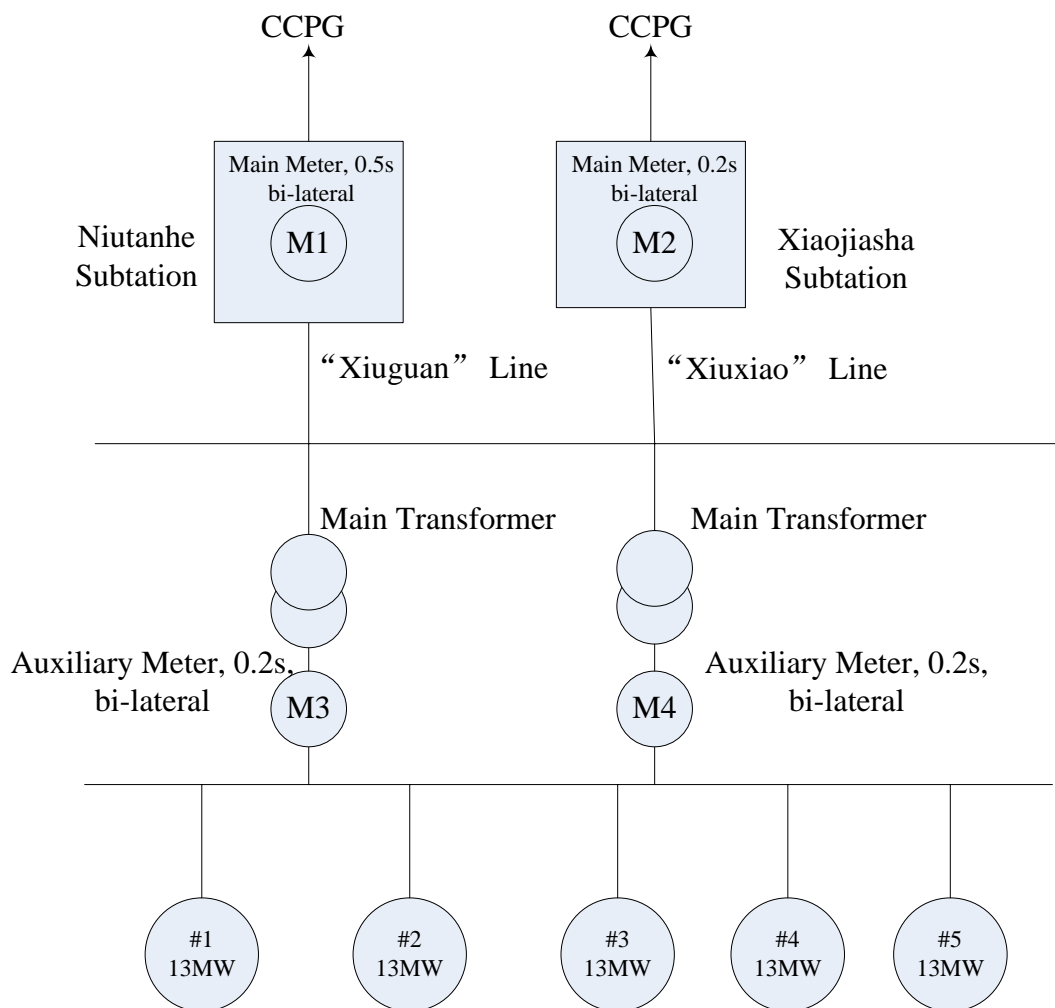


Figure 2: the monitoring system diagram of the proposed project.

2. Operational and Management Structure

The operational and management structure of the project is shown in Fig 3. The respective responsibilities of each department are as follows:

General Manager: Leader of the CDM monitoring team. Take in charge of issues related to the CDM affairs, such as track and control the development CDM; Perform Final examination of CDM related documents.

Chief Engineer: Support General Manager’s work in CDM monitoring. Temporally take the responsibility of CDM monitoring leader when General Manager is not available.

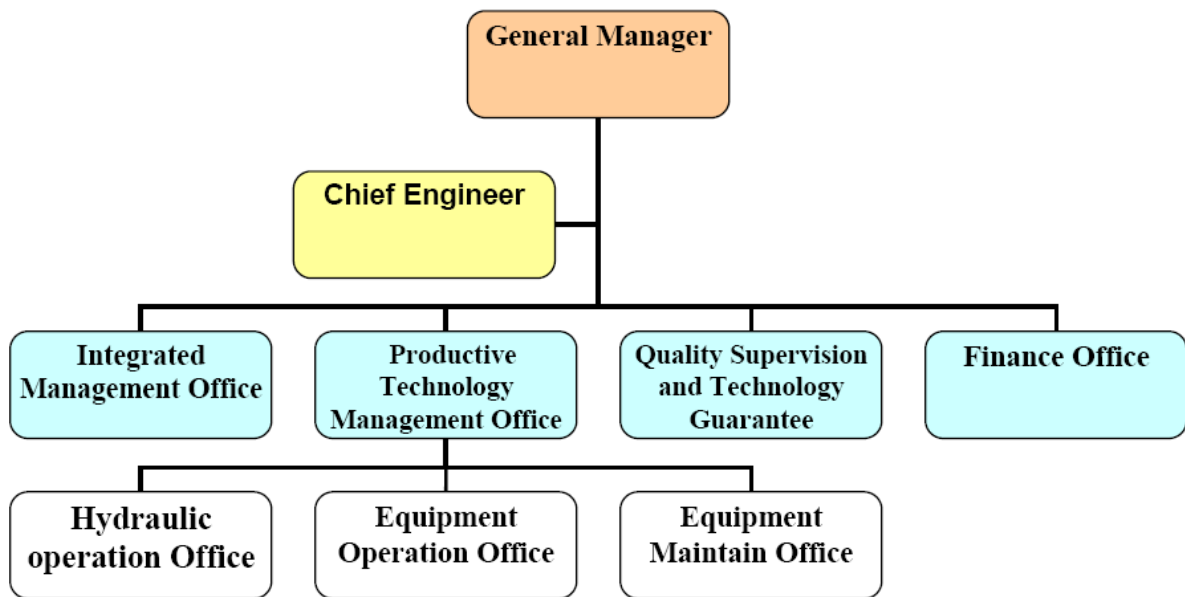
Integrated Management Office: Archive the CDM related documents; Coordinate parallel departments when there is dispute.

Productive Technology Management Office: Meter calibration and equipment maintenance; Record meter readings every month.

Quality Supervision and Technology Guarantee: Perform double-check to documents or statistics before archiving.

Finance Office: Collect and Provide finance related documents, such as sales receipts, for double-checking.

All the people involved would be trained before they take the position in monitoring team.



3. Data collection

Electricity supplied to the Grid (EG_y) and Electricity drawn from the Grid (EG_{aux}) are continuously measured by the meters installed. At 24:00 on the last day of every month, a three part group (Hunan Grid Company, local substations, and the project owner) would record the monthly meter readings of M1 and M2 and also confirm jointly. After that, the electricity transaction would be done based on the confirmed monthly data. In addition, the daily readings are also manually recorded by the project owner. Project owner would also record the monthly meter readings of M3 and M4, which used for calculation of the electricity drawn from CCPG, and the data would be cross check with main meter readings and sales receipts.

4. Emergency procedures

If the malfunction happened to the meters, the related records would be made and problems should be reported and settled quickly jointly by Grid Company and the Project owner, and the emissions reduction during this malfunction period would not be claimed.

SECTION D. Data and parameters

D.1. Data and parameters determined at registration and not monitored during the monitoring period, including default values and factors

Data / Parameter:	$EF_{CM,y}$
Data unit:	tCO ₂ e/MWh
Description:	CM emission factor of CCPG
Source of data used:	Notification on Determining Baseline Emission Factor of China/ registered PDD
Value(s) :	0.9436
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Used for Baseline emission calculation
Additional comment:	-

D.2. Data and parameters monitored

Data / Parameter:	EG_y		
Data unit:	MWh		
Description:	Electricity supplied to CCPG by the project in year y		
Measured /Calculated /Default:	Measured		
Source of data:	Meter records		
Value(s) of monitored parameter:	Refer to section E.1		
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Used for Baseline emission calculation		
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	Meter	M1	M2
	SN	03725068	03783924
	Location	Niutanhe Substation	Xiaojiashan Substation
	Model / Type	ABB AIN RTAL-X	
	Accuracy class	0.5s	0.2s
	Validity period	21/09/2007-20/09/2008 18/09/2008~17/09/2009	
	Calibration frequency	At least once a year.	
	Calibration entity	Measurement and Testing Centre of Yiyang Electric Power Bureau.	
Measuring/ Reading/ Recording frequency:	Monthly		
Calculation method (if applicable):	-		
QA/QC procedures applied:	EG_y from meter records would be double-checked against the electricity sales receipts to identify if it is reasonable. Conservation value would be adopted if there is small and reasonable difference.		

Data / Parameter:	EG_{aux}
Data unit:	MWh

Description:	Electricity drawn from CCPG by the project in year y		
Measured /Calculated /Default:	Measured		
Source of data:	Meter records		
Value(s) of monitored parameter:	Refer to section E.1		
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Used for Baseline emission calculation		
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	Meter	M3	M4
	SN	20050947020005	20050947020009
	Location	Project site	Project site
	Model / Type	DTSD341	
	Accuracy class	0.2s	0.2s
	Last calibration	21/09/2007-20/09/2008	
	Validity period	18/09/2008~17/09/2009	
	Calibration frequency	At least once a year.	
Calibration entity	Measurement and Testing Centre of Yiyang Electric Power Bureau.		
Measuring/ Reading/ Recording frequency:	Monthly		
Calculation method (if applicable):	-		
QA/QC procedures applied:	EG _{aux} from the auxiliary meters M3&M4 records would be double-checked against the records of main meters M1&M2. Sales receipts would also be used for validity checking.		

Data / Parameter:	A _{PJ}
Data unit:	m ²
Description:	Surface area at the full reservoir level
Measured /Calculated /Default:	Measured
Source of data:	Project site
Value(s) of monitored parameter:	6,300,000m ²
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Used for project emission calculation
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	A _{PJ} has been measured through an engineering survey by Hunan Investigation and Design Institute of Water Conservancy and Electric Power.
/ Reading/ Recording frequency:	Once at the start of the operation of the proposed project.
Calculation method (if applicable):	-
QA/QC procedures applied:	Hunan Investigation and Design Institute of Water Conservancy and Electric Power is a qualified third party institute, and the measured data

was cross-checked with the approved FSR.

SECTION E. Emission reductions calculation

E.1. Baseline emissions calculation

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$$BE_y = EG_{net} \times EF_y = (EG_y - EG_{aux}) \times EF_y$$

The detailed calculation procedure is described below:

(NOTE: There are little differences between the records from meters and sales receipts. The reason is because the project owner keep the results to four decimal places, while in the sales receipts it was rounded up or down to 2 decimal places for electricity supplied to the grid and 3 decimal places for electricity drawn from the grid. However, the conservative one is selected in CER calculation.)

Table 1 EG_y determination-total

Period	EG _y by meters records		EG _y by meters records (Total)	EG _y by sales receipts	EG _y for CERs calculation
	Xiuguan Line	Xiuxiao Line			
	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh
	A	B	C=A+B	D	E=min (C,D)
01/10/2007-31/10/2007	584.3992	373.5336	957.9328	957.93	957.9300
01/11/2007-30/11/2007	2.6136	1053.8000	1056.4136	1056.41	1056.4100
01/12/2007-31/12/2007	3.2648	915.5520	918.8168	918.82	918.8168
01/01/2008-31/01/2008	78.5400	1411.5200	1490.0600	1490.06	1490.0600
01/02/2008-29/02/2008	2.4288	1453.2320	1455.6608	1455.66	1455.6600
01/03/2008-31/03/2008	9.4688	2218.3920	2227.8608	2227.86	2227.8600
01/04/2008-30/04/2008	1.2144	2715.1256	2716.3400	2716.34	2716.3400
01/05/2008-31/05/2008	794.1648	1888.1016	2682.2664	2682.26	2682.2600
01/06/2008-30/06/2008	1399.4640	1723.0840	3122.5480	3122.55	3122.5480
01/07/2008-31/07/2008	828.4848	1175.7944	2004.2792	2004.28	2004.2792
01/08/2008-31/08/2008	631.0128	933.7944	1564.8072	1564.81	1564.8072
01/09/2008-30/09/2008	612.4536	813.4368	1425.8904	1425.89	1425.8900
01/10/2008-31/10/2008	425.6560	645.6032	1071.2592	1071.26	1071.2592
01/11/2008-30/11/2008	803.2288	1291.5760	2094.8048	2094.81	2094.8048
01/12/2008-31/12/2008	519.3232	840.2504	1359.5736	1359.57	1359.5700
01/01/2009-31/01/2009	451.9856	717.6840	1169.6696	1169.67	1169.6696
01/02/2009-28/02/2009	838.2088	1213.9688	2052.1776	2052.18	2052.1776
01/03/2009-31/03/2009	1238.7496	1664.6608	2903.4104	2903.41	2903.4100
01/04/2009-30/04/2009	1125.8456	1490.9664	2616.8120	2616.81	2616.8100
01/05/2009-09/05/2009	2416.2776	137.1216	2553.3992	2553.40	2553.3992
Total	12766.7848	24677.1976	37443.9824	37443.98	37443.9616

Table 2 EG_{aux} determination-total

Period	EG _{aux} by Auxiliary meters records		EG _{aux} by Auxiliary meters records(Total)	EG _{aux} by Main meters records(Total)	EG _{aux} by sales receipts	EG _{aux} for CERs calculation
	Xiuguan Line	Xiuxiao Line				
	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh
	A	B	C=A+B	D	E	G=max (C,D,E)
01/10/2007-31/10/2007	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/11/2007-30/11/2007	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/12/2007-31/12/2007	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/01/2008-31/01/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/02/2008-29/02/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/03/2008-31/03/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/04/2008-30/04/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/05/2008-31/05/2008	0.0701	0.0000	0.0701	0.0704	0.070	0.0704
01/06/2008-30/06/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/07/2008-31/07/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/08/2008-31/08/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/09/2008-30/09/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/10/2008-31/10/2008	0.1752	0.0000	0.1752	0.1760	0.176	0.1760
01/11/2008-30/11/2008	4.9960	1.1581	6.1541	6.1776	6.178	6.1780
01/12/2008-31/12/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/01/2009-31/01/2009	0.0000	0.4123	0.4123	0.4136	0.414	0.4140
01/02/2009-28/02/2009	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/03/2009-31/03/2009	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/04/2009-30/04/2009	0.0087	0.0000	0.0087	0.0088	0.009	0.0090
01/05/2009-09/05/2009	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
Total	5.2500	1.5704	6.8204	6.8464	6.847	6.8474

Table 3 BE_y calculation-total

Period	EG _y for CERs calculation	EG _{aux} for CERs calculation	EF _{CM,y}	BE _y
	10 ⁴ kWh	10 ⁴ kWh	tCO _{2e} /MWh	tCO _{2e}
	A	B	C	D=(A-B)*C
01/10/2007-31/10/2007	957.9300	0.00	0.9436	9039.0275
01/11/2007-30/11/2007	1056.4100	0.00	0.9436	9968.2848
01/12/2007-31/12/2007	918.8168	0.00	0.9436	8669.9553
01/01/2008-31/01/2008	1490.0600	0.00	0.9436	14060.2062
01/02/2008-29/02/2008	1455.6600	0.00	0.9436	13735.6078
01/03/2008-31/03/2008	2227.8600	0.00	0.9436	21022.0870
01/04/2008-30/04/2008	2716.3400	0.00	0.9436	25631.3842
01/05/2008-31/05/2008	2682.2600	0.07	0.9436	25309.1411
01/06/2008-30/06/2008	3122.5480	0.00	0.9436	29464.3629
01/07/2008-31/07/2008	2004.2792	0.00	0.9436	18912.3785
01/08/2008-31/08/2008	1564.8072	0.00	0.9436	14765.5207
01/09/2008-30/09/2008	1425.8900	0.00	0.9436	13454.6980
01/10/2008-31/10/2008	1071.2592	0.18	0.9436	10106.7411
01/11/2008-30/11/2008	2094.8048	6.18	0.9436	19708.2825
01/12/2008-31/12/2008	1359.5700	0.00	0.9436	12828.9025
01/01/2009-31/01/2009	1169.6696	0.41	0.9436	11033.0958
01/02/2009-28/02/2009	2052.1776	0.00	0.9436	19364.3478
01/03/2009-31/03/2009	2903.4100	0.00	0.9436	27396.5768
01/04/2009-30/04/2009	2616.8100	0.01	0.9436	24692.1342
01/05/2009-09/05/2009	2553.3992	0.00	0.9436	24093.8749
Total	37443.9616	6.85	0.9436	353256

Table 4 EG_y determination-2007

Period	EG _y by meters records		EG _y by meters records (Total)	EG _y by sales receipts	EG _y for CERs calculation
	Xiuguan Line	Xiuxiao Line			
	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh
	A	B	C=A+B	D	E=min (C,D)
01/10/2007-31/10/2007	584.3992	373.5336	957.9328	957.93	957.9300
01/11/2007-30/11/2007	2.6136	1053.8000	1056.4136	1056.41	1056.4100
01/12/2007-31/12/2007	3.2648	915.5520	918.8168	918.82	918.8168
Total	590.2776	2342.8856	2933.1632	2933.16	2933.1568

Table 5 EG_{aux} determination-2007

Period	EG _{aux} by Auxiliary meters records		EG _{aux} by Auxiliary meters records(Total)	EG _{aux} by Main meters records(Total)	EG _{aux} by sales receipts	EG _{aux} for CERs calculation
	Xiuguan Line	Xiuxiao Line				
	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh
	A	B	C=A+B	D	E	G=max (C,D,E)
01/10/2007-31/10/2007	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/11/2007-30/11/2007	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/12/2007-31/12/2007	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
Total	0.0000	0.0000	0.0000	0.0000	0.000	0.0000

Table 6 BE_y calculation-2007

Period	EG _y for CERs calculation	EG _{aux} for CERs calculation	EF _{CM,y}	BE _y
	10 ⁴ kWh	10 ⁴ kWh	tCO ₂ e/MWh	tCO ₂ e
	A	B	C	D=(A-B)*C
01/10/2007-31/10/2007	957.9300	0.00	0.9436	9039.0275
01/11/2007-30/11/2007	1056.4100	0.00	0.9436	9968.2848
01/12/2007-31/12/2007	918.8168	0.00	0.9436	8669.9553
Total	2933.1568	0.00	0.9436	27677

Table 7 EG_y determination-2008

Period	EG _y by meters records		EG _y by meters records (Total)	EG _y by sales receipts	EG _y for CERs calculation
	Xiuguan Line	Xiuxiao Line			
	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh
	A	B	C=A+B	D	E=min (C,D)
01/01/2008-31/01/2008	78.5400	1411.5200	1490.0600	1490.06	1490.0600
01/02/2008-29/02/2008	2.4288	1453.2320	1455.6608	1455.66	1455.6600
01/03/2008-31/03/2008	9.4688	2218.3920	2227.8608	2227.86	2227.8600
01/04/2008-30/04/2008	1.2144	2715.1256	2716.3400	2716.34	2716.3400
01/05/2008-31/05/2008	794.1648	1888.1016	2682.2664	2682.26	2682.2600
01/06/2008-30/06/2008	1399.4640	1723.0840	3122.5480	3122.55	3122.5480
01/07/2008-31/07/2008	828.4848	1175.7944	2004.2792	2004.28	2004.2792
01/08/2008-31/08/2008	631.0128	933.7944	1564.8072	1564.81	1564.8072
01/09/2008-30/09/2008	612.4536	813.4368	1425.8904	1425.89	1425.8900
01/10/2008-31/10/2008	425.6560	645.6032	1071.2592	1071.26	1071.2592
01/11/2008-30/11/2008	803.2288	1291.5760	2094.8048	2094.81	2094.8048
01/12/2008-31/12/2008	519.3232	840.2504	1359.5736	1359.57	1359.5700
Total	6105.4400	17109.9104	23215.3504	23215.35	23215.3384

Table 8 EG_{aux} determination-2008

Period	EG _{aux} by Auxiliary meters records		EG _{aux} by Auxiliary meters records(Total)	EG _{aux} by Main meters records(Total)	EG _{aux} by sales receipts	EG _{aux} for CERs calculation
	Xiuguan Line	Xiuxiao Line				
	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh
	A	B	C=A+B	D	E	G=max (C,D,E)
01/01/2008-31/01/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/02/2008-29/02/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/03/2008-31/03/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/04/2008-30/04/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/05/2008-31/05/2008	0.0701	0.0000	0.0701	0.0704	0.070	0.0704
01/06/2008-30/06/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/07/2008-31/07/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/08/2008-31/08/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/09/2008-30/09/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/10/2008-31/10/2008	0.1752	0.0000	0.1752	0.1760	0.176	0.1760
01/11/2008-30/11/2008	4.9960	1.1581	6.1541	6.1776	6.178	6.1780
01/12/2008-31/12/2008	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
Total	5.2413	1.1581	6.3994	6.4240	6.424	6.4244

Table 9 BE_y calculation-2008

Period	EG _y for CERs calculation	EG _{aux} for CERs calculation	EF _{CM,y}	BE _y
	10 ⁴ kWh	10 ⁴ kWh	tCO _{2e} /MWh	tCO _{2e}
	A	B	C	D=(A-B)*C
01/01/2008-31/01/2008	1490.0600	0.00	0.9436	14060.2062
01/02/2008-29/02/2008	1455.6600	0.00	0.9436	13735.6078
01/03/2008-31/03/2008	2227.8600	0.00	0.9436	21022.0870
01/04/2008-30/04/2008	2716.3400	0.00	0.9436	25631.3842
01/05/2008-31/05/2008	2682.2600	0.00	0.9436	25309.8054
01/06/2008-30/06/2008	3122.5480	0.00	0.9436	29464.3629
01/07/2008-31/07/2008	2004.2792	0.00	0.9436	18912.3785
01/08/2008-31/08/2008	1564.8072	0.07	0.9436	14764.8564
01/09/2008-30/09/2008	1425.8900	0.00	0.9436	13454.6980
01/10/2008-31/10/2008	1071.2592	0.00	0.9436	10108.4018
01/11/2008-30/11/2008	2094.8048	0.00	0.9436	19766.5781
01/12/2008-31/12/2008	1359.5700	0.00	0.9436	12828.9025
Total	23215.3384	0.07	0.9436	219059

Table 10 EG_y determination-2009

Period	EG _y by meters records		EG _y by meters records (Total)	EG _y by sales receipts	EG _y for CERs calculation
	Xiuguan Line	Xiuxiao Line			
	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh
	A	B	C=A+B	D	E=min (C,D)
01/01/2009-31/01/2009	451.9856	717.6840	1169.6696	1169.67	1169.6696
01/02/2009-28/02/2009	838.2088	1213.9688	2052.1776	2052.18	2052.1776
01/03/2009-31/03/2009	1238.7496	1664.6608	2903.4104	2903.41	2903.4100
01/04/2009-30/04/2009	1125.8456	1490.9664	2616.8120	2616.81	2616.8100
01/05/2009-09/05/2009	2416.2776	137.1216	2553.3992	2553.40	2553.3992
Total	6071.0672	5224.4016	11295.4688	11295.47	11295.4664

Table 11 EG_{aux} determination-2009

Period	EG _{aux} by Auxiliary meters records		EG _{aux} by Auxiliary meters records(Total)	EG _{aux} by Main meters records(Total)	EG _{aux} by sales receipts	EG _{aux} for CERs calculation
	Xiuguan Line	Xiuxiao Line				
	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh	10 ⁴ kWh
	A	B	C=A+B	D	E	G=max (C,D,E)
01/01/2009-31/01/2009	0.0000	0.4123	0.4123	0.4136	0.414	0.4140
01/02/2009-28/02/2009	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/03/2009-31/03/2009	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
01/04/2009-30/04/2009	0.0087	0.0000	0.0087	0.0088	0.009	0.0090
01/05/2009-09/05/2009	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
Total	0.0087	0.4123	0.4210	0.4224	0.423	0.4230

Table 12 BE_y calculation-2009

Period	EG _y for CERs calculation	EG _{aux} for CERs calculation	EF _{CM,y}	BE _y
	10 ⁴ kWh	10 ⁴ kWh	tCO ₂ e/MWh	tCO ₂ e
	A	B	C	D=(A-B)*C
01/01/2009-31/01/2009	1169.6696	0.18	0.9436	11035.3416
01/02/2009-28/02/2009	2052.1776	6.18	0.9436	19306.0522
01/03/2009-31/03/2009	2903.4100	0.00	0.9436	27396.5768
01/04/2009-30/04/2009	2616.8100	0.41	0.9436	24688.3127
01/05/2009-09/05/2009	2553.3992	0.00	0.9436	24093.8749
Total	11295.4664	6.77	0.9436	106520

E.2. Project emissions calculation

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The power density is calculated to be 10.3W/m² (10.3W/m²=65,000,000W/6,300,000m²) which is greater than 10W/m², so the project emission (PE_y) is 0.

E.3. Leakage calculation

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Leakage (L_y) is 0tCO_{2e} as per the registered PDD.

E.4. Emission reductions calculation / table

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The total Emission Reductions (ER_y) is calculated as follow:

$$ER_y = BE_y - PE_y - L_y$$

The Emission Reductions in each year as follows:

Year	2007	2008	2009	Total
Emission Reductions	27,677 tCO _{2e}	219,059 tCO _{2e}	106,520 tCO _{2e}	353,256 tCO _{2e}

E.5. Comparison of actual emission reductions with estimates in the CDM-PDD

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Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period
Emission reductions (tCO _{2e})	391,532	353,256

E.6. Remarks on difference from estimated value in the PDD

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There is no increase of emission reduction compared with registered PDD.
