



Monitoring report form
(Version 05.1)

Complete this form in accordance with the Attachment "Instructions for filling out the monitoring report form" at the end of this form.

MONITORING REPORT

Title of the project activity	Jiangxi Xiajiang Hydropower Project	
UNFCCC reference number of the project activity	7289	
Version number of the monitoring report	01	
Completion date of the monitoring report	08/11/2016	
Monitoring period number and duration of this monitoring period	Monitoring period 01, 01/08/2013-31/12/2015	
Project participant(s)	Jiangxi CPI Xiajiang Power Generation Co., Ltd. J-TEC Co., Ltd.	
Host Party	P.R. China	
Sectoral scope(s)	1 : Energy industries (renewable sources)	
Selected methodology(ies)	ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (Version 12.2.0)	
Selected standardized baseline(s)	N/A	
Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD	1,062,481	
Total amount of GHG emission reductions or net GHG removals by sinks achieved in this monitoring period	GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards
	0	815,802

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

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Jiangxi Xiajiang Hydropower Project (hereinafter referred to as the “project”) is invested and developed by Jiangxi CPI Xiajiang Power Generation Co., Ltd.

The proposed project is a seasonal regulation station with the power density of 11.41 W/m², located on the middle portion of Gan River, Xiajiang County of Jiangxi province, P.R.China. Prior to the implementation of the proposed project, local electricity demand in the absence of the project was supplied by the Central China Power Grid (“CCPG”), dominated by thermal power. Within the project activities, nine sets of water turbine and generating units, which are made and supplied by domestic manufacturers, will be installed at the site with a total generation capacity of 360 MW (9*40 MW). The project is expected to generate an annual average of 1,141, 560MWh electricity and to deliver an annual average electricity of 1,061,730 MWh to the CCPG. The baseline scenario of the project activity is the same as the scenario existed prior to the implementation of the project activity.

The Project started construction on 08/10/2010. The commissioning for the first generator set started on 13/09/2013. The Project started fully commissioning on 29/04/2015.

The total emission reductions in this monitoring period (01/08/2013-31/12/2015¹) are 815,802tCO₂e.

A.2. Location of project activity

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The project is located on the middle portion of Gan River, about 6km from Baqiu Town. The GPS coordinates at the plant of the project activity are 115°07'52" East Longitude, and 27°31'04" North Latitude.

A.3. Parties and project participant(s)

Party involved ((host) indicates a host Party)	Private and/or public entity(ies) project participants (as applicable)	Indicate whether the Party involved wishes to be considered as project participant (yes/no)
P.R. China (host)	Jiangxi CPI Xiajiang Power Generation Co., Ltd.	No
Japan	J-TEC Co., Ltd.	No

A.4. Reference of applied methodology and standardized baseline

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ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” (version 12.2.0)

“Tool for the demonstration and assessment of additionality” (version 06.0.0)

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

Above methodologies and Tools are available at

<http://cdm.unfccc.int/methodologies/PAMethodologies/approved.html>

A.5. Crediting period of project activity

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The Project employs the renewable crediting period (3x7yrs), the first crediting period of the project is from 01/08/2013 to 31/07/2020.

¹ The commissioning for the first generator set started on 13/09/2013, so the actual monitoring period of this period was started from 13/09/2013.

A.6. Contact information of responsible persons/entities

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The MR of the Project was completed on 08/11/2016 by Dr.ZhengZhaoning of Goldchina Consultancy International Co., Ltd.

Telephone:(8610)6268 2508; Fax: (8610)6268 2682
Email: zzn01@mails.tsinghua.edu.cn; zzn@gcci-carbon.com

SECTION B. Implementation of project activity**B.1. Description of implemented registered project activity**

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The Project started construction on 08/10/2010. The commissioning for the first generator set started on 13/09/2013. The Project started fully commissioning on 29/04/2015. The electricity generated by the Project is delivered to CCPG.

During this monitoring period, the Project is operated and implemented smoothly. There have been no emergencies (including of overhaul times, downtimes of equipment, exchange of equipment, etc.) happened to the monitoring system in this monitoring period, also no events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

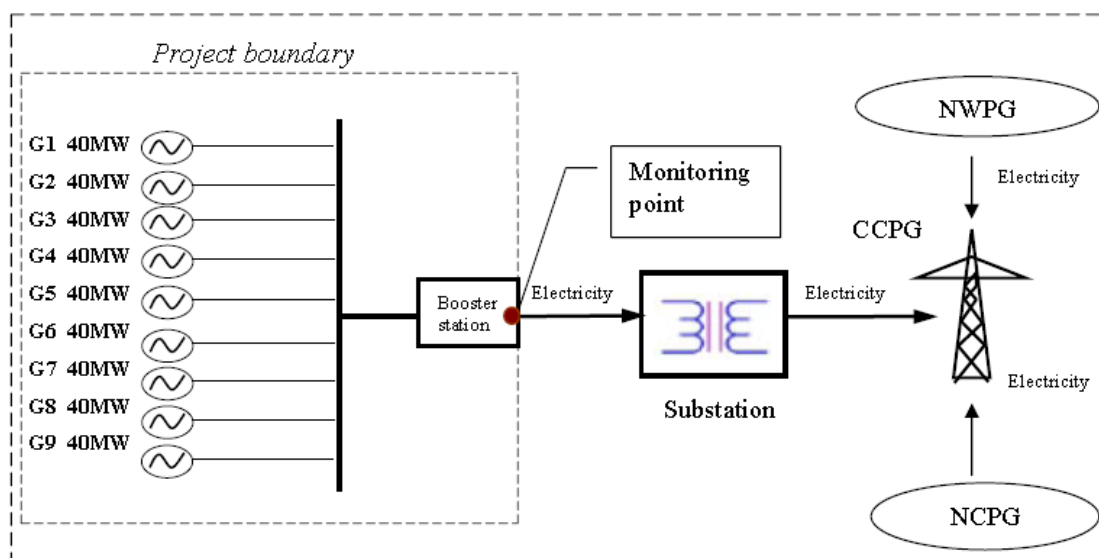
The proposed project is a seasonal regulating hydropower station with a power density of 11.41 W/m². The project will consist of a dam, a spillway weir, a power house and a switch station. The core equipments adopted by the project are nine sets of water-turbines generators with a total generation capacity of 360MW(9*40 MW). The specific technical data of the project are listed in the table below.

Table1 Technical data

paramter	Unit	Data
Turbine		
Units from Dongfang Electric Machinery Co., Ltd.	set	9
Model		GZD(982) -WP-770
Rated capacity	MW	41
Rated head	m	8.6
Generator		
Units from Dongfang Electric Machinery Co., Ltd.	set	9
Model		SFWG40-84/8700
Rated capacity	MW	40
Rated voltage	kV	13.8

The project will be connected to the CCPG via a booster station. Two electricity metering systems are to be equipped at the project site, and they are categorized as main and backup monitoring systems.

The technical process in the Project can be shown as following diagram:



B.2. Post-registration changes

B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline

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Not applicable.

B.2.2. Corrections

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Not applicable.

B.2.3. Changes to start date of crediting period

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Not applicable.

B.2.4. Inclusion of a monitoring plan to the registered PDD that was not included at registration

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Not applicable.

B.2.5. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

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Not applicable.

B.2.6. Changes to project design of registered project activity

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Not applicable.

B.2.7. Types of changes specific to afforestation or reforestation project activity

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Not applicable.

SECTION C. Description of monitoring system

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The implementation of monitoring system and Management organization for the Project are fully consistent with the description in the registered PDD.

1. Management organization

To ensure all data are reliable and transparent, the project owner will also establish Quality Assurance and Quality Control (QA&QC) measures to effectively control and manage data reading, recording, auditing as well as archiving data and all relevant documents. This monitoring plan will be carried out by a CDM team, designated by the project owner, which consists of a team leader, an assistant and operators who are responsible for recording the metering readings (Figure 1).

The team leader will have the overall responsibility for the monitoring and verification process, training and managing all CDM team members, and will act as the focal point for the DOE, DNA and other organizations relating to CDM.

The assistant will help the team leader to supervise the operation of the project, including data monitoring, negotiations with the grid company, and to collect the electricity settlement receipts.

The operators will be responsible for inspecting and maintaining the equipments, measuring and recording relevant readings, collecting, checking, archiving and managing data, and making summary according to the CDM project's requirements in a regular basis, and so on.

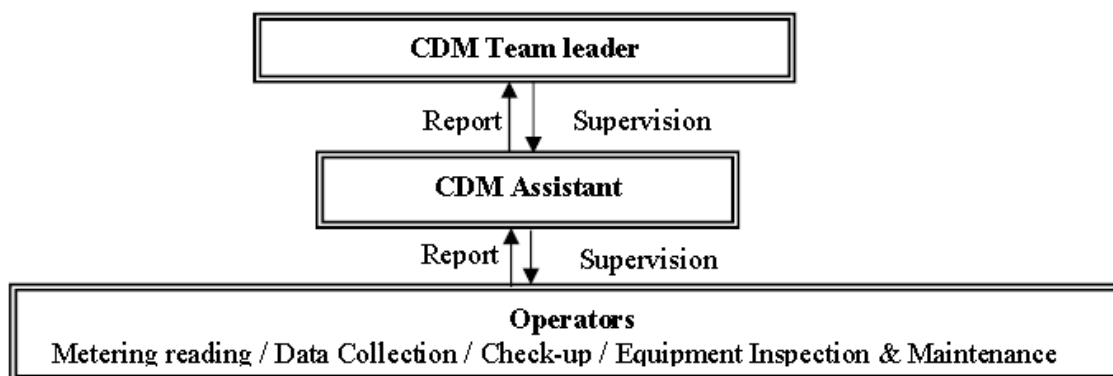


Figure 1. Organization Chart for Project Monitoring

2. Data to be Monitored

- Electricity delivered to/imported from the CCPG by the project ($EG_{\text{facility},y}$)

Electricity delivered to/imported from the CCPG will be monitored by main metering devices installed on site at the booster station. The electricity settlement receipts will be provided by the grid company for the project owner's double check of the amount of net electricity delivered and accepted by the CCPG. Detailed monitoring procedures to measure electricity supplied to the CCPG by the project will be established later between the project owner and the grid company in line with the Power Purchase Agreement.

- Installed generation capacity

The installed generation capacity of the project will be monitored yearly in accordance with the nameplate of each generator.

- Surface area of the reservoir

The surface area of the reservoir determined according to the water level will be yearly monitored to check the power density of the project plant.

Above monitored data will be archived and provided to DOE during the verification period.

3. Installation of Metering Devices

Two sets of metering systems will be equipped at the monitoring point at the project site (see Figure 2). They are classified as main metering system and backup metering system. Both systems are bidirectional and capable of metering the imported and exported electricity by the project simultaneously.

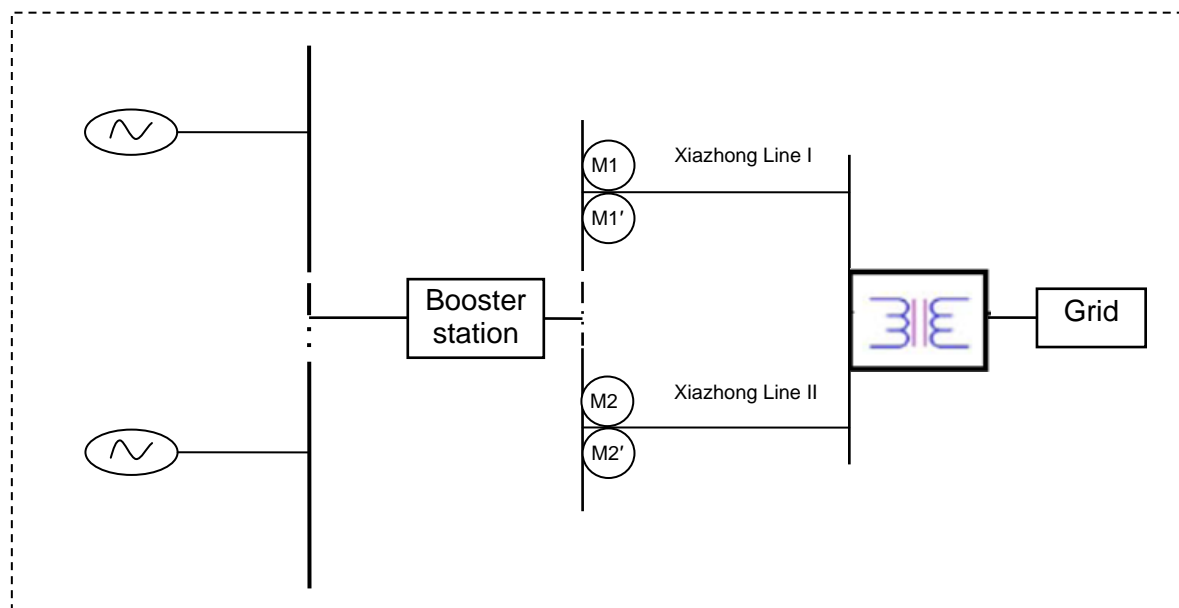


Figure 2

The accuracy of the meter will be at least 0.5S and the metering equipment will be properly calibrated yearly for accuracy based on the national standard (JJG596-1999). The calibration will be carried out by an accredited third party or the grid company.

4. Data Reading

- Electricity delivered to/imported from the CCPG by the project ($EG_{\text{facility},y}$)

The data will be measured continuously at the project site.

In addition, the representatives of the grid company and the project will jointly read the main meters monthly. The recorded data will be confirmed by both parties with signatures, which is used for monthly electricity settlement.

- Installed generation capacity

Before verification, the operators will confirm and record the amount of generator facilities and the installed capacity of each generator in the hydropower station. This record will be checked by the CDM team leader and provided to the DOE during the verification period.

- Area of the reservoir

The water level will be monitored and recorded. The surface area will be yearly determined as per the curve of water level & area of the reservoir.

5. Abnormity handling

If the calibration is not conducted at the frequency specified in this plan, the net electricity delivered to the grid by the project will be determined by the follows in a conservative approach.

- If the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error, maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration will be applied.
- If the error is beyond the maximum permissible error of the measuring equipment, the error identified in the delayed calibration test will be applied.

The electricity recorded by the main metering system alone will be sufficient for the purpose of billing and emission reduction verification as long as the main meter system is under normal condition. If the reading precision of the main metering system is beyond the allowable errors or malfunction is found during previous months, the grid-connected electricity generated by the project will be determined by:

- Firstly, the reading of the backup metering system installed on-site will be applied to get the amount of net electricity exported to the grid;
- If the backup system is beyond the acceptable limits of accuracy or it performs improperly, the data for electricity settlement will be jointly prepared and approved by both the project owner and the grid company;

- If the project owner and the grid company fail to agree on the correct reading, then it will be referred for arbitration according to agreed procedures.

If any data error occurs during the crediting period, especially if the data of electricity sales is accidentally damaged during the crediting period, the project owner and the grid company will deal with it as emergency. Meanwhile, the CDM team should be informed about the accidents occurred at the power station in time. The CDM team leader and assistant will analyze the rationality of the data according to conservative rules of CDM projects. The data will be recorded and archived.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante or at renewal of crediting period

(Copy this table for each piece of data and parameter)

Data/parameter:	$EF_{grid,CM,y}$
Unit	tCO ₂ e/MWh
Description	Combined margin CO ₂ emission factor for grid connected power generation in year y.
Source of data	Source from the Section B.6 of the registered PDD for the Project.
Value(s) applied)	0.7244
Choice of data or measurement methods and procedures	2011 Baseline Emission Factors for Regional Power Grids in China, 20th October 2011, issued by the Department of Climate Change of NDRC http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2720.pdf
Purpose of data	Calculation of baseline emissions.
Additional comments	The emission factor of the Project was ex-ante determined and is fixed during the first crediting period. All data and parameters had been determined at registration.

D.2. Data and parameters monitored

(Copy this table for each piece of data and parameter)

Data/parameter:	$EG_{facility,y}$
Unit	MWh/yr
Description	Quantity of net electricity generation supplied by the project plant/unit to the CCPG in year y.
Measured/calculated/default	Measured
Source of data	Project activity site
Value(s) of monitored parameter	1,126,175.8

Monitoring equipment	<p>The main meter (M1) of Line I. Type: Mk6E Accuracy class: 0.2S Serial number: 212037978 Calibration frequency: At least annually Calibration date: 01/07/2013, 01/06/2014, 07/05/2015 Calibration validity: valid</p> <p>The backup meter (M1') of Line I. Type: Mk6E Accuracy class: 0.2S Serial number: 212037979 Calibration frequency: At least annually Calibration date: 01/07/2013, 01/06/2014, 07/05/2015 Calibration validity: valid</p> <p>The main meter (M2) of Line II. Type: Mk6E Accuracy class: 0.2S Serial number: 212037980 Calibration frequency: At least annually Calibration date: 01/07/2013, 01/06/2014, 07/05/2015 Calibration validity: valid</p> <p>The backup meter (M2') of Line II. Type: Mk6E Accuracy class: 0.2S Serial number: 212037981 Calibration frequency: At least annually Calibration date: 01/07/2013, 01/06/2014, 07/05/2015 Calibration validity: valid</p>
Measuring/reading/recording frequency:	The data of electricity delivered to and imported from the grid will be measured continuously and recorded monthly.
Calculation method (if applicable):	-
QA/QC procedures:	Data measured by meters will be cross checked by electricity sales receipt.
Purpose of data:	Calculation of baseline emissions.
Additional comments:	-

Data/parameter:	Cap_{PJ}
Unit	W
Description	Installed capacity of the hydro power plant after the implementation of the project activity.
Measured/calculated/default	Measured
Source of data	Project site
Value(s) of monitored parameter	360,000,000W
Monitoring equipment	Determination of the installed capacity according to the nameplate
Measuring/reading/recording frequency:	Monitored yearly
Calculation method (if applicable):	-
QA/QC procedures:	The data will be recorded and kept for 2 years after the end of the crediting period.
Purpose of data:	Calculation of Project Emission
Additional comments:	-

Data/parameter:	A _{PJ}
Unit	m ²
Description	Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full.
Measured/calculated/default	Measured
Source of data	Project site
Value(s) of monitored parameter	2013: 31,547,000 m ² 2014: 31,547,000 m ² 2015: 31,547,000 m ²
Monitoring equipment	Measured from topographical surveys, maps, satellite pictures, etc.
Measuring/reading/recording frequency:	Monitored yearly.
Calculation method (if applicable):	-
QA/QC procedures:	The data will be recorded and kept for 2 years after the end of the crediting period.
Purpose of data:	Calculation of Project Emission
Additional comments:	-

D.3. Implementation of sampling plan

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Not applicable.

SECTION E. Calculation of emission reductions or GHG removals by sinks

E.1. Calculation of baseline emissions or baseline net GHG removals by sinks

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According to ACM0002 and the registered PDD of the Project, The baseline emission BE_y during the monitoring period results from:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$$

The Project is the installation of a new grid-connected renewable power plant at a site where no renewable power plant was operated prior to the implementation of the Project. So:

$$EG_{PJ,y} = EG_{facility,y}$$

Accordingly,

$$\begin{aligned} BE_y &= EG_{PJ,y} \times EF_{grid,CM,y} \\ &= EG_{facility,y} \times EF_{grid,CM,y} \end{aligned}$$

Where:

BE_y = The baseline emissions in year y (tCO₂/yr);

$EG_{PJ,y}$ = The quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr);

$EF_{grid,CM,y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y;

$EG_{facility,y}$ = The quantity of net electricity generation supplied by the Project plant/unit to the grid in year y (MWh/yr).

Therefore,

$$EG_{facility,y} = 1,126,453.0 \text{ MWh} - 277.2 \text{ MWh} = 1,126,175.8 \text{ MWh}$$

The baseline emission during this monitoring period calculated as following:

$$BE_y = EG_{facility,y} \times EF_{grid,CM,y}$$

Table5. Baseline emissions

Period	$EG_{facility,y}$ (MWh)	$EF_{grid,CM,y}$ (tCO ₂ e/MWh)	BE_y (tCO ₂ e)
01/08/2013-31/12/2015	1,126,175.8	0.7244	815,802

E.2. Calculation of project emissions or actual net GHG removals by sinks

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According to ACM0002 and the registered PDD of the Project, the project emission $PE_y = PE_{HP,y}$.

According to ACM0002, the power density of the project is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}}$$

Where:

PD = Power density of the project activity (W/m²)

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 (m²)

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 (m²). For new reservoirs, this value is zero.

Cap_{BL} and A_{BL} are zero for the project activity is a newly built project. And the Cap_{PJ} is 360,000,000W, the A_{PJ} is 31,547,000 m², so, the power density of the project is:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}} = (360,000,000 - 0) / (31,547,000 - 0) = 11.41 \text{ W/m}^2$$

The power density of the project is 11.41W/m² which is greater than 10W/m². According to the baseline methodology ACM0002, $PE_{HP,y}$ is 0. So $PE_y = 0$.

E.3. Calculation of leakage

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According to ACM0002(Version 12.2.0), leakage emissions (Ly) of the project is zero.

E.4. Summary of calculation of emission reductions or net GHG removals by sinks

Item	Baseline emissions or baseline net GHG removals by sinks (t CO ₂ e)	Project emissions or actual net GHG removals by sinks (t CO ₂ e)	Leakage (t CO ₂ e)	GHG emission reductions or net GHG removals by sinks (t CO ₂ e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
Total	815,802	0	0	0	815,802	815,802

E.5. Comparison of actual emission reductions or net GHG removals by sinks with estimates in registered PDD

Item	Values estimated in ex ante calculation of registered PDD	Actual values achieved during this monitoring period
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Item	Values estimated in ex ante calculation of registered PDD	Actual values achieved during this monitoring period
Emission reductions or GHG removals by sinks (t CO ₂ e)	1,062,481*	815,802

*The estimated annual emission reductions are 769,117tCO₂e/y as per registered PDD. The commissioning for the first generator set started on 13/09/2013, cover 840 days in the monitoring period; the second generator set started on 30/12/2013, cover 732 days in the monitoring period; the third generator set started on 12/04/2014, cover 629 days in the monitoring period; the fourth generator set started on 21/06/2014, cover 559 days in the monitoring period; the fifth generator set started on 01/10/2014, cover 457 days in the monitoring period; the sixth generator set started on 31/10/2014, cover 427 days in the monitoring period; the seventh generator set started on 31/12/2014, cover 366 days in the monitoring period; the eighth generator set started on 26/03/2015, cover 281 days in the monitoring period; the ninth generator set started on 29/04/2015, cover 247 days in the monitoring period.

So, the according emission reduction in this period is=769,117/9*840/365+769,117/9*732/365+769,117/9*629/365+769,117/9*559/365+769,117/9*457/365+769,117/9*427/365+769,117/9*366/365+769,117/9*281/365+769,117/9*247/365=1,062,481 tCO₂e.

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

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The actual emission reductions generated in the monitoring period are 815,802tCO₂e, which are lower than the estimated emission reductions in the registered PDD.

Appendix 1. Contact information of project participants and responsible persons/entities

Project participant and/or responsible person/ entity	<input checked="" type="checkbox"/> Project participant <input type="checkbox"/> Person/entity responsible for completing the CDM-MR-FORM
Organization name	Jiangxi CPI Xiajiang Power Generation Co., Ltd.
Street/P.O. Box	No.1368, Honggu middle Avenue, Honggutan New District
Building	18 th Floor, Block A, Peak Center Mansion
City	Nanchang city
State/region	Jiangxi Province
Postcode	330038
Country	China
Telephone	+86-791-88560523
Fax	+86-791-88560231
E-mail	cdm-shwt@shjec.cn
Website	
Contact person	Guo Jian
Title	
Salutation	Mr.
Last name	Guo
Middle name	
First name	Jian
Department	
Mobile	
Direct fax	+86-791-88560231
Direct tel.	+86-791-88560523
Personal e-mail	cdm-shwt@shjec.cn

Project participant and/or responsible person/ entity	<input checked="" type="checkbox"/> Project participant <input type="checkbox"/> Person/entity responsible for completing the CDM-MR-FORM
Organization name	J-TEC Co., Ltd.
Street/P.O. Box	Room 501, BARUMI Akasaka Building, Akasaka 4-5-21, Minato-ku
Building	BARUMI Akasaka Building
City	Tokyo
State/region	
Postcode	107-0052
Country	Japan
Telephone	+81-3-62777681
Fax	+81-3-62777682
E-mail	j-tec@xd6.so-net.ne.jp
Website	
Contact person	
Title	Manager
Salutation	Ms.
Last name	Tanaka
Middle name	Mizuho
First name	
Department	
Mobile	
Direct fax	+81-3-62777682
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Personal e-mail	j-tec@xd6.so-net.ne.jp

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> • Include provisions related to delayed submission of a monitoring plan; • Provisions related to the Host Party; • Remove reference to programme of activities; • Overall editorial improvement.
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> • Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0)); • Include provisions related to standardized baselines; • Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1; • Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>; • Editorial improvement.
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		