



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	Qinghai Delingha Xiehe Solar PV Power Generation Project	
UNFCCC reference number of the project activity	7962	
Version number of the monitoring report	01	
Completion date of the monitoring report	08/07/2015	
Monitoring period number and duration of this monitoring period	1 st monitoring period, 911 days (01/01/2013-30/06/2015, first and last days included)	
Project participant(s)	Delingha Xiehe Solar PV Power Generation Co., Ltd. (Project owner) Carbon Resource Management S.A (buyer)	
Host Party	P.R. of China	
Sectoral scope(s)	01 Energy industries (Renewable sources)	
Selected methodology(ies)	ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” (Version 12.3.0).	
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	116,134tCO ₂ e	
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	129,383tCO ₂ e



SECTION A. Description of project activity

A.1. Purpose and general description of project activity

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The purpose of the report is to calculate the emission reductions generated by Qinghai Delingha Xiehe Solar PV Power Generation Project. (thereafter referred to as the project) during the monitoring period (01/01/2013-30/06/2015, including both days).

The Project was successfully registered as CDM project (ref no.7962) on 02/11/2012, the additionality of the Project was fully demonstrated in the registered PDD and validated by the DOE, detailed information please refer to <http://cdm.unfccc.int/Projects/DB/BVQI1351691848.52/view>.

The purpose of the Project is the generation of electricity from solar and the supply of this electricity to the Northwest China Power Grid (NWPg). The Project is to install and operate 128,400 solar cell modules with a capacity of 235Wp each. Therefore, the Project scenario is the installation of 30.174MWp of renewable energy power generation capacity, and the supply to the Grid of 48,084.39MWh (average value for the 25 operational years) of electricity generated from renewable energy. In accordance with the methodology there are no project emissions.

The baseline scenario, which is the same as the scenario existing prior to the implementation of the Proposed Project Activity, is, according to the methodology:

Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system".

As the Grid is dominated by fossil fuel-fired power generation, the establishment of the Proposed Project Activity will lead to greenhouse gas (GHG) emission reductions. Following the methodology, the emission reductions are estimated to be on average 46,530 tonnes of CO₂ equivalent (tCO₂e) per year, and 325,711 tCO₂e over the first 7-years crediting period.

The Project started construction on 05/07/2011.

The Project was put into full operation on 25/12/2011.

This monitoring period of the Project is from 01/01/2013 to 30/06/2015. The total emission reduction of the 1st monitoring period is: 129,383 tCO₂e.

A.2. Location of project activity

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The Project is sited in Delingha City, Qinghai Province, P. R. of China, with geographical coordinates of east longitude of 97°10'23.7" and north latitude of 37°21'10.29".

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)
People's Republic of China (Host)	Delingha Xiehe Solar PV Power Generation Co., Ltd. (Project owner)	No
United Kingdom of Great Britain and Northern Ireland	Carbon Resource Management S.A (buyer)	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 12.3.0).;

“Tool for the demonstration and assessment of additionality” (Version 6.0.0);

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

For more information, please visit:

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

A.5. Crediting period of project activity

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Renewable crediting period of 7×3 years is chosen for the Project. The first crediting period of the project activity is from 01/01/2013 to 31/12/2019. No changes to the start date of the crediting period have been applied.

A.6. Contact information of responsible persons/entities

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The MR of the Project was completed on 08/07/2015 by Dr. Zheng Zhaoning of Goldchina Consultancy International Co., Ltd.

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

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The project started operation in 25/12/2011. This project consists of one site only. No events occurred that affected the applicability of the methodology. The Project owner implements and operates the Project as per the registered PDD.

The technologies employed by the project are owned domestically, thus no technology transfer is involved. Major technical parameters of the key equipments employed by the project are illustrated in Table 1 and Figure 1.

Table 1. Major technical parameters of the key equipments of the Project

Item		Unit	Data
solar cell modules	Type		LDK-235P-20
	Maximum power	Wp	235
	Lifetime	year	25

	Manufacturer		Jiangxi Saiwei LDK Solar High-technology Co., Ltd
Inverter	Type		EHE-N500KTL
	Output rated power	KW	500
	Manufacture		Guodian Nanrui Jidian New Energy (Nanjing) Co., Ltd

The technical process of the Project can be illustrated by below figure 1.

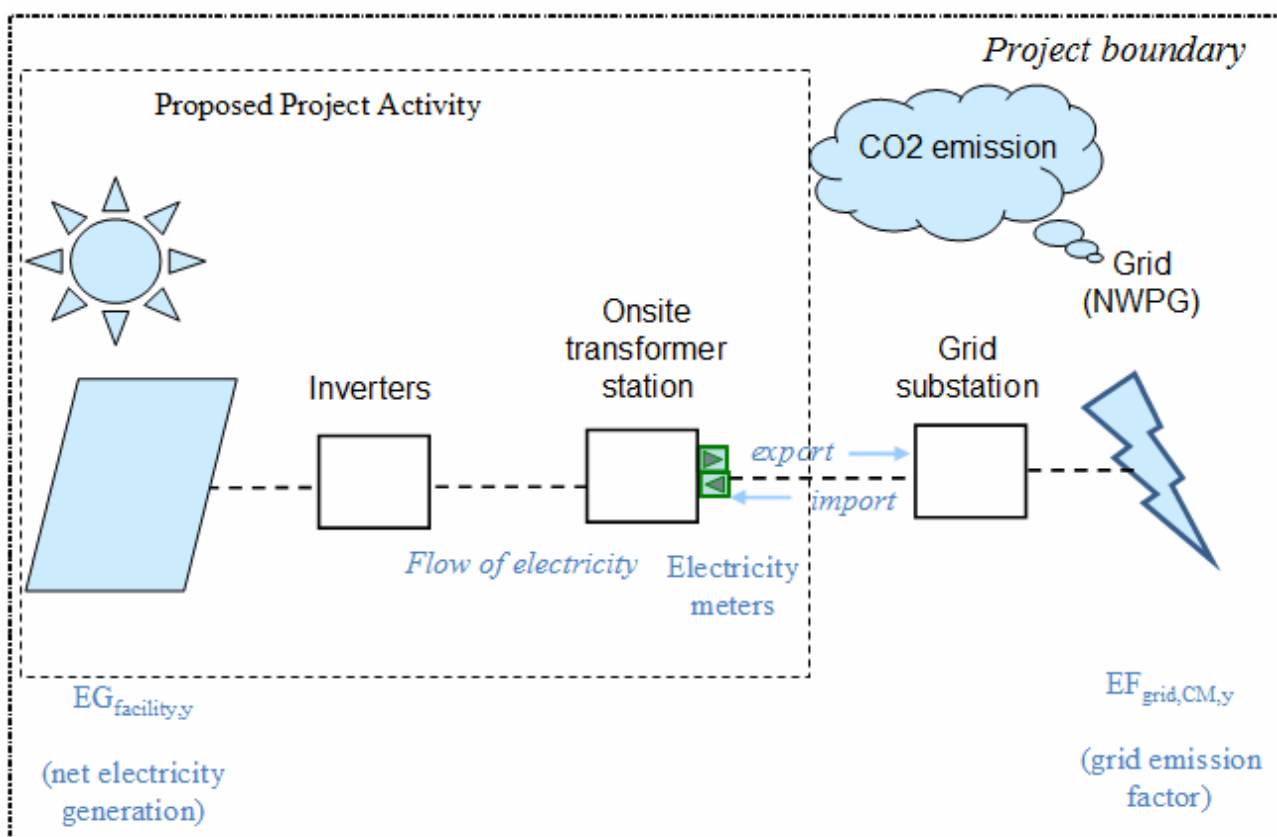


Figure 1. the technical process of the Project

B.2. Post-registration changes

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

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There are no temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline to this project.

B.2.2. Corrections

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There is no correction during this monitoring period.

**B.2.3. Changes to start date of crediting period**

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The start date of the crediting period was changed from 02/11/2012 to 01/01/2013

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

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There is no Inclusion of a monitoring plan to the registered PDD that was not included at registration during this monitoring period.

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

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There is no permanent change from the registered monitoring plan , applied methodologies or applied standardized baseline during this monitoring period.

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

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There is no any change to the project design of the project activity.

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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1. Data collection procedures

The electricity meters system was equipped according to the requirements of the Technical Administrative Code of Electric Energy Metering (DL/T448-2000).

The net electricity supply of the project to the grid will be continuously measured. Two meters with accuracy 0.2s (main M1 and back M1') were installed at Outlet of the 35kV/ 110kV Substation to monitor the net electricity supplied.

The diagram of the monitoring system is shown in the Figure 2 below:

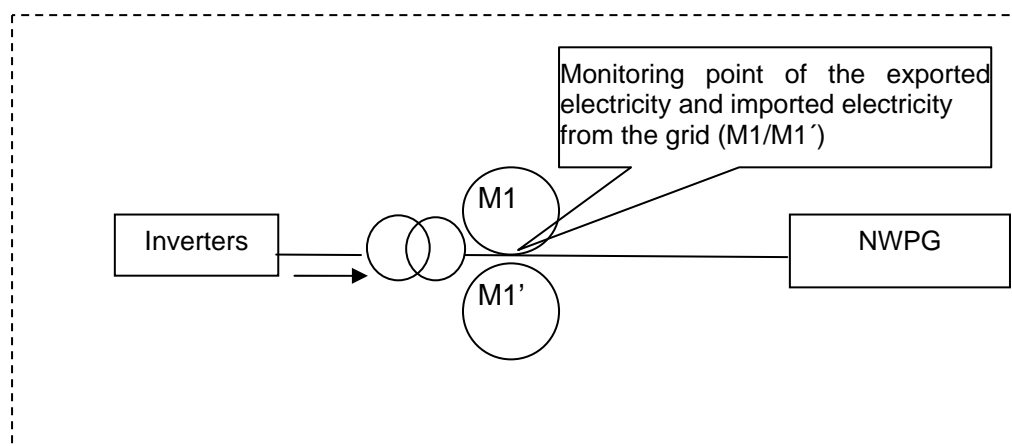


Figure 2. The connection structure and the meter location

Meter	M1	M1'
function	Main meter	Backup meter
Accuracy	0.2S	0.2S
Bi-directional	Yes	Yes
Parameters monitored	$EG_{facility,y}$	$EG_{facility,y}$
Location	Outlet of the 35kV/ 110kV Substation	Outlet of the 35kV/ 110kV Substation

2.Organizational structure

The monitoring of the emission reductions is carried out according to the scheme shown in figure 3.

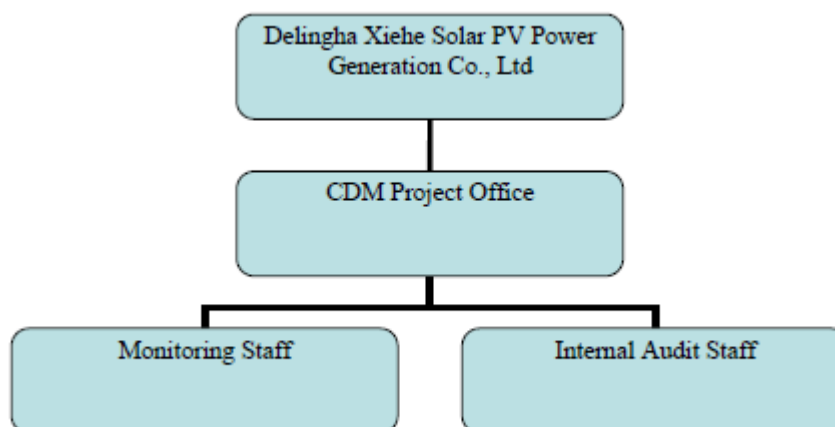


Figure 3. Management Structure of Monitoring Plan

3. Emergency procedures

The quality assurance and quality control procedures consist of data recording, maintaining, archiving and the meter calibration and repair.

The recorded electricity data should be double checked against relevant records for sold electricity, the data will be electronically maintained and archived.

The regular calibration should be implemented as per the Technical administrative code of electric energy metering (DL/T 448-2000) to ensure the accuracy of electricity meters. Electricity meters should be calibrated at least every year. After calibration, the electricity meters must be sealed. When the measurement error of electricity meter is larger than the permitted error or the electricity meter must be repaired because of a malfunction, the electricity will be determined as per the Power Purchase Agreement signed between the project owner and the local grid company.

The quality assurance and quality control procedures should be improved according to the CDM EB regulation and the real operating conditions during the project operation period.

4. Compilation of the monitored data and dealing with errors

The Developer will receive the meter readings from the main and back-up meters. The meter readings from the main and back up meters as well as the volumes from the sales receipts are compiled and compared.

Should any previous months reading of the main meter be inaccurate by more than the allowable error, or otherwise functioned improperly, the net generation output shall be determined by (a) first, by reading backup meter, unless a test by either party reveals it is inaccurate; (b) if the backup system is not with acceptable limits of accuracy or operation is performed improperly the Developer and grid company shall jointly prepare a reasonable and conservative estimate of the correct reading, and provide sufficient evidence that this estimation is reasonable and conservative for verification by the DOE; and (c) if the grid company and the Developer fail to agree then the matter will be referred for arbitration according to agreed procedures.

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	Emission factor of NWPG in the monitoring period.
Source of data	Registered PDD
Value(s) applied)	0.8963
Choice of data or measurement methods and procedures	Fixed before registration
Purpose of data	Baseline emission calculations.
Additional comments	N/A

D.2. Data and parameters monitored

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

Data/parameter:	$EG_{facility,y}$
Unit	MWh
Description	Quantity of net electricity supplied of the Project activity to the grid in year y.
Measured/calculated/default	Measured
Source of data	Measured by electricity meters(M1 and M1')



Value(s) of monitored parameter	144,353.064
Monitoring equipment	<p>The main meter (M1) is a bidirectional meter. Type: Electricity meter Accuracy class: 0.2S Serial number: 35035165440641009801200016 Calibration frequency: 30/11/2011,26/11/2012,23/11/2013,20/11/2014</p> <p>The backup meter (M1') is a bidirectional meter. Type: Electricity meter Accuracy class: 0.2S Serial number: 35035165440641009801200015 Calibration frequency: 30/11/2011,26/11/2012,23/11/2013,20/11/2014</p>
Measuring/reading/recording frequency:	Continuous measurement and at least monthly recording
Calculation method (if applicable):	<p>The difference between the following parameters: (i) The quantity of electricity supplied by the project to the grid; and (ii) The quantity of electricity delivered to the project from the grid.</p> <p>Two electricity meters (one main and one backup) recording supply and consumption at the onsite sub-station. Net generation calculated as quantity of electricity supplied by the project to the grid minus and quantity of electricity delivered to the project from the grid.</p>
QA/QC procedures:	Cross check measurement results with records for sold electricity
Purpose of data:	Calculation of baseline emissions
Additional comments:	N/A

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 the methodology, the baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are calculated as follows:

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

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,

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



Where:

BE_y is the baseline emissions in year y (tCO_2);

$EF_{grid,CM,y}$ is the combined margin CO_2 emission factor for grid connected power generation in year y ;

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

The monthly electricity data is listed in following table2:

**Table2. Calculation of the quantity of net electricity supplied to the grid by the Project**

Period	Electricity exported to the grid by the Project (MWh)			Electricity imported from the grid by the Project (MWh)			Quantity of net electricity generation supplied by the project to the grid in year y EG _{facility,y} (MWh)
	data from main meter readings	data from ETN	data used to calculate the ER	data from main meter readings	data from ETN	data used to calculate the ER	
	A	B	C=MIN(A,B)	D	E	F=MAX(D,E)	G=C-F
01/01/2013-31/01/2013	4,312.770	4,312.770	4,312.770	30.821	30.821	30.821	4,281.949
01/02/2013-28/02/2013	4,479.464	4,479.464	4,479.464	27.720	27.720	27.720	4,451.744
01/03/2013-31/03/2013	5,210.148	5,210.148	5,210.148	20.460	20.460	20.460	5,189.688
01/04/2013-30/04/2013	5,347.972	5,347.972	5,347.972	26.400	26.400	26.400	5,321.572
01/05/2013-31/05/2013	4,014.800	4,014.800	4,014.800	10.890	10.890	10.890	4,003.910
01/06/2013-30/06/2013	5,050.146	5,050.146	5,050.146	20.790	20.790	20.790	5,029.356
01/07/2013-31/07/2013	4,853.242	4,853.242	4,853.242	20.030	20.030	20.030	4,833.212
01/08/2013-31/08/2013	5,747.170	5,747.170	5,747.170	33.000	33.000	33.000	5,714.170
01/09/2013-30/09/2013	4,366.038	4,366.038	4,366.038	28.380	28.380	28.380	4,337.658
01/10/2013-31/10/2013	5,407.950	5,407.950	5,407.950	39.270	39.270	39.270	5,368.680
01/11/2013-30/11/2013	4,827.620	4,827.620	4,827.620	48.840	48.840	48.840	4,778.780
01/12/2013-31/12/2013	4,937.942	4,937.942	4,937.942	46.800	46.800	46.800	4,891.142
01/01/2014-31/01/2014	2,638.258	2,638.258	2,638.258	35.529	35.529	35.529	2,602.729
01/02/2014-28/02/2014	730.130	730.130	730.130	37.551	37.551	37.551	692.579



01/03/2014-31/03/2014	5,815.874	5,815.874	5,815.874	31.097	31.097	31.097	5,784.777
01/04/2014-30/04/2014	5,308.174	5,308.174	5,308.174	35.505	35.505	35.505	5,272.669
01/05/2014-31/05/2014	5,594.850	5,594.850	5,594.850	29.447	29.447	29.447	5,565.403
01/06/2014-30/06/2014	6,503.686	6,503.686	6,503.686	27.723	27.723	27.723	6,475.963
01/07/2014-31/07/2014	3,449.428	3,449.428	3,449.428	28.852	28.852	28.852	3,420.576
01/08/2014-31/08/2014	6,249.814	6,249.814	6,249.814	34.452	34.452	34.452	6,215.362
01/09/2014-30/09/2014	6,279.508	6,279.508	6,279.508	37.391	37.391	37.391	6,242.117
01/10/2014-31/10/2014	4,842.036	4,842.036	4,842.036	42.900	42.900	42.900	4,799.136
01/11/2014-30/11/2014	4,875.988	4,875.988	4,875.988	42.660	42.660	42.660	4,833.328
01/12/2014-31/12/2014	4,347.818	4,347.818	4,347.818	40.057	40.057	40.057	4,307.761
01/01/2015-31/01/2015	4,956.052	4,956.052	4,956.052	25.687	25.687	25.687	4,930.365
01/02/2015-28/02/2015	4,854.748	4,854.748	4,854.748	34.575	34.575	34.575	4,820.173
01/03/2015-31/03/2015	4,703.070	4,703.070	4,703.070	30.585	30.585	30.585	4,672.485
01/04/2015-30/04/2015	5,568.196	5,568.196	5,568.196	31.557	31.557	31.557	5,536.639
01/05/2015-31/05/2015	5,490.428	5,490.428	5,490.428	29.454	29.454	29.454	5,460.974
01/06/2015-30/06/2015	4,548.718	4,548.718	4,548.718	30.551	30.551	30.551	4,518.167
Total	135,272.892	135,272.892	135,272.892	898.969	898.969	898.969	144,353.064

The baseline emission during this monitoring period calculated as following:

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

Table4. Baseline emissions

Period	$EG_{\text{facility},y}$ (MWh)	$EF_{\text{grid,CM},y}$ (tCO ₂ e/MWh)	BE_y (tCO ₂ e)
01/01/2013-31/12/2013		0.8963	52,166
01/01/2014-31/12/2014		0.8963	50,383
01/01/2015-30/06/2015		0.8963	26,834
01/01/2013-30/06/2015	144,353.064	0.8963	129,383

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

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The project is a new grid-connected renewable project, no fossil fuel will be consumed according to the methodology ACM0002, the project emission should not be considered, that is $PE_y = 0$ tCO₂e.

E.3. Calculation of leakage

>> As per the methodology ACM0002 version 12.3.0, no leakage needs to be considered in the Project, $LE_y = 0$ tCO₂e.

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
2013	52,166	0	0	0	52,166	52,166
2014	50,383	0	0	0	50,383	50,383
2015	26,834	0	0	0	26,834	26,834
Total	129,383	0	0	0	129,383	129,383

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
Emission reductions or GHG removals by sinks (t CO ₂ e)	116,134*	129,383

*The estimated annual emission reductions are 46,530tCO₂e/y as per registered PDD. So, the estimated emission reduction is 116,134=46,530*911/365 tCO₂e in 850 days (total days of this monitoring period) based on the registered PDD.

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

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The actual emission reductions achieved during the monitoring period is 11.41% higher than the estimated annual emission reductions in the registered PDD of the Project.

The exceeding in the monitoring period is a normal variation for the Project, because the 11.41% increase of emission reductions means 11.41% increase of feed-in electricity. Considering the quantity of annual feed-in electricity increases by 17.6%, the project IRR could reach 8.00% in the registered PDD of the Project. So, the 11.41% of emission reductions have not impact on the additionality of the Project.

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	Delingha Xiehe Solar PV Power Generation Co., Ltd.
Street/P.O. Box	No. 9 Shoutinan Road, Haidian District,
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State/region	
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Fax	+86-(0) 10-8831 7777
E-mail	dusy@cwpgroup.com.hk
Website	
Contact person	Du Shuyao
Title	General Manager Assistant
Salutation	Mr.
Last name	Du
Middle name	
First name	Shuyao
Department	
Mobile	
Direct fax	+86-(0) 10-8831 7777
Direct tel.	+86-(0) 10-8831 7846
Personal e-mail	dusy@cwpgroup.com.hk

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	Carbon Resource Management S.A
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Telephone	+41 22 322 1189
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E-mail	deliveries@carbonresource.com
Website	
Contact person	
Title	Chief Operating Officer
Salutation	Dr
Last name	Green
Middle name	
First name	John
Department	
Mobile	
Direct fax	+41 22 781 6611
Direct tel.	+41 22 322 1189
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Project participant and/or responsible person/ entity	<input type="checkbox"/> Project participant <input checked="" type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
Organization name	Goldchina Consultancy International Co., Ltd.
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Title	Legal Representative
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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		