

DATONG RIVER TIANWANGGOU HYDROPOWER STATION

Document prepared by Climate Bridge Ltd.

Project Title	Datong River Tianwanggou Hydropower Station
Version	Version 2.0
Date of Issue	10-04-2012
Project ID	N/A
Monitoring Period	From 20-06-2008 to 24-10-2010
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1 PROJECT DETAILS

1.1 Summary Description of Project

The Datong River Tiawanggou Hydropower Station project (hereafter referred to as 'the project') is a run-of-the-river hydropower project that is developed by GEPIC Darong Electric Power Company Ltd. in Gansu Province, China. The total installed capacity of the project is 51 MW (3 x 17 MW) with an operation time of 25 years. The key technical data are listed in below:

Generator		Turbine	
Model	SF-J17-22/4250	Model	HLA551-LJ-215
Quantity	3	Quantity	3
Rated Power	17 MW	Rated Power	17.5 MW
Rated Voltage	10.5 kV	Rated Water Head	50 m
Rated Current	1100 A	Rated Flux	38.21 m ³ /s
Rated Speed	272.7 r/min	-	-
Manufacturer	Hangzhou Resource Power Equipment Co. Ltd.		

The project is to utilize the hydrologic resources of the Datong River to generate electricity that will be supplied to local Gansu Power Grid, part of the Northwest China Power Grid (NWCPG), and to replace equivalent amount of the electricity generated from the coal-fired power plants in the grid to achieve the goal of emission reduction. The annual estimated power generation of the project is 212,000 MWh, and the net power supplied to the grid is 211,576 MWh per year.

The project commenced construction in Oct. 2005 and started power generation on 20 June 2008. The project registered under CDM on 25 Oct. 2010. The total net electricity supplied to the NWCPG by the project activity during its VCU monitoring period (from 20/06/2008 to 24/10/2010) is 550,449.754WMh, and the emission reductions achieved during this period is 467,771 tCO₂.

1.2 Sectoral Scope and Project Type

The project falls in the sectoral scope 1: energy industries (renewable-/non-renewable sources). The project is not a grouped project.

1.3 Project Proponent

- **GEPIC Darong Electric Power Company Ltd. (Project Owner)**

Address: 16 Jiuquan Road, Chengguan District, Lanzhou, China, 730030

Tel: 0086 931 8408389 ext. 6119

Fax: 0086 931 8460065

1.4 Other Entities Involved in the Project

● Climate Bridge Ltd. (VCU Buyer)

Address: Suite 19D, No 121 Yanping Road, Shanghai, China, 200042

Tel: 0086 21 62462036

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1.5 Project Start Date

20/06/2008

1.6 Project Crediting Period

20/06/2008 – 24/10/2010, in total 857 days.

1.7 Project Location

The project is located in Yongdeng County, Lanzhou City, Gansu Province of China. The geographical coordinates of the project dam are 102°44'57" E, 36°42'49" N, and these of the powerhouse are 102°46'20" E, 36°39'58" N.

1.8 Title and Reference of Methodology

- ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 07)
- "Tool to calculate the emission factor for an electricity system" (version 01.1)
- "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" (version 2)

2 IMPLEMENTATION STATUS

2.1 Implementation Status of the Project Activity

The key events of its implementation are summarized in the Table 2.1

Table 2.1 Key events of the project implementation

Key events	Date
The Project started construction	24/10/2005
The generator #1 started operation	28/06/2008
The generator #2 started operation	02/07/2008
The generator #3 started operation	20/06/2008
The Project registered under CDM	25/10/2010

The project installed three sets of turbine and generator (17MW each) which are the same as described in the project PDD.

From 20/06/2008 to 24/10/2010, the project supplied net electricity of 550,449.754MWh to the NWCPG, and reduced GHG emissions of 467,771 tCO₂.

The project operated normally during the indicated monitoring period, and no event or situation which may impact the applicability of the methodology occurred during the period.

2.2 Deviations from the Monitoring Plan

The project monitoring plan followed the CDM PDD until 28/09/2010 when a new regulation signed between the project owner and Gansu Province Electric Power Company on the project monitoring point. A revised monitoring plan was submitted and approved by UNFCCC on 18/05/2011, which is applicable to the proposed VCU monitoring period during 29/09/2010 and 24/10/2010. More details are described in Section 3.3.

2.3 Grouped Project

N/A

3 DATA AND PARAMETERS

3.1 Data and Parameters Available at Validation

Data Unit / Parameter:	EF _y
Data unit:	tCO ₂ /MWh
Description:	Combined margin emission factor of NWCPG in year y.
Source of data:	Calculated in B6.1 and Annex 3 of the PDD.
Value applied:	0.8498.
Purpose of the data:	Baseline emission calculation.
Any comment:	

Data Unit / Parameter:	A _{BL}
Data unit:	m ²
Description:	Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m ²).
Source of data:	The status of the project
Value applied:	0, as for a new reservoir
Purpose of the data:	Project emission calculation
Any comment:	

3.2 Data and Parameters Monitored

Data Unit / Parameter:	EG _{out, y}	
Data unit:	MWh	
Description:	Annual on-grid electricity supplied to NWCPG by the project.	
Source of data:	Meter measurement	
Description of measurement methods and procedures to be applied:	During 20/06/2009-28/09/2010, measured directly and continuously by the main meter M1 and backup meter M1', and recorded on a monthly basis. During 29/09/2010-24/10/2010, measured directly and continuously by the main meter M2 and backup meter M2', and recorded on a monthly basis.	
Frequency of monitoring/recording:	Measured continuously and recorded monthly.	
Value monitored:	550,573.239 MWh from 20/06/2008 – 24/10/2010, see Table 4-1 for details.	
Monitoring equipment:	M1 and M1' are bi-directional meters, and their characteristics are summarized in the table below.	
	Type	SL7000
	Accuracy	0.2S
	Serial Number	36088340
	Monitoring Frequency	Continuous
	Recording Frequency	Monthly
	Calibration Frequency	Yearly
	Calibration Date	2007.11.27
		2008.11.26
		2009.11.25
	M2 and M2' are bi-directional meters, and their characteristics are summarized in the table below.	
	Type	SL7000
	Accuracy	0.2S
	Serial Number	36088342
	Monitoring Frequency	Continuous

	Recording Frequency	Monthly	Monthly
	Calibration Frequency	Yearly	Yearly
	Calibration Date	2007.11.27 2008.11.26 2009.11.25	2007.11.27 2008.11.26 2009.11.25
QA/QC procedures to be applied:	- M1, M1', M2, and M2' are calibrated once a year. - The data will be archived both in electronic and paper. - The data record and relevant documents will be archived for a period of 2 years after the crediting period. - Special CDM project team has been set up. - A detailed rule on monitoring management has been made.		
Calculation method:	To calculate the EGy		
Any comment:	N/A		

Data Unit / Parameter:	EG _{in, y}
Data unit:	MWh
Description:	Annual on-grid electricity purchased from NWCPG by the project for the plant operation.
Source of data:	Meter measurement
Description of measurement methods and procedures to be applied:	During 20/06/2009-28/09/2010, measured directly and continuously by the main meter M1 and backup meter M1', and recorded on a monthly basis. During 29/09/2010-24/10/2010, measured directly and continuously by the main meter M2 and backup meter M2', and recorded on a monthly basis
Frequency of monitoring/recording:	Measured continuously and recorded monthly.
Value monitored:	43.032 MWh from 20/06/2008 – 24/10/2010, see Table 4-1 for details.

Monitoring equipment:	M1 and M1' are bi-directional meters, and their characteristics are summarized in the table below.		
		M1	M1'
	Type	SL7000	SL7000
	Accuracy	0.2S	0.2S
	Serial Number	36088340	36088341
	Monitoring Frequency	Continuous	Continuous
	Recording Frequency	Monthly	Monthly
	Calibration Frequency	Yearly	Yearly
	Calibration Date	2007.11.27 2008.11.26 2009.11.25	2007.11.27 2008.11.26 2009.11.25
	M2 and M2' are bi-directional meters, and their characteristics are summarized in the table below.		
		M2	M2'
	Type	SL7000	SL7000
	Accuracy	0.2S	0.2S
	Serial Number	36088342	36088343
	Monitoring Frequency	Continuous	Continuous
	Recording Frequency	Monthly	Monthly
	Calibration Frequency	Yearly	Yearly
	Calibration Date	2007.11.27 2008.11.26 2009.11.25	2007.11.27 2008.11.26 2009.11.25
QA/QC procedures to be applied:	- M1, M1', M2, and M2' are calibrated once a year. - The data will be archived both in electronic and paper. - The data record and relevant documents will be archived for a period of 2 years after the crediting period. - Special CDM project team has been set up. - A detailed rule on monitoring management has been made.		
Calculation method:	N/A		

Any comment:	To calculate the EG_y , $EG_y = EG_{out} - EG_{in}$
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Data Unit / Parameter:	EG_y
Data unit:	MWh
Description:	Net electricity exported to the NWCPG by the project.
Source of data:	During 20/06/2009-28/09/2010, $EG_y = EG_{out, y} - EG_{in, y}$, during 29/09/2010-24/10/2010, $EG_y = 99.59\% EG_{out, y} - 100.41\% EG_{in, y}$
Description of measurement methods and procedures to be applied:	N/A
Frequency of monitoring/recording:	N/A
Value monitored:	550,449.754 MWh from 20/06/2008 – 24/10/2010, Table 4-1 for details
Monitoring equipment:	N/A
QA/QC procedures to be applied:	- Data record and relevant documents will be archived for a period of 2 years after the crediting period. - Special CDM project team has been set up. - A detailed rule on monitoring management has been made.
Calculation method:	N/A
Any comment:	N/A

Data Unit / Parameter:	TEG_y
Data unit:	MWh
Description:	Total electricity produced by the project activity, including the electricity supplied to the grid and electricity supplied to internal loads, in year y.
Source of data:	Meter measurements.
Description of measurement methods and procedures to be applied:	Measured directly and continuously by meters M3, M4, and M5, and recorded monthly in operation log.
Frequency of monitoring/recording:	Measured continuously and recorded monthly.
Value monitored:	569,328.92 MWh from 20/06/2008 – 24/10/2010,

Period	Electricity produced by G1, MWh	Electricity produced by G2, MWh	Electricity produced by G3, MWh	Total electricity produced by the project activity (TEGy), MWh
20/06/2008-30/06/2008	286.51	0	3825	4,111.51
01/07/2008-31/07/2008	10885.81	9832.2	3930	24,648.01
01/08/2008-30/08/2008	10108.4	10528.2	10666.8	31,303.40
31/08/2008-29/09/2008	9898.8	11371.8	8676.9	29,947.50
30/09/2008-30/10/2008	10783.5	9897.6	3387	24,068.10
31/10/2008-28/11/2008	5034.3	8826.3	0	13,860.6
29/11/2008-29/12/2008	774.3	6079.2	2393.1	9,246.60
30/12/2008-29/01/2009	3468.9	35.7	2241.9	5,746.50
30/01/2009-26/02/2009	4148.1	0	2033.1	6,181.20
27/02/2009-29/03/2009	3387	414.3	0	3,801.30
30/03/2009-28/04/2009	3667.5	6300.9	136.5	10,104.90
29/04/2009-29/05/2009	2636.1	6895.8	2709.3	12,241.20
30/05/2009-28/06/2009	5287.5	7840.2	5006.4	18,134.10
29/06/2009-29/07/2009	12533.4	11970.9	12574.9	37,079.20
30/07/2009-29/08/2009	12212.7	12510.9	12587.1	37,310.70
30/08/2009-28/09/2009	12323.4	12201.3	12298.8	36,823.50
29/09/2009-29/10/2009	12048.9	8318.1	11704.2	32,071.20
30/10/2009-28/11/2009	6449.1	1266.3	9734.1	17,449.50
29/11/2009-29/12/2009	3925.2	2070	8800.5	14,795.70
30/12/2009-29/01/2010	2236.8	1209.9	3826.8	7,273.50
30/01/2010-26/02/2010	798.9	5514.3	268.2	6,581.40
27/02/2010-29/03/2010	2806.5	4716	1905.3	9,427.80
30/03/2010-28/04/2010	2575.8	6010.2	1686	10,272.00
29/04/2010-29/05/2010	4692.3	6144.6	7359.3	18,196.20
30/05/2010-28/06/2010	8130.3	6723	7967.4	22,820.70
29/06/2010-29/07/2010	12016.5	11730.9	11166.3	34,913.70

	30/07/2010-29/08/2010	12647.7	11596.8	11745.9	35,990.40
	30/08/2010-28/09/2010	12373.8	10619.4	12059.7	35,052.90
	29/09/2010-24/10/2010	6000.3	6389.4	7485.9	19,875.60
	Total (20/06/2008-24/10/2010)	194138.32	197014.2	178176.4	569,328.92
Monitoring equipment:	M3, M4, M5 are used to monitor the electricity produced by the each generator.				
		M3	M4	M5	
	Type	DTSD341	DTSD341	DTSD341	
	Accuracy	0.5	0.5	0.5	
	Serial Number	323030238	323030237	323030239	
	Monitoring Frequency	Continuousl y	Continuously	Continously	
	Recording Frequency	Monthly	Monthly	Monthly	
	Calibration Frequency	Once three years	Once three years	Once three years	
	Calibration Date	2008.6.20	2008.6.20	2008.6.20	
QA/QC procedures to be applied:	- M3, M4 and M5 are calibrated once three years. - Data record and relevant documents will be archived for a period of 2 years after the crediting period. - Special CDM project team has been set up - A detailed rule on monitoring management has been made.				
Calculation method:	The sum of M3, M4, and M5.				
Any comment:	N/A				

Data Unit / Parameter:	A _{PL}
Data unit:	m ²
Description:	Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m ²).

Source of data:	Measurement from the project site.
Description of measurement methods and procedures to be applied:	Measured from topographical surveys.
Frequency of monitoring/recording:	yearly
Value monitored:	237,400
Monitoring equipment:	Survey
QA/QC procedures to be applied:	The data will be kept for at least 2 years after the end of the fixed crediting period.
Calculation method:	N/A
Any comment:	N/A

Data Unit / Parameter:	Cap _{pL}
Data unit:	MW
Description:	Installed capacity of the hydro power plant after the implementation of the project activity.
Source of data:	Nameplates
Description of measurement methods and procedures to be applied:	Check the nameplate of the equipment on the site
Frequency of monitoring/recording:	yearly
Value monitored:	51
Monitoring equipment:	N/A
QA/QC procedures to be applied:	N/A
Calculation method:	N/A
Any comment:	N/A

3.3 Description of the Monitoring Plan

Data collection procedures:

The figure 3-1 below shows the monitoring points and meters.

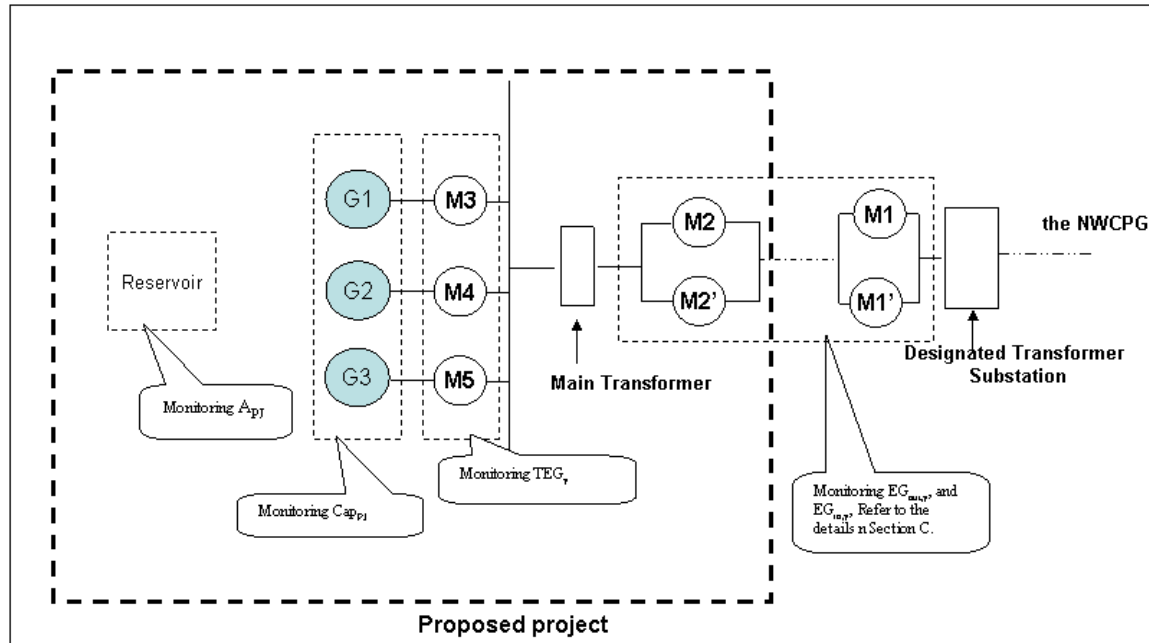


Figure 3-1 Diagram of monitoring points

During 20/06/2008 – 28/09/2010, $EG_{out,y}$ and $EG_{in,y}$ are measured by the main meter M1 and its back-up meter M1', which are installed at the Jiansheping Substation. Both meters are bi-directional and continuously measure the electricity supplied to and purchased from the NWCPG by the project activity. The data are continuously monitored by the meters. During first a few months when the project started operation but was still in its trial run, the meters were monthly read and recoded at 24:00 on 30 June, 31 July, 30 August, 29 September, and 30 October in 2008. Ever since November 2008, no change ever happened as all the meters are read at 24:00 on the third to the last day of each month. The grid company provides the monthly reading records to the project owner, and the project owner will confirm and then issue invoices based on the readings.

As per the registered PDD, the net electric power exported to the grid (EG_y) during 20/06/2008-28/09/2010 is calculated by the following formula:

$$EG_y = EG_{out,y} - EG_{in,y}$$

Where:

EG_y = Electric power exported to the grid (MWh).

$EG_{out,y}$ = Electricity supplied by the project activity to the grid (MWh).

$EG_{in,y}$ = Electricity imported from the grid (MWh).

After 28/09/2010, due to the new regulation agreed between the project owner and Gansu Province Electric Power Company, the meter M2 and M2' that are installed at the project site will replace M1 and M1' to become the main and the back-up meters. In according to the approved revised monitoring plan, the net electric power exported to the grid (EG_y) during 29/09/2010-24/10/2010 is calculated by the following formula:

$$EG_y = EG_{out,y} \times (1 - TLR) - EG_{in,y} \times (1 + TLR) = 99.59\% EG_{out,y} - 100.41\% EG_{in,y}$$

EG_y = Electric power exported to the grid (MWh).

EG_{out,y} = Electricity supplied by the project activity to the grid (MWh).

EG_{in,y} = Electricity imported from the grid (MWh).

TLR = The rate of transmission losses is set as 0.41%. Please refer to the detailed description in Annex 4 of the revised monitoring plan¹.

TEG_y is measured by the sum of the three meters (M3, M4, and M5) at the outlet of generators. The data are measured continuously by the meters, and the meters are read and recorded daily by the plant operation staff in the operation log. The monthly data will be recorded electronically.

Monitoring Organization and Responsibility

The project owner set up a monitoring team responsible for the monitoring plan. The structure of the monitoring team is outlined in Figure 3-2.

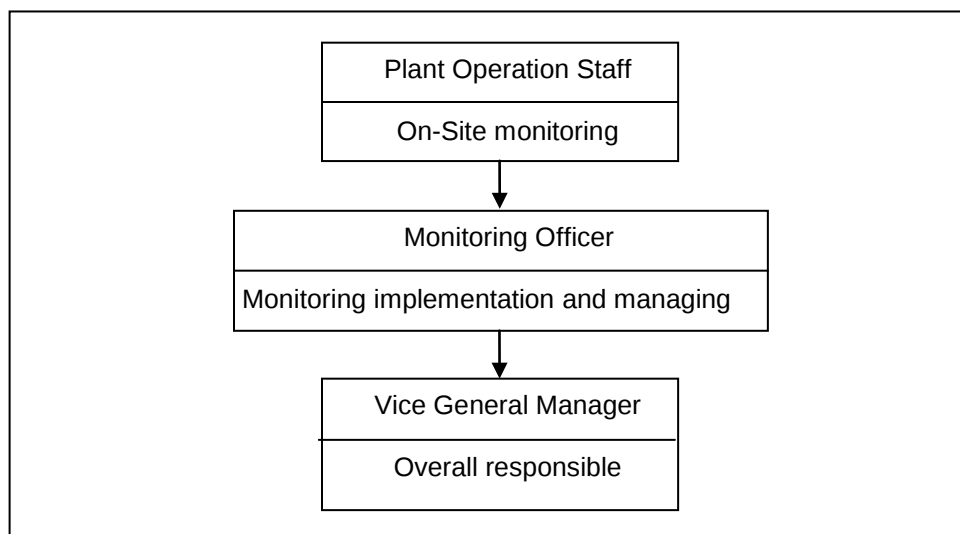


Figure 3-2 Structure of the monitoring team

The responsibilities of the team are briefly described as following:

Vice General Manager: hold the overall responsibility for the monitoring process and approval of the monitoring report.

¹http://cdm.unfccc.int/filestorage/W/B/8/WB8RG02A9S6PZ4O1YCKM5EJVLFTUIX/Revised%20MP_Clean.pdf?t=TUp8bHh4OHVr fDDtEj9wk2rEUVhYhJCTUocC

Monitoring Officer: in charge of all relevant matters with the monitoring activity, including but not limited to supervision and verification of metering and recording; collection of additional data, sales / billing receipts; calibration; calculation of emission reductions; preparation of monitoring report.

Plant Operation Staff: responsible for the measurement of the monitored data, and assisted the monitoring officer on the plant site.

QA/QC Procedure

In case only M1 malfunctions, the data from M1' will be used for data crosscheck. In case both M1 and M1' malfunction, the data from M2 and M2' will be used to calculate for a conservative estimate. In case all meters fail, the project owner and the grid company will jointly calculate a conservative estimate of all the data.

The Monitoring Officer has organized training for staffs in relation with monitoring team on CDM knowledge; monitoring methodology and CDM monitoring Manual; data recording and archiving; relevant laws and regulations.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

Baseline emissions include only CO₂ emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, calculated as follows:

$$BE_y = (EG_y - EG_{\text{baseline}}) \cdot EF_{\text{grid,CM,y}} \quad (\text{E.1})$$

Where:

BE_y = Baseline emissions in year y (tCO₂/yr).

EG_y = Net electricity exported to the grid by the project activity (MWh).

EG_{baseline} = Baseline electricity supplied to the grid in the case of modified or retrofit facilities (MWh). For new power plants this value is taken as zero, $EG_{\text{baseline}} = 0$.

$EF_{\text{grid,CM,y}}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the "Tool to calculate the emission factor for an electricity system". The value has been calculated ex ante as 0.8498tCO₂/MWh and there is no need for monitor and recalculation.

The detailed baseline emissions are calculated in the Table 4-1 below.

Table 4-1 Baseline Emissions from 20/06/2008 to 24/10/2010

Period	Electricity exported (EG out,y)	Electricity imported (EG in,y)	Net electricity exported (EGy)	Baseline emission (BE _y)
	MWh	MWh	MWh	tCO ₂ e/MWh
20/06/2008-30/06/2008	4,002.532	0.000	4,002.532	3,401.352

01/07/2008-31/07/2008	24,212.788	0.000	24,212.788	20,576.027
01/08/2008-30/08/2008	31,111.136	0.000	31,111.136	26,438.243
31/08/2008-29/09/2008	29,150.088	0.000	29,150.088	24,771.745
30/09/2008-30/10/2008	23,756.172	0.000	23,756.172	20,187.995
31/10/2008-28/11/2008	12,607.920	0.000	12,607.920	10,714.210
29/11/2008-29/12/2008	8,849.808	0.000	8,849.808	7,520.567
Subtotal (20/06/2008-29/12/2009)	133,690.444	0.000	133,690.444	113,610*
30/12/2008-29/01/2009	5,730.648	0.000	5,730.648	4,869.905
30/01/2009-26/02/2009	5,999.532	0.000	5,999.532	5,098.402
27/02/2009-29/03/2009	3,317.612	22.968	3,294.644	2,799.788
30/03/2009-28/04/2009	9,870.828	15.312	9,855.516	8,375.217
29/04/2009-29/05/2009	11,949.168	0.000	11,949.168	10,154.403
30/05/2009-28/06/2009	17,665.441	0.000	17,665.441	15,012.092
29/06/2009-29/07/2009	36,092.496	0.000	36,092.496	30,671.403
30/07/2009-29/08/2009	36,326.004	0.000	36,326.004	30,869.838
30/08/2009-28/09/2009	35,815.309	0.000	35,815.309	30,435.850
29/09/2009-29/10/2009	31,207.427	0.000	31,207.427	26,520.071
30/10/2009-28/11/2009	17,015.447	0.000	17,015.447	14,459.727
29/11/2009-29/12/2009	10,498.366	0.000	10,498.366	8,921.511
Subtotal (30/12/2008-29/12/2009)	221,488.278	38.280	221,449.998	188,188*
30/12/2009-29/01/2010	7,029.647	0.000	7,029.647	5,973.794
30/01/2010-26/02/2010	6,382.992	0.000	6,382.992	5,424.267
27/02/2010-29/03/2010	9,181.669	1.848	9,179.821	7,801.012
30/03/2010-28/04/2010	10,007.528	2.508	10,005.020	8,502.266
29/04/2010-29/05/2010	17,762.580	0.000	17,762.580	15,094.640
30/05/2010-28/06/2010	22,260.216	0.000	22,260.216	18,916.732
29/06/2010-29/07/2010	34,002.408	0.000	34,002.408	28,895.246
30/07/2010-29/08/2010	35,027.509	0.000	35,027.509	29,766.377
30/08/2010-28/09/2010	34,117.644	0.000	34,117.644	28,993.174
29/09/2010-24/10/2010	19,622.324	0.396	19,541.475	16,606.345
Subtotal (30/12/2009-24/10/2010)	195,394.517	4.752	195,309.312	165,973*
Total (20/06/2008-24/10/2010)	550,573.239	43.032	550,449.754	467,771*

* Emissions calculated are round down to make conservative estimate.

4.2 Project Emissions

The power density (PD) of the project activity is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}} \quad (E.2)$$

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.

For this project: PD=51,000,000W/237,400m²=214W/m², which is greater than 10 W/m². According to the ACM0002, if the power density of the power plant is greater than 10 W/m², the project emission is zero, therefore, PE_y=0.

4.3 Leakage

According to the ACM0002, the leakage in the project can be neglected, therefore LE_y=0.

4.4 Summary of GHG Emission Reductions and Removals

The emission reductions (ER_y) are the deduction of the project emission (PE_y) and the leakage (LE_y) from the baseline emission (BE_y) in year y, as follows:

$$ER_y = BE_y - PE_y - LE_y \quad (E.3)$$

Where:

ER_y = Emission reductions in year y (t CO₂e/yr).

BE_y = Baseline emissions in year y (t CO₂e/yr).

PE_y = Project emissions in year y (t CO₂e/yr), for the project, PE_y=0.

LE_y = Leakage emissions in year y (t CO₂e/yr), for the project, LE_y=0.

The emission reductions of the project activity during the monitoring period (06/20/2008 – 24/10/2010) are summarized in Table 4-2.

Table 4-2 Emissions Reduction from 20/06/2008 to 24/10/2010

Year	Baseline Emissions (BE _y)	Project Emissions (PE _y)	Leakage (LE _y)	Emission Reductions (ER _y)
20/06/2008-29/12/2009	113,610	0	0	113,610
30/12/2008-29/12/2009	188,188	0	0	188,188
30/12/2009-24/10/2010	165,973	0	0	165,973
Total 20/06/2008- 24/10/2010	467,771	0	0	467,771

5 ADDITIONAL INFORMATION

The actual emission reductions generated during the VCS monitoring period (20/06/2008-24/10/2010) is 10.8% higher than the estimated value in the PDD (converted to 857 days), which is mainly due to the inclusion of rainy period (July – October 2010). According to the Feasibility Study Report of the project, the water flow resources during July to October accounts for 61.96% of annual total value based on multi-year monitoring of local hydrological data. In 2010, the water flow resource from June to October accounted for 64.76% of the yearly amount, and its distribution is similar to the historical trend. When considering the water flow impact on the emission reductions by multiplying the annual estimated emission reductions with weights of water resource distribution for the corresponding months, the actual emission reductions generated during 29/06/2010 to 24/10/2010 are even 2.44% lower than the estimated value (converted to 118 days). The emission reductions generated from the first two years, 20/06/2008 to 28/06/2010, are 0.14% lower than the annual estimated value of 179,797 tCO₂ in the PDD (converted to 739 days). Therefore, the amount of emission reductions achieved during its VCS monitoring period is considered as reasonable.

ANNEX 1 VCS REQUIREMENT²

DATONG RIVER TIANWANGGOU HYDROPOWER STATION

Document Prepared By Climate Bridge Ltd.

Project Title	Datong River Tianwanggou Hydropower Station
Version	Version 1.0
Date of Issue	02-03-2012
Prepared By	Ms. Ling Li, Climate Bridge Ltd.
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² The VCS Registration and Issuance Process (v3.1) requires that for the project is claiming GHG credits sequentially under the VCS Program and the CDM and where the project description and validation report follow CDM templates and procedure, the project proponent shall complete the cover page and sections 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13 of the VCS Project Description (ver3.0). As sections 1.2, 1.3, 1.5, 1.6, and 1.9 have been completed in the above report, only the cover page and the remaining clauses are address here.

1.7 Project Scale and Estimated GHG Emission Reductions or Removals

The Project was registered as a CDM project on 25/10/2010. The estimated GHG emission reductions for the crediting period are shown as below.

Project	√
Mega-project	

Years	Estimated GHG emission reductions or removals (tCO ₂ e)
Year 2012	179,797
Year 2013	179,797
Year 2014	179,797
Year 2015	179,797
Year 2016	179,797
Year 2017	179,797
Year 2018	179,797
Year 2019	179,797
Year 2020	179,797
Year 2021	179,797
Total estimated ERs	1,797,970
Total number of crediting years	10
Average annual ERs	179,797

1.10 Conditions Prior to Project Initiation

The condition existing prior to the project initiation is that electricity will be supplied from local power grid, part of NWCPG, and the project has not been implemented to generate GHG emission for the purpose of their subsequent reduction, removal or destruction.

1.12.1 Proof of Title

GEPIC Darong Electric Power Company Ltd. owns the right of the use of the project, which is proved in the China DNA's LoA issued under CDM³.

1.12.2 Emissions Trading Programs and Other Binding Limits

The project registered as a CDM project on 25/10/2012 and its crediting period under CDM scheme starts on 25/10/2012, while its VCU crediting period under starts from 20/06/2008 and

³<http://cdm.unfccc.int/filestorage/3/I/P/3IPELHYUXWF6R9T2BM5VQ7D0SK14Q8/LoA%20China.pdf?t=RHd8bHh6a2hifDDNTv3Yjglb-HI10p6mtfUC>

ends on 24/10/2012. Therefore, the emission reductions generated by the project under the indicated VCU monitoring period will not be used for compliance with an emission trading program or to meet binding limits on GHG emissions other than VCS.

1.12.3 Participation under Other GHG Programs

The project has been registered as a CDM project on 25/10/2012 (ref. no. 2840), please refer to <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1249300679.15/view> for details.

1.12.4 Other Forms of Environmental Credit

No other form of GHG-related environmental credit for GHG emission reductions or removals has been or will be claimed under the VCS Program.

1.13 Additional Information Relevant to the Project

Eligibility Criteria

N/A, the project is not a grouped project.

Leakage Management

N/A, the leakage of the project is zero.

Commercially Sensitive Information

N/A, all information stated in this report is public.

Further Information

N/A.