

MONITORING REPORT

(Version 01)

Qinghai Jinshaxia 70 MW Hydropower Project

(CDM registration reference number: 1467)

Registration Date: 5 May, 2008

The first Crediting Period: 5 May, 2008 – 4 May, 2015

Monitoring Period: 5 May, 2008 – 31 August, 2008

Dated: 9 September, 2008

Editor: CPI Carbon Asset Management Co., Ltd.

1. Introduction

This document reports the emission reduction generated by the Qinghai Jinshaxia 70MW Hydropower Project, CDM registration reference number is 1467 in the following monitoring period:

5 May, 2008 – 4 May, 2015

2. General description of the project

2.1 Description of the Project Activity

Jinshaxia 70MW Hydropower Project (hereinafter referred to as “the proposed project”) is located on Datong River, in Huzhu Tu Autonomous County, Haidong Prefecture, Qinghai Province, China, and is 141 km away from Xining City. The proposed project is a low-weir diversion-type run-of-river hydropower project with an installed capacity of 70 MW.

The primary objective of the proposed project is to generate electricity to meet the ever-increasing demand in the Qinghai Provincial Grid, which is an integral part of the Northwest China Grid (NWCG). According to the Planning Report of Utilizing Water Resource in Datong River Basin, the proposed project is expected to supply 249.51 GWh electricity annually before the year of 2020 and 149.71 GWh after the year of 2020 to NWCG through the Qinghai Provincial Grid. Electricity generated by the proposed project will displace part of the electricity generated by the NWCG which is dominated by fuel-fired power plants, and thus greenhouse gas (GHG) emission reductions could be achieved. And also, it contributes to sustainable development in the region by supply of reliable, zero-emitting renewable energy, improvement of villagers’ household, education and health, increasing local incomes and providing job opportunities.

2.2 Technical description of the project activity

Location of the project activity

The proposed project site is located on the downstream of the Datong River in Huzhu Tu Autonomous County, Haidong Prefecture, Qinghai Province, China, and is 141 km away from Xining City. The coordinates of the project are: 101°52'E, 36°57'N.

Technology to be employed by the project activity

The proposed project is a low-weir diversion-type run-of-river hydropower project with a total installed capacity of 70 MW and a designed operation lifetime of 30 years. The proposed project is consisted of a diversion weir, a penstock, a pressure adjustment well, pressure pipelines, a powerhouse and a step-up substation. Through the penstock, a water head is formed taking advantage of the natural height drop,

which then enters into the pressure adjustment well. The hydraulic pressure of the water is increased through high pressure pipeline, then the water flows into the power station and drives the generator to produce electricity. Finally, voltage of the generated power is increased to 110 kV through the step-up substation and the power is supplied to NWCG.

The diversion weir is gravity type. The length of the penstock is 6.404km, and the total length of the pressure pipelines is 148m. Four vertical-axis mixed-flow turbines (3×20MW+1×10MW) with designed head of 72.5 meters are installed to supply electricity of 249.51 GWh (before 2020) and 149.71 GWh (after 2020). To deliver the electricity to the grid, two transmission lines will be constructed from the step-up substation to 110kV transmission substation.

All technologies utilized in the project are domestic technologies. There is no technology imported to China by the proposed project.

3. Monitoring methodology and plan

The monitoring methodology ACM0002 (version 06) -“Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources” is selected for the proposed project. In accordance with the monitoring methodology, the following parameter needs to be monitored for the proposed project:

- Net Electricity Supply

ID	Data Type	Data variable	Data unit	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic /paper)	For how long is archived data to be kept?
EGy	Electricity	Net electricity delivered to the grid	MWh	Hourly measurement and monthly recording	100%	Electronic	During the crediting and two years after

4. Quality Control and Quality Assurance (QC/QA)

4.1 QC/QA procedures

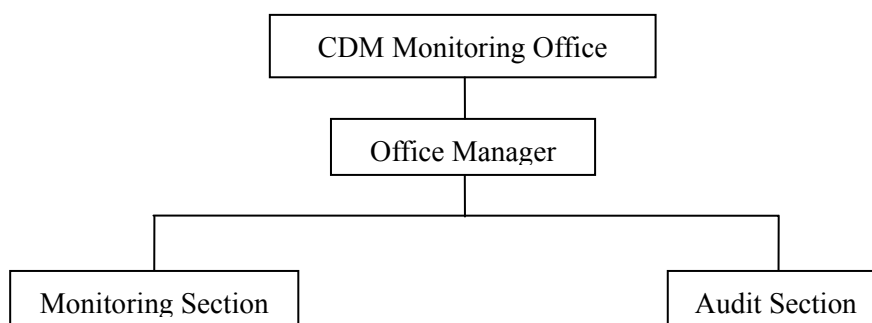
ID	Uncertainty level of data (High/Medium/Low)	Explain QC/QA procedures planned for these data, or why such procedures are not necessary
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EGy	Low	<p>The electricity output from each generator is monitored hourly and recorded monthly. The assigned person is responsible for recording the data. Data and records will be checked prior to being archived. So, measurements are being continuously recorded, and then the monthly electricity outputs can be shown.</p> <p>The measurement will in compliance with the National Guidelines and requirements of the grid company for accuracy and reliability. The data checks will be cross-check by the metering system and electricity sales receipts. The project company is responsible to provide this data yet.</p>
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4.2 Roles and responsibilities

Prior to the start of the crediting period, the project owner will set up a CDM Monitoring Office and designate a qualified staff responsible for all relevant matters, including monitoring of emission reductions, data collection and archiving, QC/QA, and verification. The structure of the CDM Monitoring Office is outlined in Figure 1.

Figure 1 Organization Chart of the CDM Project Management Office



The responsibilities of the sections are briefly described as following:

- Office Manager: Manage the work of CDM Monitoring Office; Charge of all relevant matters with the monitoring activity.
- Monitoring Section: Monitor, collect and archive the data according to the Monitoring Plan.
- Audit Section: Audit the work of Monitoring Section and execute the QC/QA procedures according to the Monitoring Plan.

5. GHG Calculations

According to the methodology: $ER_y = BE_y - PE_y - L_y$

5.1 Project emissions (PE_y)

The submerged area of the project is 350,050.7321 m² (including the land area and the river surface area). The power density of the project is 200 W/m² (=70,000,000/350,050.7321)>10W/m². Therefore, $PE_y = 0$.

5.2 Leakages (L_y)

According to the methodology, the leakage of the project need not be considered. $L_y=0$.

5.3 Baseline emissions (BE_y)

The baseline emissions (BE_y in tCO₂e) are the product of the baseline emissions factor (EF_y in tCO₂e/MWh, calculated ex-ante and will not be updated during the first crediting period) times the net electricity supplied by the project activity to the grid (EG_y in MWh) during the monitoring period:

$$BE_y = EF_y \times EG_y$$

Electricity-delivered-to-grid

period	The difference of the reading between the last month and this month	Ratio	Electricity Exported (MWh)
05/05/2008-31/05/2008	136.295	132000	17990.940
01/06/2008-30/06/2008	132.376	132000	17473.632
01/07/2008-31/07/2008	214.989	132000	28378.548
01/08/2008-31/08/2008	323.302	132000	42675.864
total			106518.984

Electricity-achieved-from-grid

period	Electricity-achieved-from-grid (MWh)	Electricity Imported (MWh)
05/05/2008-20/05/2008	1.08	1.385
21/05/2008-20/06/2008	1.38	1.989
21/06/2008-20/07/2008	1.14	1.749
21/08/2008-20/08/2008	1.62	2.229
21/08/2008-31/08/2008	0.6	0.816

total		8168
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Note: According to conservative manner, Electricity Imported= Electricity-achieved-from-grid+The transformer loss

Electricity transmit with grid

period	Electricity Exported (MWh)	Electricity Imported (MWh)	Net Electricity-transmitted-to-grid (MWh)
05/05/2008-31/08/2008	106518.984	8.168	106510.816

Meter readings of the exported and imported electricity on May 5 and the assigned day of every month are aggregated by assigned person from the grid company and confirmed by the grid company. Related documents have been provided to DOE for double check.

Net electricity transmitted to the grid is: 106510.816 MWh;

The baseline emission factor (EF_y) is 0.8473 tCO₂e/MWh;

The baseline emission (BE_y) can be calculated as:

$$BE_y = EF_y \times EG_y = 106510.816 \text{ MWh} \times 0.8473 \text{ tCO}_2\text{e/MWh} = 90247 \text{ tCO}_2\text{e}$$

5.4 Emission reductions

$$ER_y = BE_y - PE_y - L_y = 90247 - 0 - 0 = 90247 \text{ tCO}_2\text{e}$$

Emission reductions generated in the monitoring period (5 May, 2008 –31 August, 2008) is: 90247 tCO₂e.