

Second Monitoring Report

12 MW Hydropower Plant in Bhandardara in Maharashtra, India

Dodson –Lindblom Hydro Power Private
Limited, INDIA

UNFCCC RRef. No. 0430

Project Advisor

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1.Introduction

Dodson-Lindblom Hydro Power Private Limited (Project Proponent) has **registered** a small scale project activity of 12 MW hydropower plant as a Clean Development Mechanism (CDM) project, hereinafter referred to as the small scale project activity, with CDM Executive Board of United Nations Framework Convention on Climate Change (UNFCCC). This monitoring report is prepared for verification of the emission reductions generated by the project activity. The project has already been issued CERs from its first issuance.

2. Project Reference

Title of the small scale project activity	:	12 MW hydropower plant in Bhandardara in Maharashtra, India.
UNFCCC reference no. of the project	:	0430
Date of registration	:	30/09/2006
Version of the monitoring report	:	01
Date of the report	:	17/01/2008

3. Location of the project activity

The small scale project activity is located in Bhandardara in Akola Taluk in Ahmed Nagar District in Maharashtra state in India.

4. Brief Process description

The project activity is construction and commissioning of a 12 MW hydro electric project at the foot of a hill adjacent to the Bhandardara dam. The project utilises water released from Bhandardara reservoir for irrigation purposes and generates electricity. The net electricity after auxiliary consumption is connected to state electricity grid owned and operated by Maharashtra State Transmission Company Ltd (MSTCL).

5. Type of Project

Type : I. Renewable energy projects

Category : I.D. Grid connected renewable electricity generation

The small scale project activity has applied Version 09 of the Approved small scale methodology I.D. (AMS I.D) - Grid connected renewable electricity generation.

6. Period of verification

Period of verification of emission reductions : **31/08/2006 - 31/12/2007.**

7. Monitoring plan

As per monitoring report in the PDD, the data to be monitored for estimation of the emission reductions are the following :

- (i.) Electricity generated by the project activity in kWh
- (ii.) Net electricity exported to the grid in kWh.
- (iii.) Electricity imported from the grid in kWh

The gross electricity generated by the project activity is monitored in kWh and are recorded regularly by the project proponents. The gross generation of the project activity is given for the monitoring period in Table 8.1 in the subsequent section.

The net electricity exported to the grid is measured monthly and a Joint meter reading statement is made which gives the net electricity exported to the grid by the project activity in kWh. The net electricity exported to the grid, the baseline emission factor of the grid and therefore the emission reductions for the monitoring period is given in Table 8.1 in the subsequent section.

The electricity imported from the grid in kWh would contribute the project emissions. As per registered PDD, the electricity imported from the grid would be considered as project emissions when these emissions are equal to or more than 1 % of baseline emissions. The details of electricity imported by the grid and the emissions due to this electricity are given in the table 8-1. It may be seen that the emissions due to electricity imported from the grid is about 0.15 %. Since, the same are less than 1%, they are not considered. The calibration reports of the meters shall be submitted to DOE during verification.

8. Emission Reductions of the small scale project activity

The emission reductions of the small scale project activity is the net electricity exported to the grid (TP_{Exp}) in kWh multiplied by the baseline emission factor in kg CO₂/kWh.

8.1 Baseline emission factor

The Baseline emission factor (EF_B) is **0.755 kg CO₂ /kWh** has been estimated and validated for Western regional grid of India, the applicable grid for the project activity.

$$\begin{array}{rclclcl} \text{Emissions reductions} & = & TP_{Exp} & * & EF_B & * & 1/1000 \\ (\text{t CO}_2) & & (\text{kWh}) & & (\text{kg CO}_2/\text{kWh}) & & \text{ton/kg} \end{array}$$

The emission reductions of the project activity for the monitoring period is shown in the table 8-1 below:

Table 8-1 – Emission reductions of the small project activity

Month	Year	Gross Generation (kWh)	Net export to grid (kWh)	Import from the grid (kWh)	Baseline emission factor (kgCO ₂ /kWh)	Emission Reduction (t CO ₂)
September	2006	7,548,540	7,400,400	2,280	0.755	5,587
October	2006	1,064,440	1,042,800	5,916	0.755	787
November	2006	492,230	482,400	11,496	0.755	364
December	2006	5,709,710	5,598,000	9,432	0.755	4,226
January	2007	1,675,440	1,642,800	7,260	0.755	1,240
February	2007	3,509,760	3,441,600	3,783	0.755	2,598
March	2007	4,511,240	4,424,400	7,590	0.755	3,340
April	2007	3,891,170	3,812,400	6,042	0.755	2,878
May	2007	2,361,440	2,314,800	3,561	0.755	1,748
June	2007	0	0	7,890	0.755	0
July	2007	7,579,250	7,430,400	5,139	0.755	5,610
August	2007	9,309,520	9,128,400	2,649	0.755	6,892
September	2007	7,835,400	7,682,400	2,901	0.755	5,800
October	2007	879,270	862,800	5,787	0.755	651
November	2007	4,886,700	4,791,600	9,072	0.755	3,617
December	2007	1,030,810	1,011,600	7,017	0.755	763
Total		62,284,920	61,066,800	97,815		46,101