



**Monitoring report form  
(Version 03.2)**

**Monitoring report**

<b>Title of the project activity</b>	Dolowal, Salar and Bhanubhura Mini Hydroelectric Projects
<b>Reference number of the project activity</b>	0328
<b>Version number of the monitoring report</b>	01
<b>Completion date of the monitoring report</b>	28/03/2014
<b>Registration date of the project activity</b>	30/04/2006
<b>Monitoring period number and duration of this monitoring period</b>	Monitoring period : Seventh (7 <sup>th</sup> ) Duration of monitoring period: 01/11/2012 to 25/04/2013 (end of crediting period)
<b>Project participant(s)</b>	Punjab Hydro Power Private Limited EDF Trading Ltd
<b>Host Party(ies)</b>	India
<b>Sectoral scope(s) and applied methodology(ies)</b>	Sectoral scope : 01 Methodology : AMS I.D Version 07
<b>Estimated amount of GHG emission reductions or net anthropogenic GHG removals by sinks for this monitoring period in the registered PDD</b>	10,208 tCO <sub>2</sub>
<b>Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved in this monitoring period</b>	7,870 tCO <sub>2</sub>
<b>Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period up to 31 December 2012(if applicable)</b>	2, 311 tCO <sub>2</sub>
<b>Actual GHG emission reductions or net anthropogenic GHG removals by sinks achieved during the period from 1 January 2013 onwards (if applicable).</b>	5,559 tCO <sub>2</sub>

**SECTION A. Description of project activity****A.1. Purpose and general description of project activity**

&gt;&gt;

Three Mini Hydroelectric Projects (MHP) aggregating to 4.2 MW at Dolowal, Salar and Bhanubhura on the Kotla Branch Canal, District Sangrur, Punjab, India were commissioned in April 2003. The plants are operating successfully since then.

The purpose of the project activity is to generate electricity by utilizing water flowing through the existing canal system as a renewable energy resource to meet the ever-increasing demand of energy in the region. The development of the project activity contemplates the production of clean hydroelectric power that will contribute to reduce CO<sub>2</sub> emissions, which would have occurred otherwise, in absence of these projects.

1.4 MW hydroelectric power plant at Dolowal, 1.5 MW hydroelectric power plant at Salar and 1.3 MW hydroelectric power plant at Bhanubhura of this project activity generate electricity and sell it to the State utility i.e. Punjab State Electricity Board.

These three plants are of low head, canal drop based mini hydroelectric projects. The projects are canal based renewable hydroelectric generating plants, which includes forebay, intake, power house, draft tube, turbine, and tailrace. The component plants do not involve any type of displacement, rehabilitation or relocation.

The projects are generating electricity successfully by converting the potential of kinetic energy of the canal water and the renewable electricity produced is fed into the Punjab State Electricity Board Grid thereby replacing the equivalent amount of electricity produced from thermal stations and thus reducing green house gas emission.

**Equipment Details:**

The MHPs were completed with major equipment of following details:

SN	MHP	Equipment	Qty	Capacity	Manufacturer
1	Dolowal	Turbine & its accessories	2	700 kW	Triveni Engineering & Industries Limited (TEIL), New Delhi
		Induction Generator	2	700 kW	Crompton Greaves Limited
2	Salar	Turbine & its accessories	2	750 kW	TEIL., New Delhi
		Induction Generator	2	750 kW	Crompton Greaves Limited
3	Bhanubhura	Turbine & its accessories	2	650 kW	Boving Fouress Limited, Bangalore
		Induction Generator	2	650 kW	Crompton Greaves Limited

The project activity consists of 3 sites of small hydro power plants i.e. Dolowal, Salar & Bhanubhura utilizing the potential and kinetic energy of the canal water to generate electricity.

Dolowal: The powerhouse comprises of two induction generators of capacity 700 kW each coupled to two numbers of vertical Semi-Kaplan turbines. The power is generated at a voltage of 415V, which is further stepped-up to 11kV to match the nearest substation voltage level.

Salar: The powerhouse comprises of two induction generators of capacity 750 kW each coupled to two numbers of vertical Semi-Kaplan turbines. The power is generated at a voltage of 415V, which is further stepped-up to 11kV to match the nearest substation voltage level.

Bhanubhura: The powerhouse comprises of two induction generators of capacity 650 kW each coupled to two numbers of vertical Full Kaplan turbines. The power is generated at a voltage of 415V, which is further stepped-up to 11kV to match the nearest substation voltage level.

The principal components of each scheme are:

a) Forebay and intake: Forebay is partly trapezoidal and RCC trough section where the water is diverted towards the powerhouse upon closure of main canal gates via the intake.

- b) Power House: A semi outdoor type power house has been provided to house of turbines, generator, and related electro-mechanical equipment.
- c) Draft Tube: RCC draft tube has been provided to convey the tail water emerging from discharge side of the turbine to the main canal via tailrace channel.
- d) Turbine: Vertical Semi Kaplan with siphon intake machines has been provided at Dolowal and Salar while Vertical Full Kaplan has been provided at Bhanubhura.
- e) Tailrace: The discharge emerging out of the draft tubes is carried back to the main canal on downstream of the project by trapezoidal shaped tailrace channel connecting draft tubes exit to the main canal.
- f) Switchyard: Surface type switchyard has been provided with necessary equipment for interfacing with the grid.

The projects were implemented and operated as planned and described in the Project Design Document (PDD).

During the current monitoring period i.e. 01/11/2012 to 25/04/2013 (i.e. the date of end of crediting period), the net power exported to the grid by the three plants is 8.356 million kWh, which corresponds to 7,870 tCO<sub>2</sub> emission reduction in the monitoring period.

**A.2. Location of project activity**

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MHP Dolowal : The project is located at Kotla Branch Canal

Latitude : 30°32 ' 34 N, Longitude : 76° 03 ' 00 E  
 Town : Malerkotla  
 District : Sangrur  
 State : Punjab  
 Country : India

MHP Salar : The project is located at Kotla Branch Canal

Latitude : 30° 30 ' 37 N, Longitude : 75° 59 ' 41 E  
 Town : Malerkotla  
 District : Sangrur  
 State : Punjab  
 Country : India

MHP Bhanubhura : The project is located at Kotla Branch Canal

Latitude : 30° 27 ' 37 N, Longitude : 75° 56 ' 21 E  
 Town : Malerkotla  
 District : Sangrur  
 State : Punjab  
 Country : India

**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 if the Party involved wishes to be considered as project participant (Yes/No)
India (host)	Private entity: Punjab Hydro Power Private Limited	No
United Kingdom of Great Britain and Northern Ireland	Private Entity : EDF Trading Ltd.	No

**A.4. Reference of applied methodology**

&gt;&gt;

Type I : Renewal Energy Projects  
 Category : I.D. Renewable Electricity Generation for a Grid  
 Version : 07

**A.5. Crediting period of project activity**

&gt;&gt;

Crediting period for this project activity is 26/04/2003 to 25/04/2013 (Fixed).

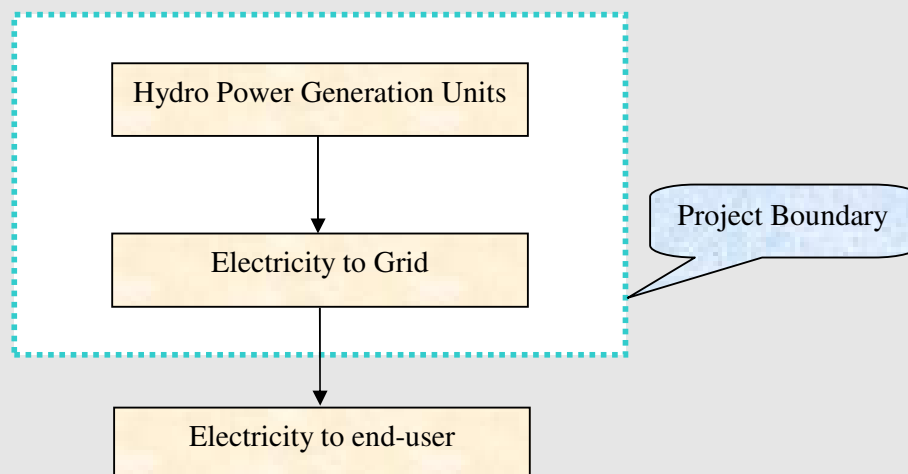
**SECTION B. Implementation of project activity****B.1. Description of implemented registered project activity**

&gt;&gt;

The projects activities were commissioned on dates as mentioned below while it was registered with CDM EB on 30/04/2006.

SN	Name of the Project	Date of Commissioning
1	Dolowal	26 April 2003
2	Salar	26 April 2003
3	Bhanubhura	26 April 2003

The project proponent has installed all monitoring equipment to monitor the parameters which were described in the registered CDM PDD.



The project activity is in continuous operation since the date of commissioning. No special events or change of equipments have taken place during the current monitoring period.

No events occurred during the current monitoring period which may have affected the applicability of the methodology.

**B.2. Post registration changes****B.2.1. Temporary deviations from registered monitoring plan or applied methodology**

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Not Applicable

**B.2.2. Corrections**

&gt;&gt;

Not Applicable

**B.2.3. Permanent changes from registered monitoring plan or applied methodology**

&gt;&gt;

Not Applicable

**B.2.4. Changes to project design of registered project activity**

&gt;&gt;

Not Applicable

**B.2.5. Changes to start date of crediting period**

&gt;&gt;

Not Applicable

**B.2.6. Types of changes specific to afforestation or reforestation project activity**

&gt;&gt;

Not Applicable

**SECTION C. Description of monitoring system**

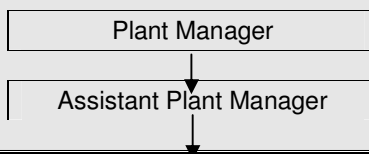
&gt;&gt;

For this project activity, the monitoring systems and procedures followed are as described below:

**Energy:**

1. The Energy exported (kWh) and Energy imported (kWh) at the interconnection points have been measured by the bidirectional meters (i.e. Trivector Meters) installed at the interconnection points at all the 3 (three) project sites.
2. The Net Saleable Energy (Net electricity exported to grid) has been calculated as a difference between energy exported and energy imported. It is based on monthly joint meter readings.
3. Monthly joint meter readings were taken at interconnection points and certified by representatives of Punjab Hydro Power Private Limited (PHPPL) and the purchaser i.e. Punjab State Electricity Board (PSEB).
4. The joint meter readings were used to raise invoice for sale of net energy to PSEB.
5. The energy generated has been measured by the energy meters installed at the generation points on an hourly basis.
6. The auxiliary energy consumption has been measured by the auxiliary energy consumption meters installed at each of the plant sites on an hourly basis.
7. The data of the aforesaid parameters are recorded on hourly basis which are summed into a daily reading.
8. The hourly reading of electricity generation and auxiliary consumption were aggregated to daily & monthly electricity figure.
9. Monthly reports stating the energy exported, energy imported, energy generated and auxiliary energy consumption were prepared by shift-in-charge and verified by plant managers.
10. The finance department cross checked the data provided by plant managers.

The organizational structure responsible for monitoring the various parameters as per Monitoring Plan is as below:-

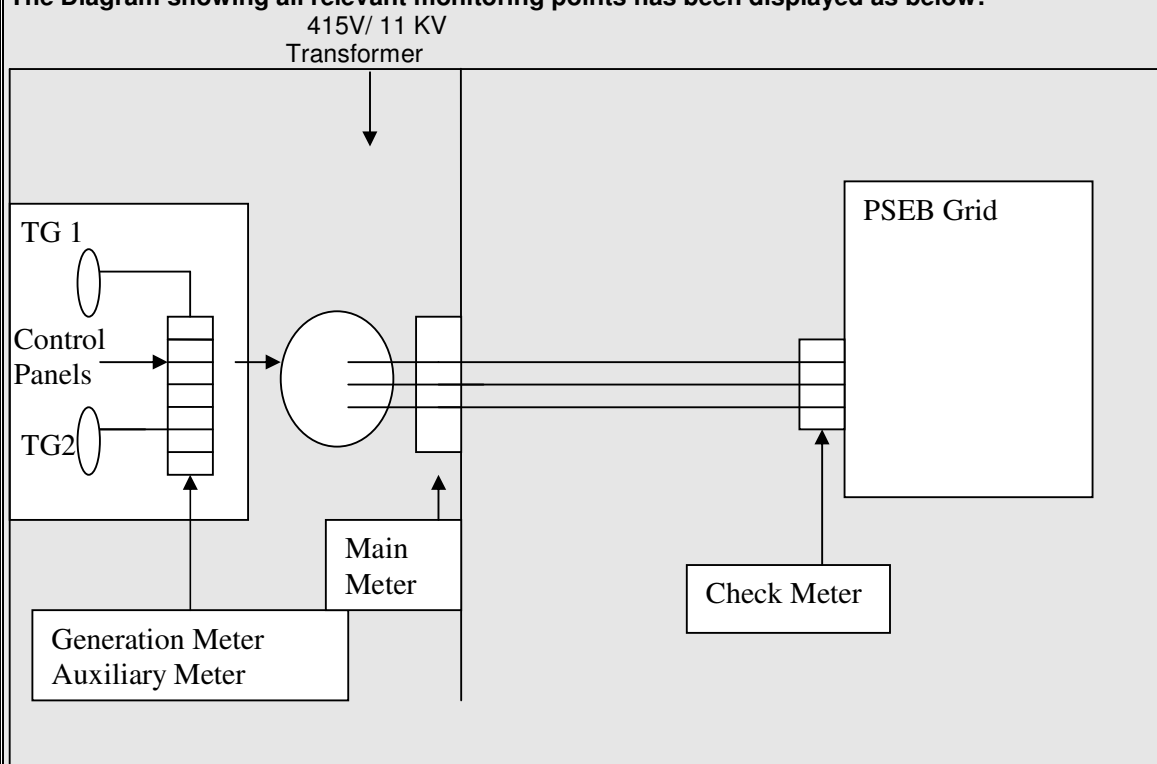


SHIFT I Plant Shift Supervisor Technical Assistant	SHIFT II Plant Shift Supervisor Technical Assistant	SHIFT III Plant Shift Supervisor Technical Assistant
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The hourly data is monitored and recorded in the log books by the shift staff comprising of Plant Shift Supervisor and Technical Assistant. The daily data is checked and countersigned by the Assistant Plant Manager. The daily and monthly data is checked and verified by the Plant Manager. The data is audited annually by the auditor of the Company having financial background.

As per the registered PDD main meter will be the basis for billing. In case of failure of the main meter, check meter will be decisive for billing. In case of failure of both main and check meter, the emission reduction calculation will be done based on the hourly generation and auxiliary consumption data recorded by PHPPL at generation end. During this monitoring period, the main meters for all the sites were in normal operating conditions and hence the main meters are decisive for emission reduction calculations.

**The Diagram showing all relevant monitoring points has been displayed as below:**



**SECTION D. Data and parameters**

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

<b>Data / Parameter:</b>	Grid Emission Factor
<b>Unit:</b>	kg of CO <sub>2</sub> / kWh
<b>Description:</b>	The Grid Emission Factor has been calculated as the weighted average of the Operating Margin Emission Factor (EF <sub>OM</sub> ) and the Build Margin Emission Factor (EF <sub>BM</sub> ).
<b>Source of data:</b>	Northern Region Grid's permission from Central Electricity Authority
<b>Value(s) applied):</b>	0.942
<b>Purpose of data:</b>	Baseline emission calculations

Additional comment:	This parameter is fixed ex-ante for the full crediting period
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**D.2. Data and parameters monitored**

<b>Data / Parameter:</b>	Energy exported																																																			
Unit:	kWh																																																			
Description:	Energy exported to grid																																																			
Measured/Calculated / Default:	Measured																																																			
Source of data:	Joint Meter Reading																																																			
Value(s) of monitored parameter:	<table border="1"> <thead> <tr> <th>Dolowal</th> <th>Salar</th> <th>Bhanubhura</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>2,675,460</td> <td>2,733,130</td> <td>2,967,740</td> <td><b>8,376,330</b></td> </tr> </tbody> </table>				Dolowal	Salar	Bhanubhura	Total	2,675,460	2,733,130	2,967,740	<b>8,376,330</b>																																								
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Measuring/ Reading/ Recording frequency:	Continuous monitoring and monthly recording
Calculation method (if applicable):	Not Applicable
QA/QC procedures:	The power exported by PHPPL is monitored and recorded on the basis of reading of the Main Meter & Check Meter. Joint Meters reading are based on the Main Meter reading for the export and import of the electricity to and from the Grid. The principles of Frequency, Data recording and Reliability as mentioned in the PDD are strictly adhered to. The Main Meters and Check Meters are test checked for accuracy every six months by the team of PSEB. The Meters installed at generation end are also test checked for accuracy every six months.
Purpose of data:	To calculate emission reductions
Additional comment:	Data will be archived on paper and kept for 2 years after the end of crediting period or the last issuance of CERs for this project activity, whichever occurs later

<b>Data / Parameter</b>	Energy imported																																		
Unit	kWh																																		
Description	Energy imported from grid																																		
Measured /Calculated /Default	Measured																																		
Source of data	Joint Meter Reading																																		
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**F-CDM-MR**

	Type	L&T Electronic bidirectional trivector meter	L&T Electronic bidirectional trivector meter	L&T Electronic bidirectional trivector meter
	Accuracy class	(±)0.50%	(±)0.50%	(±)0.50%
	Serial number	01997702	07420158	MPU00935
	Calibration frequency	6 month	6 month	6 month
	Calibrations dates and validity during monitoring period	29/06/2012 (valid till 28/12/2012) 11/12/2012 (valid till 10/06/2013)	29/06/2012 (valid till 28/12/2012) 11/12/2012 (valve till 10/06/2013)	29/06/2012 (valid till to 28/12/2012) 11/12/2012 (valve till 10/06/2013)
Measuring/Reading/Recording frequency	Continuous monitoring and monthly recoding			
Calculation method(if applicable)	Not Applicable			
QA/QC procedures	The main and check meters installed are bidirectional tri-vector meters capable of recording energy exported and energy imported. The same are test checked for accuracy every six months. The data of main meter is checked / compared with the data of the check meter.			
Purpose of data	To calculate emission reductions.			
Additional comment	Data will be archived on paper and kept for 2 years after the end of crediting period or the last issuance of CERs for this project activity, whichever occurs later			

<b>Data / Parameter</b>	Net saleable energy			
Unit	kWh			
Description	Net salable energy to grid			
Measured /Calculated /Default	Calculated			
Source of data	Joint Meter Reading			
Value(s) of monitored parameter	<b>Dolowal</b>	<b>Salar</b>	<b>Bhanubhura</b>	<b>Total</b>
	2,669,110	2,727,510	2,958,930	<b>8,355,550</b>
Monitoring equipment	As this is calculated, this section is not applicable for this monitoring parameter.			
Measuring/Reading/Recording frequency	Monthly recording			
Calculation method(if applicable)	Net Saleable energy = Energy Exported – Energy Imported			
QA/QC procedures	Net Saleable energy is the net exported energy which is the difference of energy exported and energy imported. Joint Meters reading are taken from the Main and Check Meter every month to arrive at Net Saleable Energy. Net saleable generation is calculated from main meter. The Main and Check Meters are tested for accuracy every six months.			
Purpose of data	To calculate emission reductions			
Additional comment	Data will be archived on paper and kept for 2 years after the end of crediting period or the last issuance of CERs for this project activity, whichever occurs later			

<b>Data / Parameter</b>	Energy generated
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Unit	kWh			
Description	Gross energy generated			
Measured /Calculated /Default	Measured			
Source of data	Plants records			
Value(s) of monitored parameter	<b>Dolowal</b>	<b>Salar</b>	<b>Bhanubhura</b>	<b>Total</b>
	2,753,374	2,802,110	3,076,487	<b>8,631,971</b>
Monitoring equipment	<b>Particulars</b>	<b>Dolowal</b>	<b>Salar</b>	<b>Bhanubhura</b>
	Type	Enercon Digital Energy Meter	Enercon Digital Energy Meter	Minsun Digital Energy Meter
	Accuracy class	(±) 0.5%	(±) 0.5%	(±) 0.5%
	Serial No. (Unit-I)	E33/148-0702	E33/150-0702	6690502
	Serial No. (Unit-II)	E33/149-0702	E33/151-0702	6690501
	Calibration Frequency	6 month	6 month	6 month
	Calibration during monitoring period	19/06/2012 (Valid till 18/12/2012)	19/06/2012 (Valid till 18/12/2012)	19/06/2012 (Valid till 18/12/2012)
		08/12/2012 (Valid till 07/06/2013)	08/12/2012 (Valid till 07/06/2013)	08/12/2012 (Valid till 07/06/2013)
Measuring/Reading/Recording frequency	Continuous monitoring and hourly recording			
Calculation method (if applicable)	Not Applicable			
QA/QC procedures	The readings of the energy generated are taken from the meters installed at generation point. These are test checked for accuracy every six months.			
Purpose of data	Monitored as mentioned in PDD.			
Additional comment	Data will be archived on paper and kept for 2 years after the end of crediting period or the last issuance of CERs for this project activity, whichever occurs later			
<b>Data / Parameter</b>	Auxiliary energy consumption			
Unit	kWh			
Description	Auxiliary energy consumed for running the plant			
Measured /Calculated /Default	Measured			
Source of data	Plant records			
Value(s) of monitored parameter	<b>Dolowal</b>	<b>Salar</b>	<b>Bhanubhura</b>	<b>Total</b>
	40,297	34,779	40,170	<b>115,246</b>
Monitoring equipment	<b>Particulars</b>	<b>Dolowal</b>	<b>Salar</b>	<b>Bhanubhura</b>
	Type	Enercon	Conzerv	Enercon
	Accuracy class	(±) 1.0%	(+)1.0%	(±) 1.0%

	Serial no.	E64/1187-0902	172264/5705735-0909	E64/1186-0902
	Calibration frequency	6 month	6 month	6 month
	Calibrations during monitoring period	19/06/2012 (Valid till 18/12/2012) 08/12/2012 (Valid till 07/06/2013)	19/06/2012 (Valid till 18/12/2012) 08/12/2012 (valid till 07/06/2013)	19/06/2012 (Valid till 18/12/2012) 08/12/2012 (Valid till 07/06/2013)
Measuring/Reading/Recording frequency	Continuous monitoring and hourly recording			
Calculation method (if applicable)	Not Applicable			
QA/QC procedures	Auxiliary energy consumption readings are recorded at the auxiliary meters installed in the panel. These are test checked for accuracy every six months.			
Purpose of data	Monitored as mentioned in PDD.			
Additional comment	Data will be archived on paper and kept for 2 years after the end of crediting period or the last issuance of CERs for this project activity, whichever occurs later			

### D.3. Implementation of sampling plan

&gt;&gt;

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

&gt;&gt;

SN	Description	Formula	Unit	Value
A	Energy Exported		kWh	8,376,330
B	Energy Imported		kWh	20,780
C	Net Saleable Energy	$C = A - B$	kWh	8,355,550
D	Carbon Emission Factor as per the baseline adopted		kg CO <sub>2</sub> /kWh	0.942
E	Baseline Emissions	$E = (C * D) / 1,000$	ton CO <sub>2</sub>	7,870

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

&gt;&gt;

No project emissions are associated with the project activity during this monitoring period. This is also in line with the PDD and methodology.

### E.3. Calculation of leakage

&gt;&gt;

As the energy generating equipment is not transferred from another activity or the existing equipment is also not transferred to another activity, leakage is not considered. The same is in line with the methodology and the registered PDD.

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

Item	Baseline emissions or baseline net GHG removals by sinks (t CO <sub>2</sub> e)	Project emissions or actual net GHG removals by sinks (t CO <sub>2</sub> e)	Leakage (t CO <sub>2</sub> e)	Emission reductions or net anthropogenic GHG removals by sinks (t CO <sub>2</sub> e)
<b>Total</b>	7,870	Nil	NA	7,870

**E.5. Comparison of actual emission reductions or net anthropogenic 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 <sub>2</sub> e)	10,208	7,870

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

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The actual emission reductions during this monitoring period are less than estimated value in the registered PDD for the equivalent time period.

**E.7. Actual emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards**

Item	Actual values achieved up to 31 December 2012	Actual values achieved from 1 January 2013 onwards
Emission reductions or GHG removals by sinks (t CO <sub>2</sub> e)	2,311	5,559

**Annexure - I**

The month wise data on energy generated in given hereunder. The monthly data is based on the hourly reading taken at the meters installed at the generation end

**Energy Generated (kWh)**

<b>Billing Month</b>	<b>Year</b>	<b>Dolowal</b>	<b>Salar</b>	<b>Bhanubhura</b>	<b>Total</b>
Nov	2012	572,912	568,520	619,948	1,761,380
Dec	2012	238,877	246,265	291,310	776,452
Jan	2013	693,110	695,947	750,560	2,139,617
Feb	2013	370,362	376,731	423,167	1,170,260
Mar	2013	715,940	741,252	789,694	2,246,886
Apr	2013 (till 25 Apr 2013)	162,173	173,395	201,808	537,376
<b>Total</b>		<b>2,753,374</b>	<b>2,802,110</b>	<b>3,076,487</b>	<b>8,631,971</b>

**Annexure - II**

The month-wise data on auxiliary energy consumption is given hereunder. The monthly data is based on hourly reading taken at the auxiliary meters installed at the panel:

**Auxiliary Energy Consumption (kWh)**

<b>Billing Month</b>	<b>Year</b>	<b>Dolowal</b>	<b>Salar</b>	<b>Bhanubhura</b>	<b>Total</b>
Nov	2012	8,055	6,473	6,517	21,045
Dec	2012	5,722	5,213	5,320	16,255
Jan	2013	8,694	8,078	8,153	24,925
Feb	2013	6,066	5,118	6,067	17,251
Mar	2013	8,572	7,027	7,908	23,507
Apr (till 25 Apr)	2013	3,188	2,870	6,205	12,263
<b>Total</b>		<b>40,297</b>	<b>34,779</b>	<b>40,170</b>	<b>115,246</b>

The energy generated data and auxiliary energy consumption data is not used for calculation of emission reductions as the calculation of emission reductions is based on Net Saleable energy i.e. the difference of energy exported and energy imported.

**Annexure - III**

Month-wise data on Net Saleable Energy for the monitoring period is given as under:

As per the Project Design Document, Emission reductions are to be calculated based on the energy exported minus energy imported during shut-down and start-ups by the power plant.

**Net Saleable Energy (kWh)**

Billing Month	Year	Energy Exported				Energy Imported				Net Saleable Energy
		Dolowal	Salar	Bhanubhura	Total	Dolowal	Salar	Bhanubhura	Total	
Nov	Nov 12	556,600	555,120	599,750	1,711,470	640	570	830	2,040	1,709,430
Dec	Dec 12	230,680	238,580	280,150	749,410	1,940	1,030	1,800	4,770	744,640
Jan	Jan 13	674,540	679,740	724,100	2,078,380	120	760	70	950	2,077,430
Feb	Feb 13	359,100	367,470	407,090	1,133,660	1,230	1,030	1,120	3,380	1,130,280
Mar	Mar 13	696,630	723,370	762,230	2,182,230	490	430	500	1,420	2,180,810
Apr	Apr 13 (till 25 Apr 13)	157,910	168,850	194,420	521,180	1,930	1,800	4,490	8,220	512,960
<b>Total</b>		<b>2,675,460</b>	<b>2,733,130</b>	<b>2,967,740</b>	<b>8,376,330</b>	<b>6,350</b>	<b>5,620</b>	<b>8,810</b>	<b>20,780</b>	<b>8,355,550</b>

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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
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 anthropogenic 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.

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