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	2.2 MW hydropower plant in Birsinghpur, Madhya Pradesh of Ascent Hydro Projects Limited (AHPL)	
UNFCCC reference number of the project activity	1280	
Version number of the monitoring report	01	
Completion date of the monitoring report	11/06/2016	
Monitoring period number and duration of this monitoring period	Crediting Period number: 02 Crediting Period: 15/06/2015–24/11/2021 Monitoring period number: 01 Monitoring period: 15/06/2015–31/05/2016 (both dates are included)	
Project participant(s)	Ascent Hydro Projects Ltd (AHPL)	
Host Party	India	
Sectoral scope(s)	01, Energy Industries (renewable/non-renewable sources)	
Selected methodology(ies)	AMS-I.D. Version 18: Grid connected renewable electricity generation	
Selected standardized baseline(s)	Not Applicable	
Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD	13,747 tCO_{2e}	
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	11,397 tCO_{2e}

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

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AHPL is a subsidiary of Dodson–Lindblom International Inc. (DLI), USA-based water resources company involved in developing and operation of hydroelectric plants. AHPL is operating a 2.2 MW hydroelectric project at Birsinghpur in Madhya Pradesh on Build, Own, Operate and Maintain (BOOM) basis for thirty years. The project activity, "Birsinghpur hydroelectric project" is located outside the premises of Sanjay Gandhi Thermal Power Station (SGTPS) owned and operated by Madhya Pradesh Power Generating Company Ltd (MPPGCL), formerly Madhya Pradesh State Electricity Board (MPSEB). The project activity is constructed between the intake channel and the return canal of the thermal power plant.

Relevant dates of the Project activity:

S.No.	Activity	Date
1	Unit I of the project activity has started commercial operation from	24/10/2006
2	Unit II of the project activity has started commercial operation from	06/02/2007
3	Project activity has been registered with UNFCCC on	25/11/2007
4	Project activity has successfully completed Ist Crediting Period[1]	25/11/2007 – 24/11/2014
5	Project activity has also successfully achieved the renewal[2] of crediting period under CDM	13/06/2015
6	Project activity IInd crediting period	15/06/2015 – 24/11/2021
**Project activity is in continuous operation since the commissioning date of Unit 1.		

Purpose of the Project Activity:

The main purpose of the project activity is to utilize condenser-cooling water and available head between the water level in the seal pit and the water level in the return canal for the generation of electricity. In SGTPS, there are four units of 210 MW and one unit 500MW and all the system operates on lake storage cooling system. A huge reservoir is available near the thermal power station. Cooling water for condensers is drawn from the reservoir on River Johilla through the intake canal to the cooling water pump house. Cooling water requirement of 500MW unit and disposal is met through a separate water system. Three (3) pumps are provided in the pump house to meet the cooling system requirement of each thermal unit of 210 MW. Each pump has a pumping capacity of 10,000 cum/hr. Thus, the total quantity of circulating cooling water for each thermal unit is of the order of 30,000 cum/hr.

The Water is circulated through the cooling condensers of the steam generating units by the circulating water pumps. After cooling of the condensers, this water is returned back to the reservoir by a return canal through the seal pit. Water pumped for cooling of auxiliaries is also discharged through the same seal pit. This discharge is of the order of 30,000 cum/hr for each thermal unit. The total quantity of water available at the seal pit after considering losses of about

[1] Total CERs issued from the Ist Crediting Period : 91,578 tCO_{2e}

[2] https://cdm.unfccc.int/Projects/DB/BVQI1186166310.82/view

10% will be about 29,700 cum/hr (8.25 Cumecs). The project activity utilizes the return cooling water discharged by the SGTPS. The crest level of seal pit is about 9 meters high from the canal bed.

The difference of elevation between the water level in the seal pit and the water level in the return canal provides the head and the quantity of water discharging from the seal pit provides the flow for the Birsinghpur mini hydro power project. This „head" is being harnessed to produce electricity in the project activity and thus helps in reducing the Green House Gas (GHG) emission. Electricity is generated at 3.3 KV and stepped up to 33 KV to feed and wheel through Madhya Pradesh Power Transmission Company Ltd (MPPTCL). The total generated electricity by the project activity in the current monitoring period is connected to the state grid and is sold to third parties viz; M/s Nicholas Piramal and M/s IPCA Laboratories. This project is amongst the first of its kind in the country utilizing condensor cooling water for power generation. PP has entered into the Power Purchase Agreement (PPA) with Madhya Pradesh Electricity Board for the sale of entire net electricity output, on 26th July 1999. However, section 3.3 of the PPA allows net electricity sale to either third party/ies (which are HT consumer of the board), on payment of wheeling charges or to the electricity board. Thus, PP signed short term PPAs for the sale of power with Nicholas Piramal India Ltd. & IPCA Laboratories on 29th April 2006 and 4th August 2006 respectively, both the parties are HT consumers of the Board.

Brief description of the installed technology and equipments:

A forebay is provided near the seal pit by constructing side walls to the top of the seal pit to have a constant head for the generating units. The turbines are so placed that a head of at least 8.1 meters is available. The water intake and power house are connected to the Forebay, with a by-pass structure involving a spillway that allows the release of water to the return canal in the event that the small hydropower plant is shut down for any reason. Water from the Forebay is led through Intake gates to 2 units of horizontal Kaplan turbines having capacities of 1.179 MW each installed at adjacent power house building. This water rotates the Kaplan turbines, which in turn rotates the synchronous generator coupled to the turbines and generates the electricity. The Kaplan turbines are horizontal type with adjustable guide vanes and runner blades and tubular casing. The turbine runner blades are made of cast stainless steel since the water is drawn from the upper surface of the reservoir and is less erosive than canal or river water. The runner blades are fixed on a cast steel runner hub, which is rigidly fixed to the turbine shaft. The turbine shaft is forged carbon steel adequately designed to sustain the weight and withstand the run-away speed at its coupling with the runner hub. The guide vanes are of steel casting with integral body and stem. The guide vane profile shall be ground smooth so that leakage through it is negligible when fully closed. The casting of the draft tube is “S” type tubular, fabricated from steel plates.

Emission reductions achieved in the Ist monitoring period of IInd Crediting Period:

The duration of the current monitoring period considered under this monitoring report is 15/06/2015 to 31/05/2016 (inclusive of both the dates). The emission reduction achieved under this monitoring period is 11,397 tCO2e.

A.2. Location of project activity

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Project activity is located in Khasra numbers 409, 410/1, 415/2 and 414/2 of the Mangthar village, Pali Taluk, Umaria District, Madhya Pradesh. The latitude and longitude coordinates of the plant are 23.36º and 81.03º respectively. The plant is about 8 kilometres from Birsinghpur railway

station, which is on Bhopal –Bilaspur railway route. The district headquarters is at Umaria, which is about 40 kilometers from the plant.

The location of project activity is shown in following figures – Fig 1:

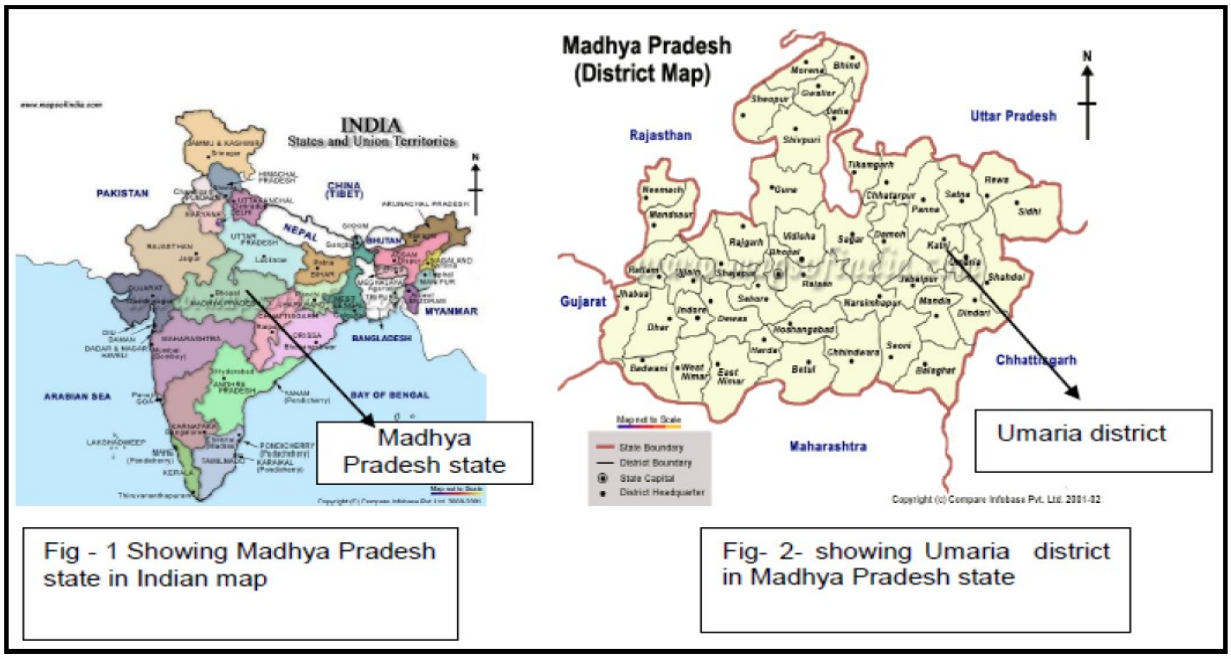
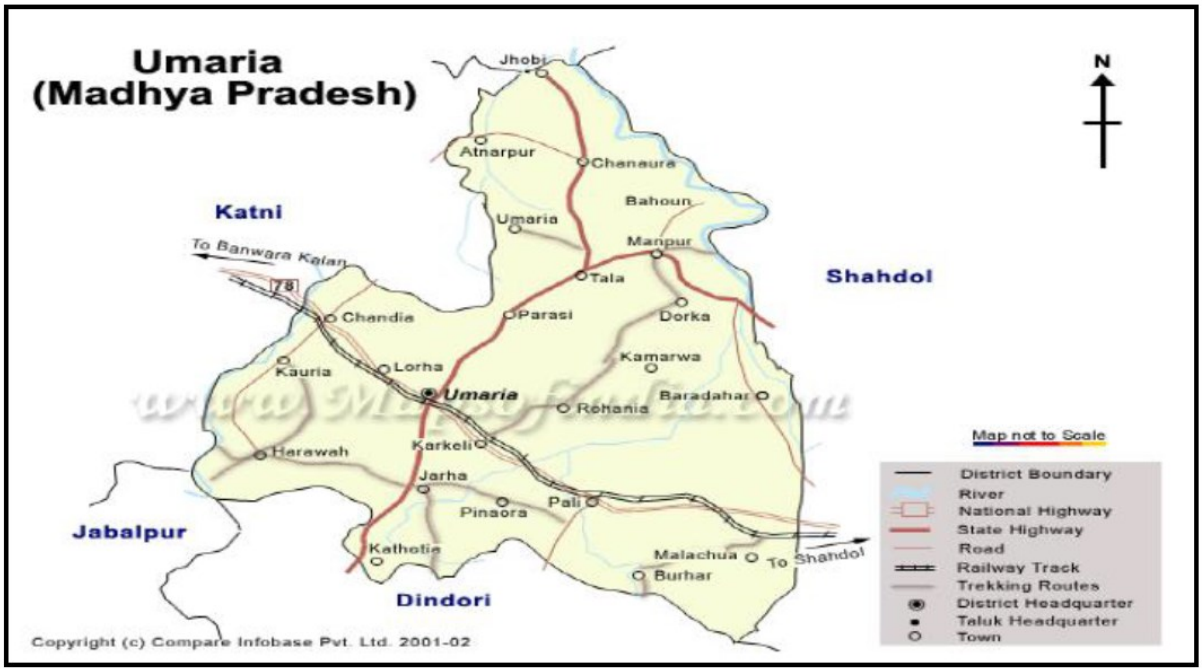


Fig - 1 Showing Madhya Pradesh state in Indian map

Fig- 2- showing Umaria district in Madhya Pradesh state



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)
India (host)	Ascent Hydro Projects Ltd (AHPL) (Private Entity)	No

A.4. Reference of applied methodology and standardized baseline

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Title of approved baseline and monitoring methodology:
Renewable electricity generation for a grid in accordance with approved small scale methodology AMS I.D.

Type I : Renewable energy project
Sectoral Scope : 01, Energy Industries
Category I.D : Grid connected renewable electricity generation,
Valid from: 28/11/2014, Version: 18[3]

Tools referenced in this methodology:

- ✓ Tool to calculate project or leakage CO2 emissions from fossil fuel combustion – Ver 02
- ✓ Tool to calculate the emission factor for an electricity system – Ver 04.0.0
- ✓ Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period. – ver 03.0.1

Standardized baseline: Not applicable.

A.5. Crediting period of project activity

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Crediting Period : Renewable crediting period (3*7 years).

Start date of the 1st Crediting Period : 25/11/2007
Duration of the 1st Crediting Period : 25/11/2007 – 24/11/2014

Start date of the 2nd Crediting Period : 15/06/2015
Duration of the 2nd Crediting Period : 15/06/2015 – 24/11/2021

Duration of the Current Monitoring Period : 15/06/2015 – 31/05/2016 (under the 2nd crediting period)

A.6. Contact information of responsible persons/entities

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Ascent Hydro Projects Ltd (AHPL)
Mumbai (India)

(Contact details are provided in Appendix 1)

[3] https://cdm.unfccc.int/filestorage/2/P/7/2P7FS6ZQAR84LG3NMKYUH50WI9ODBC/EB81_repan24_AMS-I.D_ver18.pdf?t=VTJ8bzhpOWZzfDCQG9fGNDZsEbbPY4rTzbxn

SECTION B. Implementation of project activity

B.1. Description of implemented registered project activity

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The Unit 1 of the project activity has started commercial operation from 24/10/2006 whereas the Unit II of the project activity has started commercial operation from 06/02/2007. The plant has synchronized with the grid in July 2006. The length of the crediting period for this project activity is 7 years (Renewable Crediting period).

A schematic diagram of the Project Activity has been provided in Annex 1. No adverse situation has arisen during the monitoring period of the project which may eventually impact the applicability of the methodology and affect the additionality of the project activity.

The hydrology of the Mini Hydel project is based on the quantity of water through the cooling condensers of the steam generating units being discharged into the return canal of SGTPS through the seal pit and the head available at the seal pit. The warmed circulating water is not discharged at atmospheric pressure to avoid vapour formation within the thermal unit's condenser. A water seal is achieved by providing a concrete chamber (Seal Pit) at each pipe outlet to maintain the desired minimum pressure head of 2.5m water column (WC). The energy of the falling water is dissipated before it enters the return canal.

The main components of projects are:
A. Seal Pit
B. Forebay & By pass structure- Spillway
C. Water Intake structure
D. Power house
E. Return Canal to river

The details of equipments installed (turbine & generator) are as follows:

Salient features of turbine:

Type	**Full horizontal Kaplan**
Number	2
Rated output @ rated head of 8.1 m @ rated discharge of 16.5 m^3/s @ best efficiency i.e 92.3%	1208 kW
Rated output @ rated head of 8.1 m @ rated discharge of 16.075 m^3/s @best efficiency i.e 92.3%	1179 kW
Rated head	8.1 m
Minimum operating head	8.10 m
Maximum operating head[4]	8.92 m
Rated discharge for each unit	16.52 m^3/sec
Minimum discharge	7.99 m3/sec
Maximum discharge	16.50 m3/sec

[4] In order to avoid flooding, the plant is designed in a manner that safety gates open when head of 8.1 m is reached. Thus, maximum head that can be achieved is 8.1 m.

Runner diameter	1860mm
Specific Speed	665.88RPM
Rated Speed	265RPM
Turbine Setting	(-) 0.46 m
Make	Boving Fouress Limited
Minimum discharge	7.99 m3/sec
Maximum discharge	16.50 m3/sec

Specification of generators at Birsingpur

Type	Synchronous
Number	2
Rated Output	1.5 MVA, 3 phase, 50 Hz i.e 1.2 MW or 1200 kW
Net Output[5] (termed as plant Output)	1102KW
Voltage	3.3 kV
Power Factor	0.8 (lag)
Insulation	Class F
Excitation system	Brush-less
Make	Crompton Greaves Limited

Specification of Transformer

Transformer capacity	3.3/33 kV, 2.25 MVA Ynd11, 3 phase, ONAN
Connection on 3.3kV side	6.6 kV grade 185 square mm single core XLPE cable
Connection on 33 kV side	33 kV bus bar
Connection point	Plant switchyard
Protection System	50/51 (GT) over current and E/F relays and Buchholz relay, WTI, OT
Control & monitoring	Computer based c/w interface for remote operation
Circuit Breakers	SF6

Protection arrangements

- 64 G –restricted E/F relay
- 50 (ABC) over current relay
- 59 –over voltage relay
- 40G-loss of excitation relay
- Temperature monitoring system
- Speed monitoring system
- Master trip relay

[5] This is the electrical power at generator terminals when turbine output is 1179 kW and applying 98% efficiency of gear box & 95.4% generator efficiency, as per the contract agreement.

B.2. Post-registration changes

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

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Not Applicable.

B.2.2. Corrections

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Not Applicable.

B.2.3. Changes to start date of crediting period

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Not Applicable.

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

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Not Applicable.

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

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Not Applicable.

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

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Not Applicable.

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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Metering system

As per the PPA, the electricity generated is to be evacuated at the 33kV Grid sub-station. However, as per the provisional permission granted by MPEB, the electricity generated is currently evacuated at interconnection point of MPPKVVCL‟s existing 33 kV line which delivers the electricity to the substation. The metering system in current scenario[6] is described below:

Current Scenario:

The electricity is generated at 3.3 kV which is stepped up to 33 kV and further the electricity is supplied to the grid through two bays i.e bay 1 and bay 2. For measuring the net energy supplied to the grid, one main meter and one check meter is connected at interconnection point at each bay.

Monthly Joint Visual Meter Reading (JMR) of main and check meters are recorded and signed by authorised officials of AHPL and MPPKVVCL once in a month. The JMR indicates readings recorded at meters connected to each bay and further JMR also indicates the calculated total net electricity supplied to the grid by the project plant.

The total net electricity exported to the grid, as per the JMR, will form the basis of emission reduction calculation.

Also, the main and check meters are capable of recording daily readings which is retrieved by AHPL staff in the presence of MPPKVVCL on the monthly basis and archived in electronic form. The readings will be used in case of apportioning of data when the JMR dates are not coinciding with the verification date.

Billing and Cross-checking:

The electricity generated from the project activity is sold to third parties through a wheeling arrangement with the MPPKVVCL. Further the Project Participant has retained the option of selling the electricity generated from the project activity to the MPSEB. The billing and cross-checking in either case is as below:

<u>Sale to third party:</u>

Based on the total net electricity supplied to the grid indicated in JMR, “statement of net energy delivered in the grid system‟ is raised by MPPKVVCL which indicates the value of net electricity delivered in the grid system. The value of net energy delivered in the grid system is calculated as total net electricity supplied to the grid minus wheeling charges. Accordingly, the electricity is distributed to the third party. The same is indicated in the monthly electricity bill issued by the concerned grid authority. Based on the electricity bill, AHPL raises an invoice to the third party subsequent to which third party releases the payment. The bank statement will form the basis of crosscheck of receipt of payment. There will be difference between total net electricity supplied to the grid indicated in the JMR and electricity consumption against which the payment is released due to deduction of wheeling charges.

[6] Project has been permitted to retain the existing Metering arrangement (as per the approval received from the competent authority, ED-MPPTCL-Jabalpur). As such PP will not require to shift their Billing Meters (check and main) from the existing position. Hence existing scenario remains valid.

Sale to Madhya Pradesh Electricity Board (MPEB):
Based on the total net electricity supplied to the grid indicated in JMR, AHPL will raise an invoice to MPPKVVCL, subsequent to which payment will be released. The bank statement will form the basis of crosscheck of receipt of payment.

Testing/ Calibration:
The main and check meters are tested for accuracy once in a year by the representative appointed by MPPKVVCL or third party authorised by the grid authority.

The meters are jointly inspected, tested and sealed and are not be interfered with, by either AHPL or MPPKVVCL, except in presence of the other party.

Differentiation between testing and calibration
All the meters are tested for accuracy once in a year by the representative appointed by MPPKVVCL or third party authorised by the grid authority at the site itself. The portable calibrated standard meters are used for the purpose of testing whether the meters are within the permissible limits. Calibration is conducted by the MPPKVVCL only if during the testing the meter is found to be exceeding the permissible limit of error. The meter exceeding the permissible limit is removed from the site and replaced with the calibrated meter. The removed meter is then taken to the laboratory for calibration.

Procedure for handling data uncertainty:
The main and check meters would be tested once in every year and sealed by the MPPKVVCL in presence of PP. Both main and check meters have separate set of CT/PT units to avoid chances of both going out of order simultaneously.

a) If during yearly testing, main meter is found to be beyond permissible limits of error, the error identified would be applied to all the measured data recorded on the main meter and used for the purpose of billing, from the date of previous testing/calibration. The MPPKVVCL will be informed for further action.
In case the check meter readings have been used for few of the months for the purpose of billing, the error would not be applied to those months as long as check meter readings are within the permissible limit of error.

b) If during yearly testing, the check meter is found to be beyond permissible limits of error, the identified error would be applied all the measure data recorded, only if the check meter readings have been used for the purpose billing during the period from previous testing/calibration. However, the MPPKVVCL authority will be informed for their action.

c) If during yearly testing, the main meter and check meter are both found to be beyond permissible limits of error, the identified error would be applied to all the measured data, from the previous date of testing/calibration, and corrected values would be used for the purpose of emission reduction calculation.

d) If both, main and check meters fails to display or record the reading which is very unlikely, the MPPKVVCL authority will be informed for their further immediate action. The emission reduction will be based on the JMR raised during that month.

Procedure for data apportioning: In the event when verification period dates and billing cycle dates in the project activity, do not coincide:

In the event when the verification period dates and billing cycle dates (JMR dates) do not coincide, daily export and import reading from main and check meter would form the source of emission reduction calculation for that period. The daily export and import readings are retrieved from the main and check meter on the monthly basis in the presence of representative of MPPKVVCL. The method of calculation is as explained below:

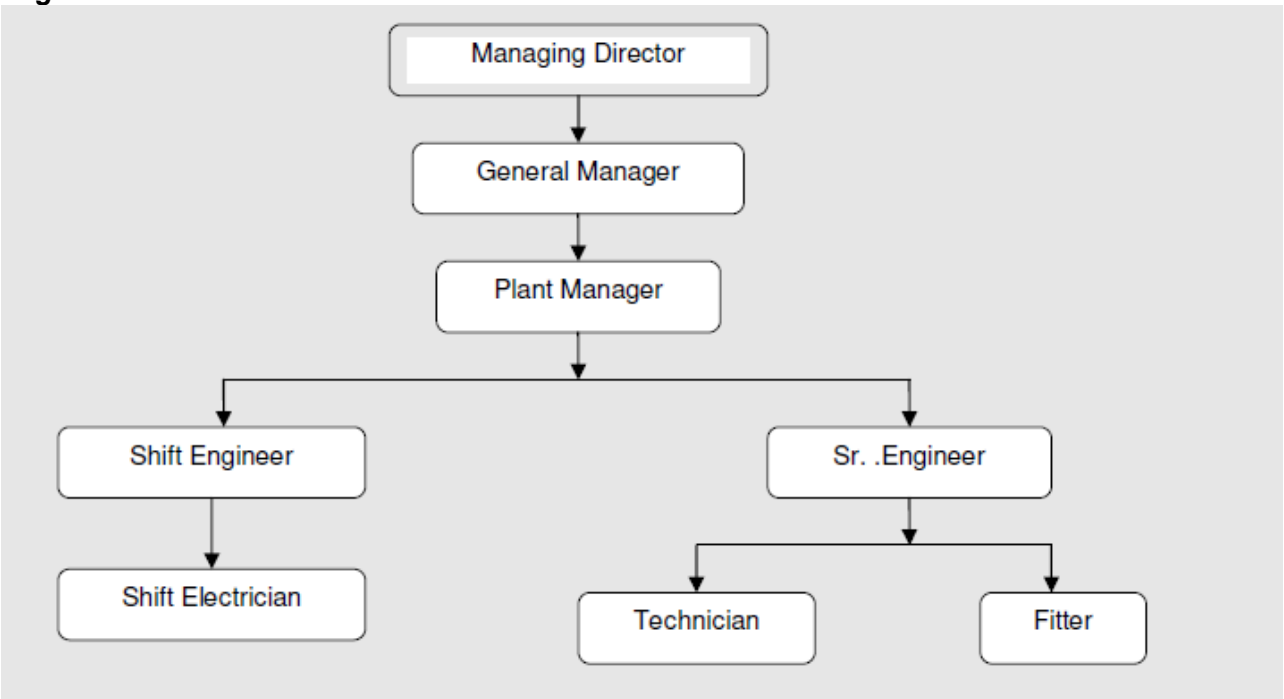
For example, if the JMR date is 30th of a month whereas the crediting period starts on 25th of that month. The net energy supplied to the grid will be calculated as below:

Export reading on 30th	X
Export reading on 25th	Y
Total export between 25th to 30th	Z = X –Y
Import reading on 30th	A
Import reading on 25th	B
Total import between 25th to 30th	C =A – B
Net electricity supplied between 25th to 30th	E= Z – C

All the monitored data will be archived for at least two years after end of the crediting period. The monitoring period starts from 15th June 2015 whereas billing cycle starts from 31st to 31st of every month. Thus, procedure for data apportioning as explained above is adopted for the first date of the current monitoring period. Detailed calculation has been provided in ER excel sheet.

Interruption:
Numbers of interruptions hours (tripping / shutdowns) in generation during the shifts have been recorded in the log books at the plant. The detail of the number of interruptions hours is given in below Table.

Organization structure:



Managing Director of AHPL is based in head office in Pune and makes a periodical visit to the Birsinghpur plant. The Plant Manager is in charge of day to day operations of the plant. Shift engineers, assisted by a fitter and a technician would be responsible for onsite maintenance of the equipment, preventive maintenance etc. The technicians will record the readings from main and check meters daily and these readings will be counter checked by the Plant Manager. Daily records at the storage tanks are maintained in the log book to derive the quantity of diesel consumed. Daily reports are sent to head office electronically and Monthly reports are generated and maintained at the plant and head office. Plant managers would maintain records of joint meter reading and also the calibration testing records of the energy meter.

SECTION D. Data and parameters

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

Data/parameter:	EF
Unit	tCO_2/MWh
Description	Combined Margin-Western Grid
Source of data	CO2 baseline database for the Indian Power Sector, version 1.1, 21 Dec 2006 – Central Electricity Authority (CEA), Ministry of Power
Value(s) applied)	0.89
Choice of data or measurement methods and procedures	CEA has estimated the the baseline emission factor for the Western Grid based on ACM0002.
Purpose of data	Calculation of baseline emission.
Additional comments	The emission factor has been fixed for the first crediting period.

D.2. Data and parameters monitored

Data/parameter:	$EG_{PJ,y}$
Unit	MWh
Description	Quantity of net electricity supplied to the grid in year y
Measured/calculated/default	Measured
Source of data	Monthly Joint Visual Meter Reading
Value(s) of monitored parameter	11751.2

Monitoring equipment	Type of monitoring equipment: Electronic tri-vector meter Accuracy class: 0.2% Bay 1 Main Meter Serial number : KRB00926 Check Meter Serial number : KRB00925 Dates of last calibration : 16/09/2014 Date of current calibrations : 31/08/2015 Validity : 30/08/2016 Calibration frequency : Annual Location : Switch Yard Bay 2 Main Meter Serial number : KRB00928 Check Meter Serial number : KRB00927 Dates of last calibration : 16/09/2014 Date of current calibrations : 31/08/2015 Validity : 30/08/2016 Calibration frequency : Annual Location : Switch Yard
Measuring/reading/recording frequency:	Continuous monitoring, hourly measurement and at least monthly recording
Calculation method (if applicable):	Not applicable.
QA/QC procedures:	Main and check meters are tested once in a year by the representative appointed by MPPKVVCL or third party authorised by the grid authority. The data will be cross checked with the invoice and bank statement.
Purpose of data:	Calculation of Baseline Emission
Additional comments:	The data would be archived upto two years after the end of crediting period.

Data / Parameter	NCV_{diesel}
Unit	GJ/Ton
Description	Net calorific value of diesel used on standby DG set
Measured/calculated/default	Default
Source of data	CO_2 baseline database for the Indian Power Sector, version 7, January 2012 – Central Electricity Authority (CEA), Ministry of Power (http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)
Value(s) of monitored parameter	41.76
Monitoring equipment	NA
Measuring/reading/recording frequency:	Once in a Year
Calculation method (if applicable):	CO_2 baseline database gives Gross Calorific Value (GCV) which is converted to NCV by deducting 5% on account of latent heat of vaporisation of water, as per IPCC guidelines 2006.
QA/QC procedures	Calorific value will be sourced from the central electricity database once in a year
Purpose of data	Calculation of project emission
Additional comment	--

Data / Parameter	EF_{CO2_diesel}
Unit	tCO_2e / GJ
Description	CO_2 emission factor of diesel
Measured/calculated/default	Default
Source of data	CO_2 baseline database for the Indian Power Sector, version 7, January 2012 0020– Central Electricity Authority (CEA), Ministry of Power (http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm)
Value(s) of monitored parameter	0.0726
Monitoring equipment	NA
Measuring/reading/recording frequency:	Once in a year
Calculation method (if applicable):	NA
QA/QC procedures	Emission factor will be sourced from the database once in a year.
Purpose of data	Calculation of project emission
Additional comment	The emission factor in CO2 baseline database by CEA is sourced from IPCC guidelines 2006.

Data / Parameter	DC_y
Unit	Litres
Description	Diesel consumption by the standby DG set
Measured/calculated/default	Measured
Source of data	Log Book
Value(s) of monitored parameter	0
Monitoring equipment	NA
Measuring/reading/recording frequency:	Daily Recording
Calculation method (if applicable):	1) The diesel quantity available in diesel storage tank is measured using a scale and recorded on daily basis in log book by AHPL. 2) The diesel consumption would be recorded in the logbook in liters. The values will be converted to tons using a factor 0.86 kg/liters (density of diesel), IPCC 2006 default values, for the purpose of calculation. 3) The diesel will be consumed only in the rare situation only when the power plant is not operational. 4) This value is used for project emission calculation.
QA/QC procedures	The measured data will be cross checked with diesel procurement.
Purpose of data	Calculation of project emission
Additional comment	Project emissions due to diesel consumption will be calculated as below: $PE_{DC,y} = \_DC_y \times NCV_{diesel} \times EF_{CO2\_diesel}$ The data would be archived upto two years after the end of crediting period.

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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The procedures and formulas used for estimation of the baseline emission factor and the assumptions made have been detailed below.

The emission reduction of the small scale project activity is the net electricity exported to the grid ($EG_{BL,y}$) in MWh multiplied by the baseline emission factor in tCO_{2e}/MWh.

The combined margin emission factor has been derived from the simple operating margin and build margin emission factors after considering/ factoring the weights of 0.25 and 0.75 for operating margin (OM) and build margin (BM) emission factors respectively relevant to the hydro power generation project activities as per the „Tool to calculate the emission factor for an electricity system (Version 04)

Combined Margin (CM) in tCO_2/MWh for NEWNE regional grid is
$EF_{CO2,grid,y}$ = 0.25 x Average of OM for last 3 years + 0.75 x BM = 0.25 x 0.9776 + 0.75 x 0.9673 = 0.9699

Hence combined margin emission factor for the NEWNE grid (EFCO2,grid, y) is 0.9699 tCO2/MWh.

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

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Diesel consumption

The project also involved consumption of minor quantity of Diesel in standby DG Set.
The formula used to calculate the project emissions due to diesel consumption is provided below:

PE_{Diesel} = $\sum DC_y$ x $Density_{Diesel}$ x NCV_{Diesel} x $EF_{CO2Diesel}$

Where,

PE_{Diesel} = Project Emission due to use of Diesel consumed during this monitoring period in DG set
DCy = Diesel Consumption in Liters (L)
$Density_{Diesel}$ = Density of Diesel (.86Kg/Lit)
NCV_{Diesel} = Net Calorific Value of Diesel
$EF_{CO2Diesel}$ = IPCC 2006 Emission factor for Diesel

PE_{Diesel} = 0 L x (0.86 X 10^-3) tonne/L x 41.76 GJ/tonne x 0.0726 tCO_2e /GJ
= 0 tCO_2e
= 0 tCO_2e (rounded up value has been considered)

E.3. Calculation of leakage

>> Not Applicable.

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_2e)	Project emissions or actual net GHG removals by sinks (t CO_2e)	Leakage (t CO_2e)	GHG emission reductions or net GHG removals by sinks (t CO_2e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
Total	11,397	0	0	0	11,397	11,397

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_2e)	13,747	11,397

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

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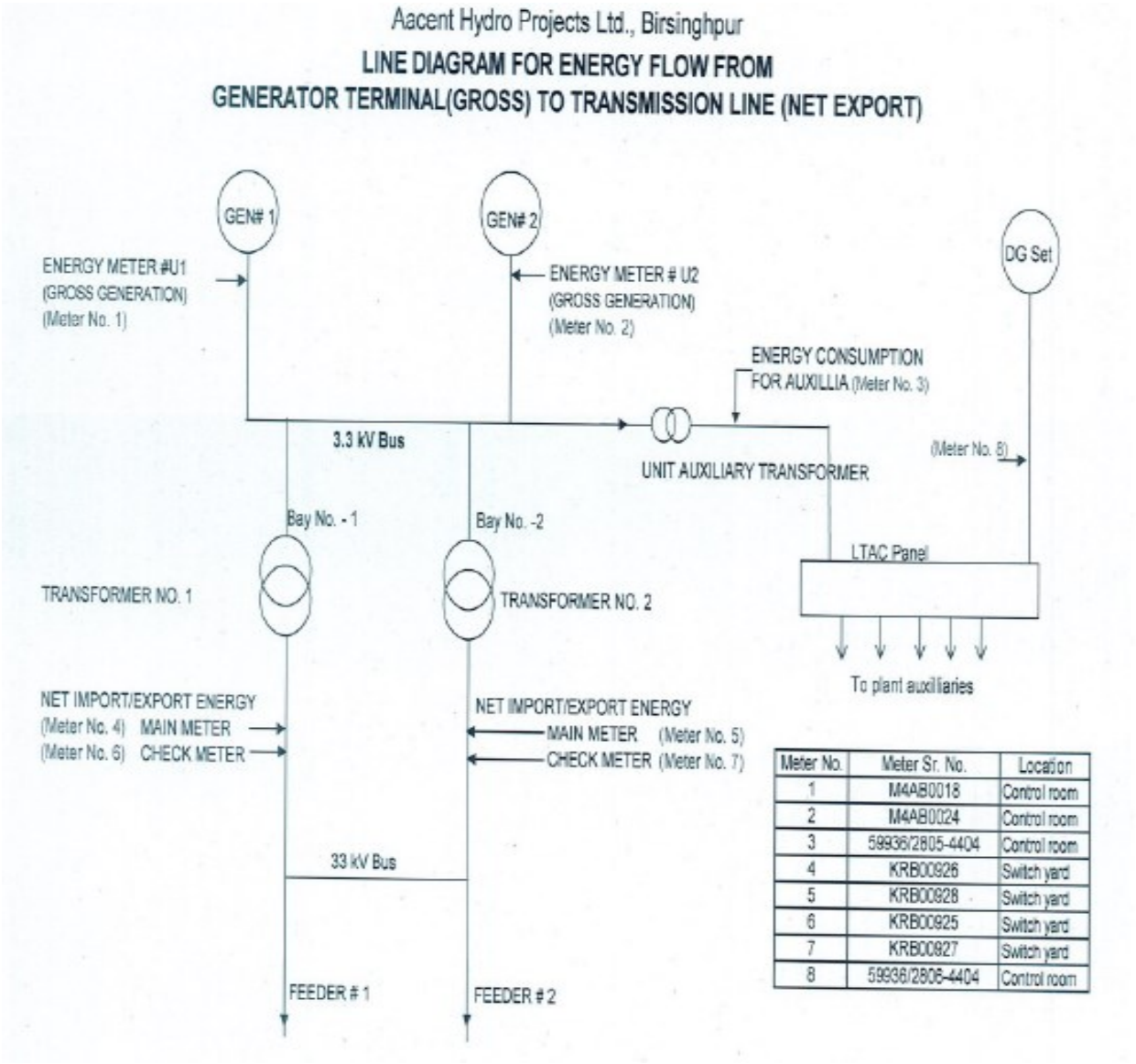
There is no increase in the emission reductions during the current monitoring period relative to the estimation in the registered CDM-PDD. There is only around 17.10% lesser emission reduction relative to estimation in the registered CDM- PDD for the equivalent duration of the monitoring period.

Appendix 1. Contact information of project participants and responsible persons/entities

Project participant and/or responsible person/ entity	☒ Project participant ☒ Person/entity responsible for completing the CDM-MR-FORM
Organization name	Ascent Hydro Projects Limited
Street/P.O. Box	Tejpal Scheme Road 5, Vile Parle
Building	6, Shiv Vastu,
City	Mumbai
State/region	Maharashtra
Postcode	400 057
Country	India
Telephone	+91 Ph: 022 26826819
Fax	+91 20 25885234
E-mail	ascentpune@dlz.com
Website	
Contact person	
Title	Managing Director
Salutation	Mr.
Last name	Vaidya
Middle name	
First name	Shyam
Department	
Mobile	+91 94223 20270
Direct fax	
Direct tel.	
Personal e-mail	ascentpune@dlzcorp.com

Annex-1



Meter No.	Meter Sr. No.	Location
1	M4AB0018	Control room
2	M4AB0024	Control room
3	59936/2805-4404	Control room
4	KRB00926	Switch yard
5	KRB00928	Switch yard
6	KRB00925	Switch yard
7	KRB00927	Switch yard
8	59936/2806-4404	Control room

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Document information

Version	*Date*	*Description*
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: • 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: • 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 *F-CDM-MR* to *CDM-MR-FORM*; • 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.

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Business Function: Issuance
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