



**Monitoring report form for CDM project activity**  
**(Version 07.0)**

*Complete this form in accordance with the instructions attached at the end of this form.*

**MONITORING REPORT**

<b>Title of the project activity</b>	4.80 MW renewable energy project by Aleo Manali Hydropower Pvt. Ltd.	
<b>UNFCCC reference number of the project activity</b>	9212	
<b>Version number of the PDD applicable to this monitoring report</b>	5.0	
<b>Version number of this monitoring report</b>	01	
<b>Completion date of this monitoring report</b>	22/07/2019	
<b>Monitoring period number</b>	01	
<b>Duration of this monitoring period</b>	31/01/2014 <sup>1</sup> -30/06/2019	
<b>Monitoring report number for this monitoring period</b>	01	
<b>Project participants</b>	Aleo Manali Hydropower Pvt. Ltd.	
<b>Host Party</b>	India	
<b>Applied methodologies and standardized baselines</b>	Applied Methodology: AMS I.D-Grid connected renewable electricity generation, Version-17 Standardized Baseline: NA	
<b>Sectoral scopes</b>	01	
<b>Amount of GHG emission reductions or net anthropogenic GHG removals achieved by the project activity in this monitoring period</b>	Amount achieved before 1 January 2013	Amount achieved from 1 January 2013
	0 tCO <sub>2</sub> e	83701 tCO <sub>2</sub> e
<b>Amount of GHG emission reductions or net anthropogenic GHG removals estimated ex ante for this monitoring period in the PDD</b>	83915 <sup>2</sup> tCO <sub>2</sub> e	

<sup>1</sup> The crediting period starts from 31/01/2014, however as project was commissioned later i.e. 26/09/2014, hence for CER calculation the generation prior to commissioning is taken as zero.

<sup>2</sup> The ex-ante estimation is considered from date of commissioning i.e. 26/09/2014 for fair comparison.

## SECTION A. Description of project activity

### A.1. General description of project activity

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The purpose of the 4.8 MW project activity (Aleo II) is to generate electricity from hydro power, and sell the electricity generated to the state grid of Himachal Pradesh through a Power Purchase Agreement (PPA) with HPSEB. The Project has led to reduced greenhouse gas emissions because it displaces electricity from fossil fuel based electricity generation plants. In the absence of the CDM project activity, the equivalent amount of electricity would have been generated from the connected / new power plants in the NEWNE grid leading to GHG emission as grid is dominated by fossil fuel based power plants.

The ALEO II Hydro Electric Project (4.8 MW) is a Run-of-River Scheme from tail race water release of Allain Duhangan Hydro Electric Project (ADHEP) on Allain Nala near Manali town in Kullu District of Himachal Pradesh and is located on the right bank of Allain Nala with the install capacity of 4.8 MW. The generated power is fed into 33/11 KV Sub-Station of HPSEB at Prini, Manali which is within 1.2 Km from power station of Aleo – II HEP. The catchment is primarily snow, rain and spring fed. The project activity intakes water from the tail race of the 192 MW AD hydro project situated upstream. The project has employed 2x2400 kW Francis turbine, the water from Forebay is carried to the Francis turbines through steel penstock.

The construction of the project activity started on 17/10/2011 and commissioned on 26/09/2014. The project activity is operational with normal operation and maintenance during current monitoring period i.e. 31/01/2014 to 30/06/2019.

The project activity has supplied 99632.55MWh electricity to grid during current monitoring period, which has resulted emission reduction of **83701** tCO<sub>2</sub>e

### A.2. Location of project activity

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The project area is located in lesser Himalayans with maximum altitude in the range of 1900m and falls in the state of Himachal Pradesh, district Kullu and is 260 Km from the state's capital Shimla and 41 Km from district headquarter Kullu. The proposed project is well connected with motor able roads from Shimla and other major cities of Himachal Pradesh. There is negligible habitation as of now.

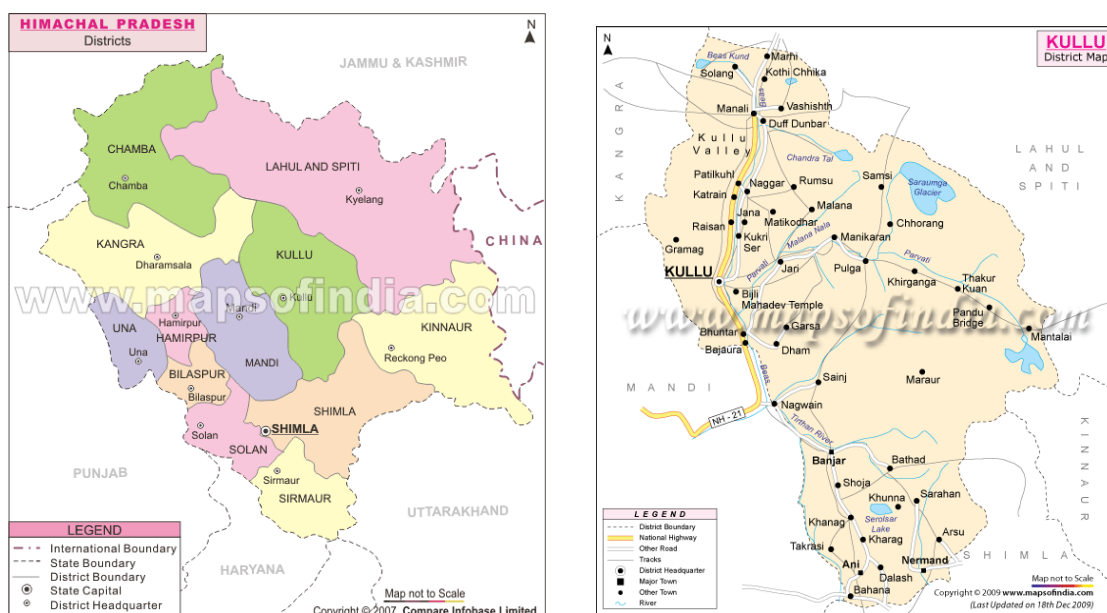


Fig: Project Site

Physical Address: Village-Aleo, Tehsil-Manali, District: Kullu, State: Himachal Pradesh, Country: India

Geo-coordinates:

Geographical location of Aleo II Hydro Plant:

Power House:

Latitude: North 32°13'00" Longitude: East 77°11'00"

Weir Site: North 32°13'00" Longitude: East 77°12'00"

### A.3. Parties and project participants

Parties involved	Project participants	Indicate if the Party involved wishes to be considered as project participant (Yes/No)
India	Private entity- Aleo Manali Hydropower Pvt. Ltd.	No

### A.4. References to applied methodologies and standardized baselines

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**Title:** Grid connected renewable electricity generation,

**Reference:** AMS-I.D. version 17, EB61

**Tool:** Tool to calculate the emission factor for an electricity system" (Ver. 2.2.1)

General guidance to SSC CDM methodologies" (Ver 19.0)

### A.5. Crediting period type and duration

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The project activity has sought a 7-year renewable crediting period starting from 31/01/2014 to 30/01/2021.

## SECTION B. Implementation of project activity

### B.1. Description of implemented project activity

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The project activity is implemented and operated as per registered PDD, there were no incident which affects the applicability of applied baseline and monitoring methodology. The project activity is a 4.8 MW Run of the River hydroelectric project, which utilizes hydro potential to generate GHG emission-free electricity and exports it to the regional grid. The project synchronized with grid on 26/09/2014 and since then the project is operational.

The diversion weir is constructed at an elevation of 1860 m, in Allain stream to divert approximately 15.8 m<sup>3</sup>/s of water to the water conductor, which is then taken to the powerhouse where 2 Nos. of horizontal Francis turbine totalling to 4800 kW rated capacity at 40 m net head & design discharge of 15.8 m<sup>3</sup>/s are installed to convert potential energy (available due to head) into kinetic energy through hydro turbines.

Horizontal shaft synchronous brushless generators are capable of generating electricity at voltage of 3.3 kV which is then stepped up to 6.6 kV using 2 Nos. main transformers installed at the switchyard. The electricity generated at 33 kV is being transported through 1.2 km, overhead line to fed electricity at HPSEB sub-station at Prini, Manali.

The turbines have been designed to generate 10% higher output for optimum generation during the monsoon season. Each horizontal Francis turbines are coupled with horizontal shaft

synchronous brushless generators of 2400 kW rated capacity with 15% overload capacity to convert kinetic energy into electrical energy.

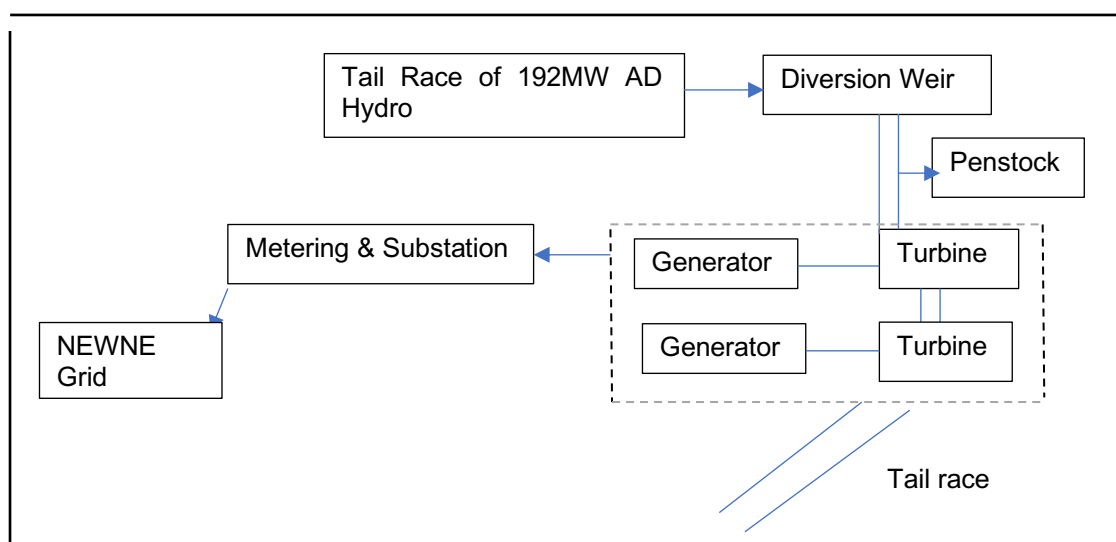
#### Technical Specification of Turbine

Rated Net Head	15.8 m
Design Flow	40 m <sup>3</sup> /s
Rated Power	2400 kW
Turbine Type	Horizontal Francis
Number of Turbine	2

#### Technical Specification of Generator

Capacity	2x2400 kW
Voltage Output	6600 V
Frequency	50Hz
Configuration	Horizontal
Type	Synchronous SESR, Brushless

The diagram of detail description of the technology of the project is shown in Fig below



There was no event or situation occurred during current monitoring period that may have had impact the applicability of the baseline and monitoring methodology. There were no hindrance in the operation of the project during the current monitoring period but there were some minor overhaul times and downtimes of the equipment. The project activity was operation with normal operation and maintenance during current monitoring period i.e. 31/01/2014 to 30/06/2019.

There were no shut down during current monitoring period, as the project input is dependent on tail race of AD hydro and they operate in shifts so PP get sufficient time for operation and maintenance.

## B.2. Post-registration changes

### B.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

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There was no deviation from registered monitoring plan and or applied methodology during current monitoring period.

### B.2.2. Corrections

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There were no corrections from registered PDD during current monitoring period.

### **B.2.3. Changes to the start date of the crediting period**

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The start date of crediting period is changed from 01/02/2013 to 31/01/2014.

### **B.2.4. Inclusion of monitoring plan**

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Not applicable

### **B.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents**

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There were no changes from registered monitoring plan, applied methodology during current monitoring period.

### **B.2.6. Changes to project design**

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No change in project design during current monitoring period.

### **B.2.7. Changes specific to afforestation or reforestation project activity**

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Not applicable

## **SECTION C. Description of monitoring system**

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The generated electricity from the project is evacuated at the state electricity utility (HPSEB) for the complete project lifespan. Thus throughout the project cycle (crediting period) the electricity generated from the project will be monitored by both the project proponent and a third party, namely the HPSEB.

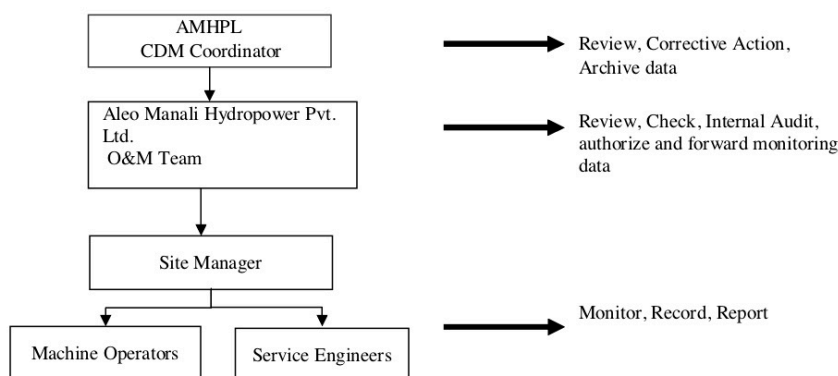
The generated electricity, before entering into the grid, at the grid interconnection point is measured by digital sealed kilowatt hour (kWh) meters on a monthly basis and is documented in paper format. The generation records used to be signed by the officials from project proponent and third party (HPSEB). This Joint Meter Reading report contains detail of import and export by the project activity to the NEWNE grid. This JMR forms the basis of payment by HPSEB to the project proponent. Such records will be maintained and would be made available on demand till the last issuance plus a period of 2 years. There is also a check meter installed as a backup of the main meter.

### **Authority and Responsibility for project management**

The proponent has appointed a well-defined hierarchy of personnel for the overall management of the project. At each level the appointed persons report to the authority above them. There is a dedicated team of 15 people stationed at the site for the operation and maintenance of the plant. 3 people work in a shift of 8 hours each. Any technical problem is rectified by the stationed staff and if needed, the supplier is contacted in case of extreme events.

The project office in Manali is responsible for the overall project management. The project proponent maintains the JMR and raise invoices to HPSEB for the electricity generated. The project office also archives the JMRs and invoices for crediting + 2 years.

The operation and maintenance structure is as follows-



## Other monitoring measures and practices

### Documentation

Documentation and archiving is carried out systematically and regularly. The following records are being maintained after regular measurements and strict monitoring of the parameters. The records are verified by the project In-charge and maintained at both the on-site office and corporate head

1. Monthly Outage statement
2. Daily power generation attested at the end of each month.
3. Maintenance work carried out each month
4. Gauge readings taken diurnally.
5. Load versus discharge readings
6. Hourly log book readings for generator temp, oil level and pressure in power pack & transformer, etc.

### Data Archiving:

The data will be archived electronically and on paper format for a period of 2 years after the last issuance.

### Project performance reviews

The project In-Charge carries out performance reviews of the plant, its upkeep and maintenance on a monthly basis. In addition, the MD (head of the company) also visits the plant regularly to survey and observe the plant performance. All corrective actions are carried out under the guidance of the In-Charge and the higher management committee is continually apprised of the actions and outcomes, by mails or telephonically.

### Addressing Corrective actions

This section is relevant if any additional or unplanned investments have been made during the project construction that reflects upon the continuous improvement procedures observed by the company.

### Emergency Preparedness

Being a small hydro plant of only 4.8 MW capacity, intensive emergency preparation is not needed, however, the following may be highlighted:

- a. There are no critical loads that may require emergency power supply in case of total outage.
- b. A fire extinguisher has been installed in case of small fires
- c. Information regarding any safety earthing systems in place

For measuring the energy exported, a check meter will also be installed with the main meter. In case the main meter is found to be faulty, reading from the check meter shall be considered for that period of time.

### Training

Adequate training shall be imparted to the employees for successful operations of the SHP. As the staff to be stationed at the site shall be experienced and many of them professional engineers, a comprehensive training is not required. Further, the staff from the equipment supplier is always reachable to rectify any major issues in operation of the plant.

### Leakage

The project activity does not involve any leakage within the project boundary because no alternate fuel (Fossil fuel or any other GHG emitting fuel) can be used to run the turbines and generate electricity.

### Procedures for handling data uncertainty:

a- In case main meter is faulty- Check meter is used to calculate the electricity exported to the grid. Main meter is immediately replaced by a new meter and meter reading from the replaced meter is used thereafter.

b- In case the check meter is faulty- The check meter is immediately replaced. The emission reduction calculation would not be affected as reading from main meter is used to calculate the net electricity exported to the grid.

c- In case error is identified during bi-annual accuracy testing- If during the annual tests, the meter is found to be beyond the permissible limits of error, the meter shall be immediately calibrated and replaced, if necessary. The error that is identified in the bi-annual accuracy testing would be applied to all the readings of electricity exported as indicated in the JMR from the date of last accuracy testing. Billing for the period thereafter shall be as per the calibrated meter.

### Apportioning procedure used by PP in case of a mismatch in dates of verification period and JMR

The emission reduction will be calculated from the date of first JMR after the date of registration or start date of a monitoring report during verification

## SECTION D. Data and parameters

### D.1. Data and parameters fixed ex ante

Data/Parameter	$EF_{grid,CM,y}/EF_{grid,CO2,y}$
Unit	tCO <sub>2</sub> e/MWh
Description	Combined Margin Emission Factor of NEWNE Electricity Grid
Source of data	Calculated from the operating margin and build margin emission factors (explained below) in the following way:  $EF_{grid,CM,y} = WOM * EF_{grid,OM,y} + WBM * EF_{grid,BM,y}$ $= 0.75 * 1.0049 + 0.25 * 0.6752 = 0.8401 \text{ tCO}_2\text{e/MWh}$
Value(s) applied	0.8401
Choice of data or measurement methods and procedures	Combined Margin Emission Factor has been calculated in accordance with "Tool to calculate the emission factor for an electricity system", version 2.2.1
Purpose of data/parameter	To calculate baseline emission
Additional comments	This parameter is fixed throughout the crediting period

Data/Parameter	$EF_{grid,OM,y}$
Unit	tCO <sub>2</sub> e/MWh
Description	Operating Margin Emission Factor of NEWNE Electricity Grid
Source of data	"CO <sub>2</sub> Baseline Database for Indian Power Sector" published by the Central Electricity Authority, Ministry of Power, Government of India. The "CO <sub>2</sub> Baseline Database for Indian Power Sector" version 05 is available at <a href="http://www.cea.nic.in/reports/planning/cdm_co2/database_publishing_ver5.zip">http://www.cea.nic.in/reports/planning/cdm_co2/database_publishing_ver5.zip</a>

Value(s) applied	1.0049
Choice of data or measurement methods and procedures	Operating Margin Emission Factor has been calculated by the Central Electricity Authority using the simple OM approach in accordance with "Tool to calculate the emission factor for an electricity system" version 2.2.1.
Purpose of data/parameter	To calculate baseline emission
Additional comments	This parameter is fixed throughout the crediting period

<b>Data/Parameter</b>	<b>EF<sub>grid,BM,y</sub></b>
Unit	tCO <sub>2</sub> e/MWh
Description	Build Margin Emission Factor of NEWNE Electricity Grid
Source of data	"CO <sub>2</sub> Baseline Database for Indian Power Sector" published by the Central Electricity Authority, Ministry of Power, Government of India. The "CO <sub>2</sub> Baseline Database for Indian Power Sector" version 05 is available at <a href="http://www.cea.nic.in/reports/planning/cdm_co2/database_publishing_ver5.zip">http://www.cea.nic.in/reports/planning/cdm_co2/database_publishing_ver5.zip</a>
Value(s) applied	0.6752
Choice of data or measurement methods and procedures	Build Margin Emission Factor has been calculated by the Central Electricity Authority using the simple OM approach in accordance with "Tool to calculate the emission factor for an electricity system" version 2.2.1.
Purpose of data/parameter	To calculate baseline emission
Additional comments	This parameter is fixed throughout the crediting period

<b>Data/Parameter</b>	<b>NCV<sub>DG</sub></b>
Unit	TJ/Gg
Description	Net Calorific value of Diesel
Source of data	IPCC, 2006 guidelines Table 1.2 of Chapter 1, Volume 2 <a href="http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf">http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf</a>
Value(s) applied	43.3
Choice of data or measurement methods and procedures	The value has been taken from IPCC guidelines for default values, a reliable and conservative source.
Purpose of data/parameter	Calculation of project emissions
Additional comments	This parameter is fixed throughout the crediting period. However, if IPCC publishes an updated version of its guidelines, values from the updated version will be used.

<b>Data/Parameter</b>	<b>OF</b>
Unit	--
Description	Oxidation factor of Diesel
Source of data	IPCC, 2006 guidelines Table 1.4 of Chapter 1, Volume 2 <a href="http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf">http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf</a>
Value(s) applied	1
Choice of data or measurement methods and procedures	The value has been taken from IPCC guidelines for default values, a reliable and conservative source.



Purpose of data/parameter	Calculation of project emissions
Additional comments	This parameter is fixed throughout the crediting period. However, if IPCC publishes an updated version of its guidelines, values from the updated version will be used.

<b>Data/Parameter</b>	<b>EF<sub>DG</sub></b>
Unit	tCO <sub>2</sub> /TJ
Description	Emission factor of Diesel
Source of data	IPCC, 2006 guidelines Table 1.4 of Chapter 1, Volume 2 <a href="http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf">http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf</a>
Value(s) applied	74.8
Choice of data or measurement methods and procedures	The value has been taken from IPCC guidelines for default values, a reliable and conservative source
Purpose of data/parameter	Calculation of project emissions
Additional comments	This parameter is fixed throughout the crediting period. However, if IPCC publishes an updated version of its guidelines, values from the updated version will be used.

<b>Data/Parameter</b>	<b>D<sub>DG</sub></b>
Unit	Kg/liter
Description	Density of Diesel
Source of data	Indian Oil Corporation Limited, <a href="http://www.iocl.com/Products/HSD_BS_IV_Specification.pdf">http://www.iocl.com/Products/HSD_BS_IV_Specification.pdf</a>
Value(s) applied	0.832
Choice of data or measurement methods and procedures	The value has been taken from IOCL, a reliable and conservative source
Purpose of data/parameter	Calculation of project emissions
Additional comments	This parameter is fixed throughout the crediting period. However, if IOCL publishes an updated value, the same will be used.

## D.2. Data and parameters monitored

<b>Data/Parameter</b>	<b>EG<sub>BL,y</sub></b>
Unit	MWh
Description	Net electricity exported to the grid by the project
Measured/calculated/default	Measured and calculated
Source of data	Joint Meter Reading documents
Value(s) of monitored parameter	99632.55
Monitoring equipment	Electronic Trivector meters Please refer Annex for details of meters and calibration
Measuring/reading/recording frequency	Continuous monitoring & Monthly measurement & recording from Main meter and Check meter.
Calculation method (if applicable)	Electricity Export – Electricity Import = Electricity supplied to the regional electricity grid

QA/QC procedures	Electricity exported by the project activity to the grid cross-checked from the invoices raised by the PP to HPSEB.  The energy meters is calibrated at least once in three years by HPSEB and records is maintained by the PP.
Purpose of data/parameter	Calculation of Baseline Emission
Additional comments	Data shall be archived electronically and on paper format till the last issuance + a period of 2 years

<b>Data/Parameter</b>	<b>FC<sub>i,j,y</sub></b>
Unit	Liters/yr
Description	Quantity of diesel used in year
Measured/calculated/default	Measured
Source of data	Plant log books
Value(s) of monitored parameter	0
Monitoring equipment	Ruler gauge
Measuring/reading/recording frequency	Continuous monitoring & Daily recording
Calculation method (if applicable)	The quantity of diesel consumed is measured and recorded in the log book present at the project site. The fuel is supplied by small daily tanks and the fuel is being sourced from local stations. The fuel measurements is taken place by ruler gauges (part of the daily tanks) on a daily basis and the same is being recorded in log books.
QA/QC procedures	The consumption from the log book will be verified against the receipts of diesel bought.  The ruler gauges will be calibrated annually by the project proponent through an external agency.
Purpose of data/parameter	Calculation of Project Emission
Additional comments	Data shall be archived electronically and on paper format till the last issuance + a period of 2 years

### D.3. Implementation of sampling plan

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Not applicable

## SECTION E. Calculation of emission reductions or net anthropogenic removals

### E.1. Calculation of baseline emissions or baseline net removals

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As per para 23 of AMS I.D version 17, baseline emissions for the amount of electricity supplied by project activity, BE<sub>y</sub> is calculated as

$$BE_y = EG_y * EF_{CO_2,grid,y} \text{ (as per equation 1 of AMS I.D ver. 17)}$$

Where,

EG<sub>BL,y</sub> is the electricity supplied to gridEF<sub>CO<sub>2</sub>,grid,y</sub> is CO<sub>2</sub> emission factor of the grid

$$EF_{CO_2,grid,y} = 0.8401 \text{ tCO}_2\text{e/MWh}$$

Net electricity supplied to the grid by the Project during current monitoring period i.e. 31/01/2014 to 30/06/2019 = 99632.55 MWh (Please refer Appendix for monthly details)

Baseline emission,

$$BE_y = 0.8401 \text{ tCO}_2\text{e/MWh} \times 99632.55 \text{ MWh} = 83701.31 \text{ tCO}_2\text{e}$$

$$BE_y = 83701 \text{ tCO}_2\text{e} \text{ (round-down value)}$$

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

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The CO<sub>2</sub> emissions from on-site consumption of fossil fuels due to the project activity to be calculated using the latest version of the “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion”.

The emission due to use of Diesel for emergency purpose is recorded, however the quantity is negligible as less than 0.5% of the total baseline emission, hence neglected.

## E.3. Calculation of leakage emissions

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In line with para 42 of the methodology, since the energy generating equipment is not transferred from another activity, leakage is not to be considered

## E.4. Calculation of emission reductions or net anthropogenic removals

	Baseline GHG emissions or baseline net GHG removals (t CO <sub>2</sub> e)	Project GHG emissions or actual net GHG removals (t CO <sub>2</sub> e)	Leakage GHG emissions (t CO <sub>2</sub> e)	GHG emission reductions or net anthropogenic GHG removals (t CO <sub>2</sub> e)		
				Before 01/01/2013	From 01/01/2013	Total amount
<b>Total</b>	83701	0	0	0	83701	83701

## E.5. Comparison of emission reductions or net anthropogenic removals achieved with estimates in the registered PDD

Amount achieved during this monitoring period (t CO <sub>2</sub> e)	Amount estimated ex ante for this monitoring period in the PDD (t CO <sub>2</sub> e)
83701	83915 <sup>3</sup>

### E.5.1. Explanation of calculation of “amount estimated ex ante for this monitoring period in the PDD”

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The ex-ante emission reduction estimated in PDD for first renewal crediting period i.e. 17613 tCO<sub>2</sub>e/year based on estimated annual electricity generation as per DPR. The value is calculated for number of days current this monitoring period i.e. 1739<sup>4</sup> days, the value comes as 83915 tCO<sub>2</sub>e.

The annual estimated CER as per registered PDD = 17613 tCO<sub>2</sub>e/year

<sup>3</sup> The ex-ante CER for comparison purpose calculated from date of commissioning i.e. 26/09/2014 to 30/06/2019.

<sup>4</sup> Monitoring period starts from 31/01/2014, however project commissioned on 26/09/2014, hence ex-ante estimation is calculated for actual number of days 1739 of operation from date of commissioning.

The corresponding CERs during current monitoring period =  $(17613 \times 1739)/365$

The corresponding CERs during current monitoring period = 83915 tCO<sub>2</sub>e

#### E.6. Remarks on increase in achieved emission reductions

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The emission reduction achieved during current monitoring period i.e. 83701 tCO<sub>2</sub>e is 0.25% lower than the ex-ante estimation in registered PDD for same period due to lower availability of discharge from AD Hydro.

#### E.7. Remarks on scale of small-scale project activity

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The project activity is a small-scale type-I renewal resource (hydro energy) based electricity generation project. The installed capacity of the project activity is 4.8MW, there were no other addition by the PP hence project activity has operated as per small scale project and installed capacity was well below small scale threshold of 15MW

### Appendix-A: Electricity Supplied to Grid

	Net Electricity Supplied to Grid EG <sub>y</sub> (kWh)					
Month/Year	2014	2015	2016	2017	2018	2019
Jan	0	469444	554869	473900	481833	546594
Feb	0	376285	450185	480194	373213	394151
Mar	0	555347	576024	640986	473752	494284
Apr	0	1542686	1143986	2079079	1095092	1707955
May	0	3653431	2918039	3104686	2054106	2530952
Jun	0	3709630	3580391	3500933	2957446	3237077
Jul	0	3978455	3871421	4163639	3365195	--
Aug	0	3578648	4119486	3552458	2787753	--
Sep	195177	2233684	2956947	2516390	3137150	--
Oct	1217614	1275557	1429493	1382529	1757631	--
Nov	711676	801495	832134	792933	828	--
Dec	424889	594728	604812	600110	593174	--

**Appendix-B: Calibration****2014:****Make-Secure, Type-E3M021, Accuracy Class-0.2s****Calibration of following meters having serial number as below:**

1. HPU05217- Calibrated on 7<sup>th</sup> Jan 2014
2. HPU05218- Calibrated on 7<sup>th</sup> Jan 2014
3. HPU05219- Calibrated on 7<sup>th</sup> Jan 2014
4. HPU05220- Calibrated on 7<sup>th</sup> Jan 2014
5. HPU05221- Calibrated on 7<sup>th</sup> Jan 2014
6. HPU05222- Calibrated on 7<sup>th</sup> Jan 2014

**2015:****Make-Secure, Type-E3M024, Accuracy Class-0.2s****Calibration of following meters having serial number as below:**

7. HPU04946- Calibrated on 23<sup>rd</sup> Sep 2015
8. HPU04947- Calibrated on 23<sup>rd</sup> Sep 2015
9. HPU04948- Calibrated on 22<sup>nd</sup> Sep 2015
10. HPU04949- Calibrated on 21<sup>st</sup> Sep 2015
11. HPU04950- Calibrated on 22<sup>nd</sup> Sep 2015
12. HPU04951- Calibrated on 21<sup>st</sup> Sep 2015

**2016:****Make-Secure, Type-E3M021, Accuracy Class-0.2s****Calibration of following meters having serial number as below:**

1. HPU05217- Calibrated on 9<sup>th</sup> May 2016
2. HPU05218- Calibrated on 9<sup>th</sup> May 2016
3. HPU05219- Calibrated on 10<sup>th</sup> May 2016
4. HPU05220- Calibrated on 10<sup>th</sup> May 2016
5. HPU05221- Calibrated on 10<sup>th</sup> May 2016
6. HPU05222- Calibrated on 10<sup>th</sup> May 2016

**2017:**

**Make-Secure, Type-E3M024, Accuracy Class-0.2s****Calibration of following meters having serial number as below:**

1. HPU04946- Calibrated on 06<sup>th</sup> Jul 2017
2. HPU04947- Calibrated on 06<sup>th</sup> Jul 2017
3. HPU04948- Calibrated on 07<sup>th</sup> Jul 2017
4. HPU04949- Calibrated on 07<sup>th</sup> Jul 2017
5. HPU04950- Calibrated on 08<sup>th</sup> Jul 2017
6. HPU04951- Calibrated on 08<sup>th</sup> Jul 2017

**2018:****Make-Secure, Type-E3M021, Accuracy Class-0.2s****Calibration of following meters having serial number as below:**

7. HPU05217- Calibrated on 3<sup>rd</sup> July 2018
8. HPU05218- Calibrated on 3<sup>rd</sup> July 2018
9. HPU05219- Calibrated on 3<sup>rd</sup> July 2018
10. HPU05220- Calibrated on 4<sup>th</sup> July 2018
11. HPU05221- Calibrated on 4<sup>th</sup> July 2018
12. HPU05222- Calibrated on 5<sup>th</sup> July 2018

The meters calibration due on 2<sup>nd</sup> July 2019

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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
07.0	31 May 2019	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 02.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN);</li> <li>• Add a section on remarks on the observance of the scale limit of small-scale project activity during the crediting period;</li> <li>• Add "changes specific to afforestation or reforestation project activity" as a possible post-registration changes;</li> <li>• Clarify the reporting of net anthropogenic GHG removals for A/R project activities between two commitment periods;</li> <li>• Make editorial improvements.</li> </ul>
06.0	7 June 2017	Revision to: <ul style="list-style-type: none"> <li>• Ensure consistency with version 01.0 of the “CDM project standard for project activities” (CDM-EB93-A04-STAN);</li> <li>• Make editorial improvements.</li> </ul>
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> <li>• Include provisions related to delayed submission of a monitoring plan;</li> <li>• Provisions related to the Host Party;</li> <li>• Remove reference to programme of activities;</li> <li>• Overall editorial improvement.</li> </ul>
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> <li>• Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0));</li> <li>• Include provisions related to standardized baselines;</li> <li>• Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1;</li> <li>• Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>;</li> <li>• Editorial improvement.</li> </ul>
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 (EB 70, 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).

<i>Version</i>	<i>Date</i>	<i>Description</i>
01.0	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		