



Verified Carbon Standard

5 MW BRAHM GANGA HYDRO – ELECTRIC PROJECT AT KULLU DISTRICT OF HIMACHAL PRADESH, INDIA



Document Prepared by EKI Energy Services Limited

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| Project Title | 5 MW BRAHM GANGA HYDRO – ELECTRIC PROJECT AT KULLU DISTRICT OF HIMACHAL PRADESH, INDIA |
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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

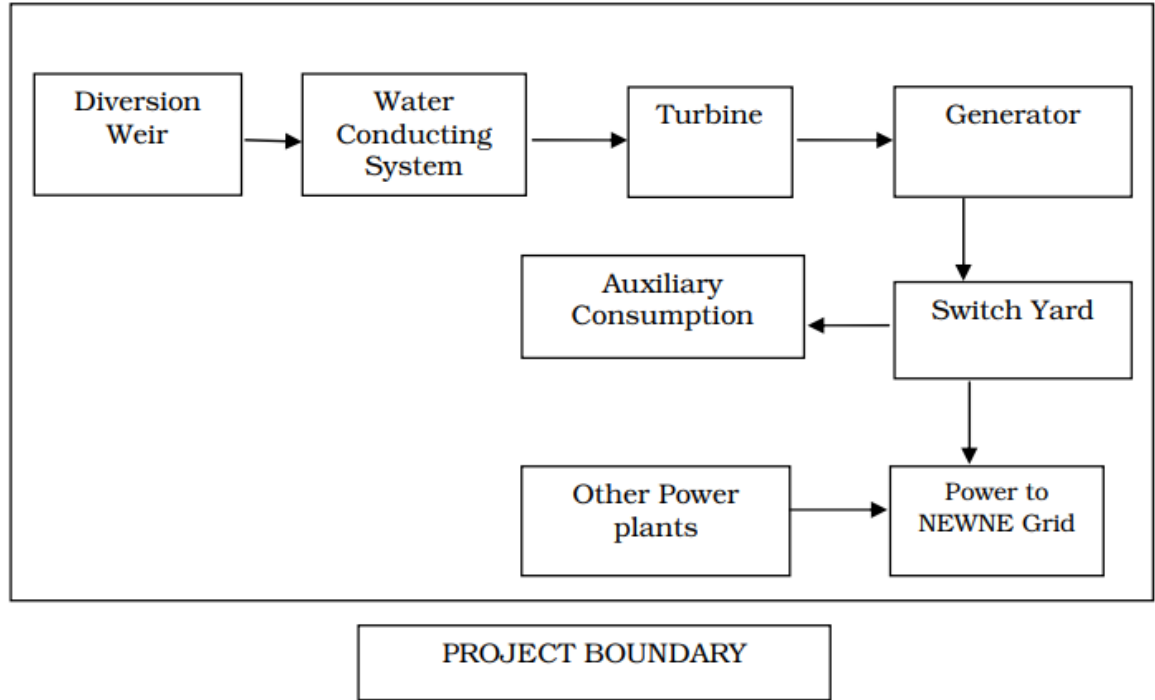
5 MW Brahm Ganga Hydro – Electric Project at Kullu district of Himachal Pradesh, India, implemented by M/s. Harisons Hydel Construction Co. Private Limited (HHCCPL), is a small scale, grid connected, run-of-the-river Hydro-electric Project (HEP) and is located on the Brahm Ganga Nallah (Tributary of River Parbati) in Kullu District of Himachal Pradesh, India. The project consists of two 2.5 MW jet Pelton wheel Turbines.

The purpose of the project is to generate clean energy in a sustainable manner, utilizing hydrological resource of the Nallah. The project activity supplies electricity to the respective State Grid of India, which is highly dominated by thermal based power generating units.

In context of the ever-increasing demand of electricity, the implementation of the project contributes to help in meeting the power demand- supply gap in the Northern grid of India, which is a part of the integrated Grid system, i.e., NEWNE Grid (Now Indian Grid). Also, through utilization of the hydro potential, the project activity is displacing the same amount of electricity generated from fossil fuel-based power generating units from the grid, thereby, contributing towards the reduction of Greenhouse Gas emissions (GHGs) from the atmosphere.

The project consists of two 2.5 MW jet Pelton wheel Turbines, with an expected net electricity supply of 21,270 MWh per annum. The project commissioning date is 02-April-2008. The project is running smoothly with scheduled regular maintenance. The Major Breakdown is mentioned in section

APPENDIX 2: Major Breakdown Details.



1.2 Sectoral Scope and Project Type

The project activity comes under the following category as per the Voluntary Carbon Standard (VCS) -2007.1

Sectoral scope : 01. Energy industries (renewable -/non-renewable sources)

Project Type : I. Renewable energy project

Project Category: AMS I.D, Version 15, valid from 30- October- 2009.

The project activity is not grouped or de bundled component of any other project activity.

1.3 Project Proponent

| | |
|--------------------------|----------------------------------------------------------|
| Organization name | Harisons Hydrel Construction Co. (P) Limited (HHCCPL) |
| Contact person | Ghanshyam Sood |
| Title | Director |
| Address | Akhara Bazar, Kullu, Himachal Pradesh, India Pin- 175101 |
| Telephone | +91- 99075 34900 |
| Email | manish@enkingint.org |

1.4 Other Entities Involved in the Project

| | |
|----------------------------|----------------------------------------------------------------------------------|
| Organization name | EKI Energy Services Limited |
| Role in the Project | Project Consultant |
| Contact person | Ms. Dhriti Mishra |
| Title | Project Manager |
| Address | Office No 201, Plot No 48, Scheme 78, Vijay Nagar Part- II, Indore 452010, India |
| Telephone | +91-9049777337 |
| Email | dhriti@enkingint.org / registry@enkingint.org |

1.5 Project Start Date

02-April-2008 (Project Commissioning date) as per the Commissioning certificate.

1.6 Project Crediting Period

A renewable crediting period of 10 years has been chosen. The start date of the crediting period is 02-April-2008.

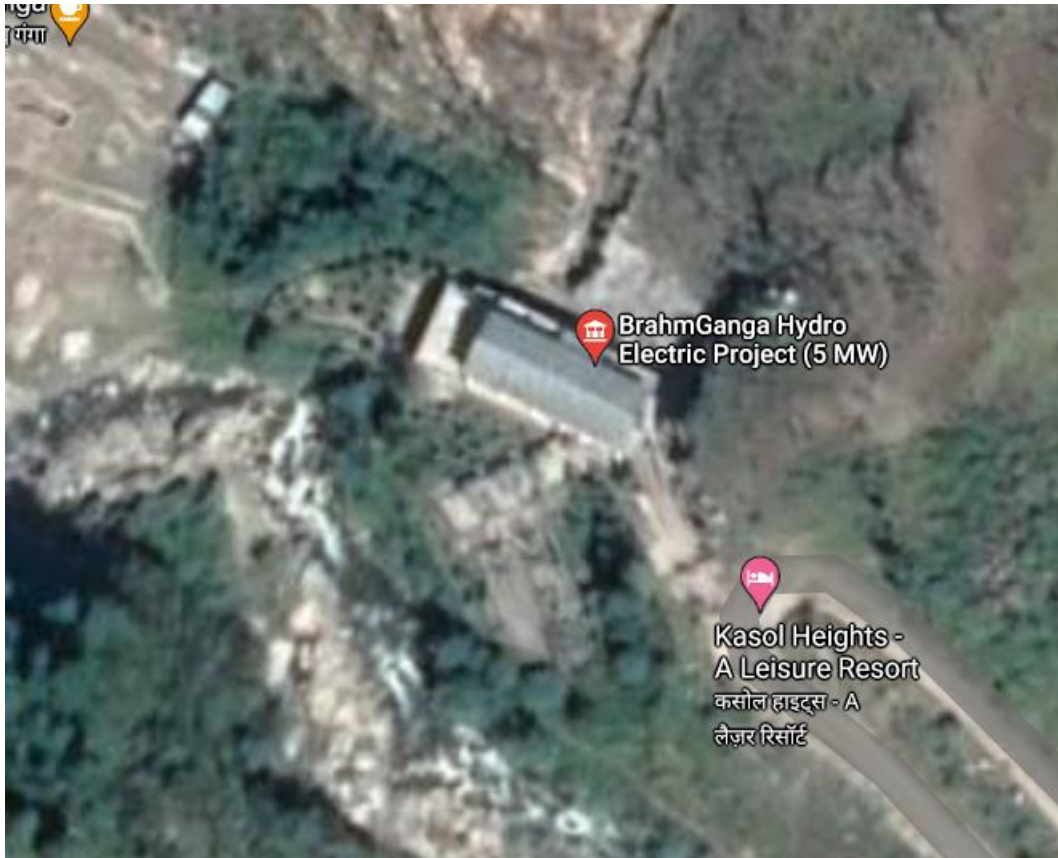
Start Date: 02-April-2008

End Date: 01-April-2018

1.7 Project Location

The 5 MW (2 × 2.5 MW) Hydro Electric Power Project is located near the Manikaran village on the right bank of the Brahm Ganga Nallah in District Kullu of Himachal Pradesh. The project area is approached by the motorable road of 45 km from Kullu and 70 km from the Manali town. The nearest railway station is Chandigarh, which is located about 275 km on Delhi-Kalka trunk line. The nearest airport is at Bhuntar. The project area is located between Latitude 32° 02' N and Longitude 77° 21.20' E. The physical location of the project has been shown as follows:





1.8 Title and Reference of Methodology

The methodology for the project activity is approved methodology for large-scale CDM project activities. The details of the methodology are as follows:

Methodology: AMS I.D.
Project Type: Type-I: Renewable Energy Projects
Title: Grid connected renewable electricity generation
Version No.: 15.0;
Reference: CDM Methodology

The methodology refers to following CDM Tools:

- Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion version 02
- Tool to calculate the emission factor for an electricity system, Version 2, 16th October, 2009

1.9 Participation under other GHG Programs

The project is not rejected under any GHG program. The project proponent has declared that the project has not been rejected under any other GHG program. The copy of the declaration letter dated 21-January-2010 has been provided to the Designated Operational Entity (DOE).

1.10 Other Forms of Credit

The project activity is not availing any REC benefits and the same can be confirmed from publicly available link of REC generators.

Web-link: https://www.recregistryindia.nic.in/index.php/general/publics/registered_regens PP has also submitted undertaking for not availing other forms of environmental credit for the same crediting period under consideration.

1.11 Sustainable Development

Contribution to sustainable development:

Ministry of Environment, Forests and Climate Change (MoEF&CC), has stipulated economic, social, environment and technological well-being as the four indicators of sustainable development. The project contributes to sustainable development using the following ways.

- **Social well-being:** The project helps in generating employment opportunities during the construction and operation phases. The project activity led to development in infrastructure in the region like development of roads and also promotes business with improved power generation.
- **Economic well-being:** The project is a clean technology investment in the region, which would not have been taken place in the absence of the VCS benefits. The project activity also helps to reduce the demand supply gap in the state.
- **Technological well-being:** The operation of project activity leads to promotion of solar power generation and encourages other entrepreneurs to participate in similar projects.
- **Environmental well-being:** Hydro being a renewable source of energy, it reduces the dependence on fossil fuels and conserves natural resources which are on the verge of depletion. Due to its zero emission the Project activity also helps in avoiding significant amount of GHG emissions. The project activity generates power using zero emissions hydro energy-based power generation which helps to reduce GHG emissions and specific pollutants like SO_x, NO_x, and SPM associated with the conventional thermal power generation facilities.

2 SAFEGUARDS

2.1 No Net Harm

The project activity does not involve any major construction activity. It primarily requires the installation of the hydro plants, interfacing the generators with the State Electricity Board by setting up HT transmission lines and installation of other accessories.

Thus, there are no any significant impacts due to implementation of project activity on air, water, soil quality and ambience are envisaged due to the project activity.

2.2 Local Stakeholder Consultation

As a part of continual improvement process, feedback from the associated stakeholders is vital, therefore a dedicated Visitor register cum grievance register has been placed at the project site which is accessible to stakeholders to provide their feedback on the project. It is appropriate publicly accessible location at which local stakeholders can provide their feedback on the project. This location is also conducive to continuous and regular checks for stakeholder comments. For the global stakeholders, the suggestion and the grievance can be submitted to hhccpl_kullu@yahoo.co.in

Stakeholder meetings were organized at the time of registration of project activity in order to identify the major challenges around the area, stakeholders were invited well in advance through printed invitation, calls, meeting and a notice is placed around the local common areas. Various CSR activities around site are carried out. The stakeholder are also requested to share their experiences and grievances on continuous basis. Registers is used to record the grievances and feedback.

During the current monitoring period, positive feedbacks are received regarding site operation. No any grievances received during the current monitoring period; therefore, no any mitigation measures are required. In case of grievances, the nature of probable resolution is discussed with the plant head office and implemented by the site incharge. The grievance copies have been submitted to DOE.

2.3 AFOLU-Specific Safeguards

Not applicable to this as this is not an AFOLU project activity.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project activity comprises of two units of 2.5 MW capacity each. The construction of a simple diversion weir is carried out to divert the water which is then taken to the turbines after creating the necessary head. Electricity is generated by converting potential energy (available due to head of water) into kinetic energy (through Pelton wheel Turbines) and is then coupled with generators to further convert this kinetic energy (mechanical energy) into electrical energy. The detailed description of the project components has been described below:

| Parameters | Unit | Values |
|------------|------|--------|
|------------|------|--------|

| 1. Diversion Structure | | |
|-----------------------------|--------|------------------------------------------------------------------------------------------------------|
| Type of Structure | - | Boulder Type wire |
| Length | m | 24 |
| Number of Gates | - | 2 nos. at inlet and one nos. at bottom outlet |
| 2. Water Conductor System | | |
| Intake and Approach channel | | |
| Length | m | 5 |
| Size | m | 3x3.5 |
| Desilting Tank | | |
| Type | - | Dufour Type |
| Dimension | m | 45x8x3.5 |
| 3. Power Tunnel | | |
| Shape | | D-shaped tunnel |
| Length | m | 996 |
| Dimension | m | 996x2x2.4 |
| 4. Fore Bay | | |
| Size | m | 15x8 |
| Maximum Discharge Capacity | cumecs | 2.52 |
| 5. Penstock | | |
| Number | - | 01 |
| Length | m | 330 |
| Diameter | mm | 1000 |
| 6. Power House | | |
| Type | - | Surface |
| Dimension | m | 24.95x9.5x11.2 |
| 7. Tail Race Tunnel | | |
| Length | m | 50 |
| Shape | - | Two rectangular RCC ducts emanating from each unit & merging together in a rectangular open channel. |

The electricity is generated at 6.6 kV level and evacuated at 33 kV level. Two step up transformers, 6.6 kV/33 kV, one each for two machines is provided at switchyard near power house. The electricity at 33 kV is transmitted to the Himachal Pradesh State Electricity Board (HPSEB) sub-station.

The respective project is running smoothly, there were no any instances occurred that would alter the GHG reductions, methodology applicability and monitoring procedure. The plant went for the schedule maintenance at regular intervals. Major Breakdown register tabulated in APPENDIX 2: MAJOR BREAKDOWN DETAILS.

3.2 Deviations

3.2.1 Methodology Deviations

No methodology deviation is applied during the monitoring period.

3.2.2 Project Description Deviations

Deviation 1:

Typo error related to turbine type have been revised in the current MR based upon actual site scenario. Francis turbine is mentioned instead of Pelton wheel type. The change having no impact on baseline emission calculation. The nature of change is permanent.

3.3 Grouped Projects

The project is not a grouped project thus this is not applicable.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

| | |
|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter | $EF_{grid,OM,y}$ |
| Data unit | tCO ₂ /MWh |
| Description | Operating Margin CO ₂ emission factor in year y |
| Source of data | Calculated from CEA database, Version 5, November, 2009 |
| Value applied | 1.00493 |
| Justification of choice of data or description of measurement methods and procedures applied | Calculated as per “Tool to calculate the emission factor for an electricity system, version 05.0.0” as 3-year generation weighted average. |
| Purpose of Data | For the calculation of the Baseline Emission |
| Comments | This parameter is fixed ex-ante for the entire crediting period. |

| | |
|-----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Data / Parameter | $EF_{grid,BM,y}$ |
| Data unit | tCO ₂ /MWh |
| Description | Build Margin CO ₂ emission factor in year y |
| Source of data | Calculated from CEA database, Version 5, November, 2009 |
| Value applied | 0.67518 |
| Justification of choice of data or description of measurement methods and procedures applied | The value of BM has also been taken from “CO ₂ Baseline Database for the Indian Power Sector”, Version 5 |
| Purpose of Data | For the calculation of the Baseline Emission |

| | |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Comments | This parameter is fixed ex-ante for the entire crediting period. |
| Data / Parameter | $EF_{grid,CM,y}$ |
| Data unit | tCO ₂ /MWh |
| Description | Combined Margin CO ₂ emission factor in year y |
| Source of data | Calculated from CEA database, Version 5, November, 2009 |
| Value applied | 0.84006 |
| Justification of choice of data or description of measurement methods and procedures applied | <p>The combined margin emissions factor is calculated as follows:</p> $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$ <p>Where:</p> <p>$EF_{grid,BM,y}$ = Build margin CO₂ emission factor in year y (tCO₂/MWh) $EF_{grid,OM,y}$ = Operating margin CO₂ emission factor in year y (tCO₂/MWh) W_{OM} = Weighting of operating margin emissions factor (%) = 75% W_{BM} = Weighting of build margin emissions factor (%) = 25%</p> |
| Purpose of Data | For the calculation of the Baseline Emission |
| Comments | This parameter is fixed ex-ante for the entire crediting period. |

4.2 Data and Parameters Monitored

| | |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Data / Parameter | EG_y |
| Data unit | MWh |
| Description | Net electricity supplied by the project activity. |
| Source of data | Joint Meter Reading (JMR) at the interconnection point (sub-station) |
| Description of measurement methods and procedures to be applied | <p>Monthly Joint Meter Readings (JMRs) as measured from the Interconnection Point (sub-station) are taken by the designated officials of the Himachal Pradesh State Electricity Board (HPSEB) and the project proponent. There is a separate dedicated transmission line connected to Jari substation. The joint meter readings shall be recorded and signed by the authorised representative (s) of both HPSEB & the proponent. This net supply value from the JMR (covering all the values of the losses, import) would be considered for the calculation of the emission reduction out of the project activity.</p> <p>Same can also be cross checked from invoices raised to HPSEB.</p> <p>The total data would be archived on paper and would be kept at</p> |

| | |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | least for 2 years after the end of the last crediting period. |
| Frequency of monitoring/recording | Continuous monitoring, hourly measurement and at least monthly recording |
| Value monitored | 45,512.68 |
| Monitoring equipment | <p>Three phase Four wire Electronic Trivector Meters (digital display) are used.</p> <p>Monitoring equipment are energy meters installed at each of the project activity instance site. The accuracy class of meters, calibration frequency of meters is totally under purview of state electricity board and PP do not have any control on it. The meter details, make, calibration date, due date and respective accuracy class are mentioned in the APPENDIX 1: Calibration Records</p> |
| QA/QC procedures to be applied | <p>Calibration is performed once in a year.</p> <p>If the Main Meter and the Check Meter fail record or of any of the PT fuses have blown out, then the Energy would be computed on a mutually agreeable basis between the Company and the Board for that period of defect. In case there is no mutual agreement then the matter would be referred to the Chief Electrical Inspector to the Government of Himachal Pradesh whose decision would be final and binding on both the Parties. The gross generation at project site are also recorded on hourly basis by the project proponent to crosscheck any further non-conformity.</p> |
| Purpose of the data | Calculation of Baseline Emission |
| Calculation method | Net Energy Generation = Total energy export to the Grid – Total energy import from the grid |
| Comments | - |

4.3 Monitoring Plan

The main purpose of monitoring is to monitor the data used to calculate the actual emission reduction from the project activity. The main parameters that are needed to be monitored are:

1. The amount of net electricity supplied to the grid EG_y in MWh.

This parameter is taken from the Joint Meter Reading (JMR) data. This net supply value from the JMR (covering all the values of the losses, import) would be considered for the calculation of the emission reduction out of the project activity.

Three phase Four wire Electronic Tri-vector Meters (digital display) are used.

Monthly Joint Meter Readings (JMRs) as measured from the Interconnection Point (sub-station) are taken by the designated officials of the Himachal Pradesh State Electricity Board (HPSEB) and the project proponent. There is a separate dedicated transmission line connected to Jari substation. The joint meter readings are recorded and signed by the authorized representative (s) of both HPSEB & the proponent. Same can also be cross checked from invoices raised to HPSEB.

The parameter which is monitored as per the monitoring plan is the net electricity supplied by the project activity to the grid. A hierarchy model based on the responsibilities for executing the Monitoring plan has been shown below:

| | |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Director | Overall management and execution of monitoring plan |
| Plant Manager | Recording, reporting and maintaining of the Joint Meter Reading (JMR) data Quality assurance and control Periodic calibration as per monitoring plan |
| Shift engineer/ Support staff | Assist the Plant manager in all the above activities |

The Director has the overall responsibility of the successful implementation of the monitoring plan and estimation of the emission reduction. Joint Meter Reading (JMR) data records and calibration certificates are maintained both electronically & on paper by the Project Proponent.

All the data monitored under the monitoring plan would be kept for two years after the end of crediting period or till the last issuance of Emission Reductions (ERs) for the project activity, whichever occurs later.

Reliability:

The meters installed at the Interconnection point are jointly inspected and sealed on behalf of the Parties and shall not be interfered with either Party except in the presence of the other Party or its accredited representative(s).

If during the half yearly test checks, the Main Meter is found to be within the permissible limits of error and the corresponding Check Meter is found to be beyond the permissible limits of error, then billing would be as per the Main Meter as usual. The corresponding Check Meter shall, however, be calibrated or replaced with spare tested calibrated meter, as may be necessary.

If during the half yearly test checks, the Main Meter is found to be beyond permissible limits of error but the Check Meter is found to be within permissible limits of error, then the billing for the month and up to the date and time of the calibration/replacement of the defective Main Meter, shall be as per the Check Meter. Such meter shall be immediately calibrated or replaced with the spare tested/ calibrated meter, as may be necessary, where after billing shall be as per the Main Meter.

Frequency:

Monthly Joint Meter Readings (JMRs) as measured from the Interconnection Point are taken by the designated officials of the Himachal Pradesh State Electricity Board (HPSEB) and the project proponent. The joint meter readings shall be recorded and signed by the authorized representative (s) of both HPSEB & the proponent.

Completeness:

If the Main Meter and the Check Meter fail record or of any of the PT fuses have blown out, then the Energy would be computed on a mutually agreeable basis between the Company and the Board for that period of defect. In case there is no mutual agreement then the matter would be referred to the Chief Electrical Inspector to the Government of Himachal Pradesh whose decision would be final and binding on both the Parties. The gross generation at project site are also recorded on hourly basis by the project proponent to cross-check any further non-conformity.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The project is a run-of-the-river, small scale hydro - electric project and supplying power to the Northern grid which is part of the integrated grid system, NEWNE Grid¹, which is dominated by fossil fuel based thermal power plants.

Hence, the applicable baseline methodology is “AMS I.D., Version 15 of Sectoral Scope 01, 30-October- 2009²”.

According to AMS-I. D, “the baseline emission is the product of electrical energy baseline $EG_{BL,y}$ expressed in kWh of electricity produced by the renewable generating unit multiplied by an emission factor”.

$$BE_y = EG_{y} * EF_{CO_2}$$

Where :

BE_y Baseline emissions in year y (tCO₂e/yr)

¹ <http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>

² <http://cdm.unfccc.int/UserManagement/FileStorage/7QXAZ5036WN8BEYKUDFRPJGL21V419>

EG_y Energy Baseline in year y, KWh
 EF_{CO_2} CO₂ Emission Factor in year y, tCO_{2e}/KWh
 Therefore,

$$BE_y = 45,512.68 * 0.84006$$

$$BE_y = 38,232 \text{ tCO}_2\text{e (round down to nearest integer values)}$$

5.2 Project Emissions

As per AMS-I.D, Version 15, 30- October- 2009, page no. 6, point no. 14 “for most renewable energy project activities, $PE_y = 0$ ”. The project activity is a small scale, renewable energy based hydroelectric project and does not come under the projects as referred in the methodology, therefore, $PE_y = 0$.

5.3 Leakage

As per AMS -I. D. Version 15, 30- October- 2009, page no. 6, point no. 15 “If the energy generating equipment is transferred from another activity, leakage is to be considered”. Therefore, the project activity does not result in any direct or indirect emission of greenhouse gases, or any leakages. Hence, $LE_y = 0$

5.4 Net GHG Emission Reductions and Removals

The Formula used to calculate the net emission reduction for the project activity is

$$ER_y = BE_y - PE_y - LE_y$$

Where,

ER_y = Emission Reduction in tCO₂/year

BE_y = Baseline emission in tCO₂/year

PE_y = Project emissions in tCO₂/year

LE_y = Leakage Emissions in tCO₂/year

For the project activity during the current monitoring period, as per section 5.1

$$BE_y = 38,232 \text{ tCO}_2\text{e}$$

$$PE_y = 0 \text{ tCO}_2\text{e}$$

$$LE_y = 0 \text{ tCO}_2\text{e}$$

| Year | Baseline emissions or removals (tCO _{2e}) | Project emissions or removals (tCO _{2e}) | Leakage emissions (tCO _{2e}) | Net GHG emission reductions or removals (tCO _{2e}) |
|------|-----------------------------------------------------|----------------------------------------------------|----------------------------------------|--------------------------------------------------------------|
| | | | | |

| | | | | |
|------------------------------------------|---------------|----------|----------|---------------|
| 01-April-2016 to 31-December-2016 | 17,058 | 0 | 0 | 17,058 |
| 01-January-2017 to 31-December-2017 | 19,588 | 0 | 0 | 19,588 |
| 01-January-2018 to 01-April-2018 | 1,586 | 0 | 0 | 1,586 |
| Total | 38,232 | 0 | 0 | 38,232 |

The current monitoring period is from 01-April-2016 to 01-April-2018 and involves 731 days. For 365 days, annual estimation of ER in VCS PD is 17,868 tCO_{2e} and for 731 days, the same will be 35,784 tCO_{2e}.

The actual emission reductions achieved is 6.8% higher than estimated. This is due to high rainfall during current monitoring period. The rainfall is not under control of PP. As per the registered PD, sensitivity analysis page number 22, an increase in 10% in annual electricity generation result in 13.30% of project IRR. The breaching values of Project IRR is 13.61%. Therefore, increase in generation doesn't impact the additionality.

APPENDIX 1: CALIBRATION RECORDS

| Calibration schedule ³ | | | | | |
|-----------------------------------|----------|------|----------------|------------------------|------------------------|
| Meter Type | Sl. No. | Make | Accuracy Class | Calibration Date | Calibration valid till |
| Main Meter | 11071310 | L&T | 0.2s | 01-Feb-16 | 31-Jan-17 |
| Main Meter | 15625796 | L&T | 0.2s | 19-Sep-16 | 18-Sep-17 |
| Main Meter | 11071310 | L&T | 0.2s | 05-Jul-17 | 04-Jul-18 |
| Main Meter | 15625796 | L&T | 0.2s | 05-Feb-18 | 04-Feb-19 |
| Check Meter | 15625805 | L&T | 0.2s | 19-Sep-16 ⁴ | 18-Sep-17 |
| Check Meter | 11071309 | L&T | 0.2s | 05-Jul-17 | 04-Jul-18 |
| Check Meter | 15625805 | L&T | 0.2s | 05-Feb-18 | 04-Feb-19 |

³ However, state authority regularly changes the monitoring meters of project activity and provide the details of new and old meters in the respective month's JMR.

⁴ There was delay in calibration for Check meter. The correction factor as per CDM validation and verification standard for project activities Version 02 paragraph 366 is not applied since the emission reductions are based on the JMR values (JMR values which referred to Main meter readings which is calibrated at a frequency of 1 year and there was no delay in calibration).

APPENDIX 2: MAJOR BREAKDOWN DETAILS

| Sr. No. | Dated | Duration | Remarks |
|---------|-------------------|----------|--------------------------------------|
| 1 | 22-September-2016 | 22:40hrs | 33 kv line fault. |
| 2 | 23-October-2016 | 21:47hrs | 33 kv line fault. |
| 3 | 07-January-2017 | 64:15hrs | 33 kv line fault. |
| 4 | 07-February-2017 | 10:50hrs | Power house shutdown for maintenance |
| 5 | 15-February-2017 | 19:03hrs | Power House (Nozzle tip changed) |
| 6 | 03-April-2017 | 20:50hrs | Maintenance Work at power house |
| 7 | 06-April-2017 | 22:31hrs | 33 kv line fault. |
| 8 | 20-March-2018 | 22:12hrs | 33 kv line fault |