



**Verified Carbon
Standard**

VISHNUPRAYAG HYDRO-ELECTRIC PROJECT (VHEP) BY JAIPRAKASH POWER VENTURES LTD. (JPVL)



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Certification)

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Summary:

Verification purpose: The main purpose of this project activity is to generate clean form of electricity through Hydro power source. Jainprakash Power Ventures Limited has set up a 400 MW run-of the river hydro power project across river Alaknanda near Joshimath in Chamoli district of Uttaranchal (now Uttarakhand) state of India. The project activity was commissioned on 03/06/2006. The electricity generated from the project activity is supplied to Indian Electricity Grid, which is mainly dominated by thermal/fossil fuel-based power plant. The power generated by the project activity is being sold to respective State Electricity Board.

Start date of the project activity is 03/06/2006. This is the day on which the project has accounted for emission reductions as per the registered VCS PD dated 10/08/2008 and final validation report version 01 dated 01/07/2009. An undertaking has been submitted by PP for double counting would never happens with the any other GHG program. During the current monitoring period, project activity undergoes continued operation and no major breakdown had taken place.

This is 14th monitoring under VCS and covers this activity from 01/01/2013 to 02/06/2016 (inclusive both days). During the Current Monitoring Period from 01/01/2013 to 02/06/2016 (First and last date included) the project activity has supplied 3852752.85MWh of electricity, and thus contributing to the GHG reductions 2,889,200 tCO₂e.

Thus, VCS crediting period is of 10 years. The start date of crediting period is 03/06/2006¹ and 02/06/2016 is the end date of the crediting period.

A risk-based approach has been followed to perform this verification activity. In the course of verification, 05 Corrective Action requests (CAR), 00 Clarification Requests (CLs) and 00 Forward action requests (FARs) were raised and successfully closed. The review of the Monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PP have provided DOE with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by "Jaiprakash Power Ventures Pvt Ltd " to perform the 14th periodic verification

¹ As per VCS-2 guidelines

of the “Vishnuprayag Hydro-electric Project (VHEP) by Jaiprakash Power Ventures Ltd. (JPVL)” under VCS standard and guideline version 4.0. The objective of this verification activity is to have an independent third party for the assessment of the project design, monitoring report and Final Verification report and to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements. In particular;

- the project's baseline is assessed against “ACM0002 version 06”
- the project's monitoring plan is assessed against “ACM0002 version 06”
- the projects compliance with, the requirements of Article 12 of the Kyoto Protocol, the CDM *Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline and standard, version 4.0*
- CDM Validation and Verification Standard for project activities, version 02
- CDM Project Standard for project activities, version 02
- CDM project cycle procedure for project activities, version 02
- VCS standard, version 4.0
- VCS guideline, version 4.0

Verification is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VERs).

The scope of the verification is the independent and objective review of the monitoring report (MR). The MR is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The verification was based on the guidance given in the CDM Validation and Verification Standard for the project activities, version 02, review against registered PD and Final Validation report, CDM Project Standard for project activities, version 02; CDM Project Cycle Procedure for project activities, version 02 and VCS program guideline and standard version 4.0.

The assessment team has employed a risk-based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the MR. The main focus of the assessment team is to identify the significant risks for the project implementation and the generation of VERs. The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring report combined.

The only purpose of the verification is its usage during the issuance process as part of the VCS project cycle. Therefore, LGAI Technological Center S.A. (Applus+ Certification) can't be held liable by any party for decisions made or not made based on the verification opinion, which will go beyond that purpose.

The verification has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. No sampling procedure applied for site visit or document verifications. The entire documents checked/plant verification conducted to arrive at positive verification conclusions.

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (Hereinafter referred as Applus+ Certification) has been appointed by “Jaiprakash Power Ventures Ltd. (JPVL)” to perform the 14th periodic verification of the project entitled “Vishnuprayag Hydro-electric Project (VHEP) by Jaiprakash Power Ventures Ltd. (JPVL)” under VCS standard and guideline version 4.0. The objective of this verification activity is to have an independent third party for the assessment of the project design, monitoring report and final verification report and to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements. In particular;

- the project's baseline is assessed against “ACM0002 version 06”
- the project's monitoring plan is assessed against “ACM0002 version 06”
- the project's compliance with the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline and standard version 4.0
- CDM Validation and Verification Standard for project activities, version 02
- CDM Project Standard for project activities, version 02
- CDM project cycle procedure for project activities, version 02
- VCS standard, version 4.0
- VCS guideline, version 4.0

Verification is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of estimated verified emission reductions (VERs).

1.2 Scope and Criteria

The scope is defined as an independent and objective review of the Monitoring report (MR) prepared as per the registered PD and registered approved methodology ACM0002 version 6.0. The MR is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board and VCS standard and guideline version 4.0, including the approved baseline and monitoring methodology ACM0002 version 6.0. The verification was based on the requirements in the CDM validation and verification standard for project activities, Version 02.0, CDM Project Standard for project activities, version 02.0, CDM project cycle procedure for project activities, version 02.0 and VCS program guideline and standard version 4.0

The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the Monitoring report. In line with Guidelines for Application of materiality in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet. It invoices follows the paper trail back to the raw data such as meter reading records and invoices. There are no material errors, overestimation of ER, omission or misstatement. The verification team has reviewed all the documents like commissioning certificates, JMR, invoices etc.

1.3 Level of Assurance

The verification has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. The entire documents checked/Power plant verification conducted to arrive at positive verification conclusions

1.4 Summary Description of the Project

The main purpose of this project activity is to generate clean form of electricity through Hydro power source. Jaiprakash Power Ventures Ltd. (JPVL) has set up a 4 X 100 MW run-of the river hydro power project across river Alaknanda near Joshimath in Chamoli district of Uttaranchal (now Uttarakhand) state of India. The project activity was commissioned on 03/06/2006. The project activity lies between Lat. 30° 32'-30° 42'N and Long. 79° 28'-79° 38' E.

The Project activity is a new facility (Greenfield) and the electricity delivered by the project activity is exported to the Indian electricity grid. The project will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The PP has entered into long term power purchase agreement with UP Power Corporation Limited (UPPCL) and electricity is being sold to UPPCL. The electricity generated by the project activity is stepped up to 400 kV and is evacuated by two circuits of 400 kV lines from the power station to the Indian grid.

During the Current Monitoring Period from 01/01/2013 to 02/06/2016 (First and last date included) the project activity has supplied 3,852,752.85 MWh of electricity, and thus contributing to the GHG reductions 2,889,200 tCO₂e.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification Process: The project assessment is based on the Clean Development Mechanism Validation and Verification Standard for project activities, version 02.0 and VCS standard and guideline, version 4.0 and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

Once the project is received by the assessment team, the members of the assessment team carried out:

- I. A desk review of the monitoring Report against the registered PD;
- II. Follow-up interviews with project participant;
- III. The resolution of outstanding issues and the issuance of the final verification report and opinion.

The prepared verification report and other supporting documents then undergo an internal quality control at the HQ (Accredited office) before being submitted to the VCS executive board.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. LGAI Technological Center, S.A. (Applus+ Certification) has developed a specific checklist customized for the project. The checklist demonstrates, in a transparent manner, the project criteria (requirements), discussion on each criterion by the assessment team, and the results from verifying the identified criteria.

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, LGAI Technological Center S.A. (Applus+ Certification) has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of LGAI Technological Center S.A. (Applus+ Certification).

The composition of audit team shall be approved by the LGAI Technological Center S.A. (Applus+ Certification) ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Dr. Atul Takarkhede	LA/TE	YES	YES	NA	YES
Mr. Denny Xue	TR	YES	YES	NA	NA

The complete list of CVs is included as Appendix 3 of this report.

Document review

The Monitoring Report version 1 submitted by the PP was reviewed against the approved methodology, registered PD, final validation report and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in this report below in appendix 1.

Follow-up interviews

A remote audit was conducted by LGAI Technological Center S.A. (Applus+ Certification) who performed interviews, telephone conferences with project stakeholders to confirm selected information and to resolve issues identified in the document review. The detail is provided in this report in the below sections.

Resolution of Clarification and Corrective Action Request

The objective of this phase of the Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ Certification positive conclusion on the Monitoring report. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the verification process, the concerns raised and responses given are summarized below in the Appendix 2.

The final MR Version 05 submitted by PP on 01/04/2021 serves as the basis for the final assessment presented. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country

Internal quality control

As final step of a verification of the final documentation including the final verification report and the checklist have to undergo an internal quality control by the technical review committee, i.e. each report has to be finally approved either by the head of the technical review committee

or the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one to avoid any conflict of Interest.

After confirmation of the project owners the positive verification opinion and relevant documents are submitted to the VCS secretariat through the VCS web-platform.

2.2 Document Review

The details of the document observed during the verification process are listed below in appendix 1 of this report.

2.3 Interviews

A remote audit was conducted for the project activity on 17/07/2020. Remote audit was conducted due to on going COVID-19 pandemic situation in the entire state of India. Taking into account the rules of relevant national and local authorities (local to the DOE offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the DOE and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return). Moreover, The VCS Program does not explicitly mandate site visits as part of the validation and verification process, only that VVBs must achieve a reasonable level of assurance on all validations and verifications (per Section 4.1.2 of the VCS Standard, v4.0).

The DOE has taken alternative measures to reach reasonable level of assurance and conducted remote audit through Skype/Telephone with site personal & consultant (refer section 2.3) with the PP representative. This is also in line with the COVID-19 travel guidance for projects of VERRA².

Technical details & metering/monitoring arrangement verified through onsite photographs/name plates and calibration certificates shared by PP. All the documents were cross checked to ensure conservative estimation of emission reduction.

During the remote audit, the PP representatives were questioned about the implementation of the project activity. Several topics like the verification of commissioning date of meters, the generation, recording, and monitoring of the data and the error accountability were discussed. To cross check the information provided by PP, various documents like technical specifications, commissioning certificates, PPA, JMR sheets, invoice, calibration certificates, s, etc. were also verified. The names of the persons interviewed during remote audit through Skype/9/telephonic interview is given below;

² <https://verra.org/covid-19-travel-guidance/>

Organization	Name of Persons/Designation	Topics discussed	Team Member
Jaiprakash Power Ventures Pvt Ltd	Mr. Ravi Chaddha, Vice President	Project activity implementation	Dr. Atul Takarkhede
	Mr. Jitender Sharma, HOD Operations	Operation, Calibration, O&M practices, JMR etc.	
	Mr. Vijay Kumar Sharma, GM, HR	LSC mechanism	
	Mr. Ranjit Singh, HOD, Mechanical	Mechanical maintenance	
	Mr. Amit Johri, HOD, Electrical Dept.	Electrical maintenance	
	Mr. Shamadas Choudhari, Vice President	Project description	
	Mr. D.P. Goel, Sr. Manager, Head Office	Invoicing practices	
EKI Energy	Mr. Prakash Kumar, Manager	MR, ER calculations etc.	
	Mr. Barun Sharma, GM	MR, ER calculations etc.	

2.4 Site Inspections

Duration of Remote Audit: 17/07/2020				
No.	Activity performed on-site	Site location	Date	Team member
1.	Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring. Assessment team also checked that whether the monitoring plan as described in the VCS PD is actually practised onsite. Also assessment team checked any change in host country criteria which may affect the baseline of the project activity.	Joshimath District- Chamoli, Uttaranchal (now Uttarakhand)	17/07/2020	Dr. Atul Takarkhede

2.5 Resolution of Findings

The objective of this phase of the verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for LGAI Technological Center S.A. (Applus+ Certification)'s positive conclusion on the project design and Monitoring report. The Corrective Action Requests and Clarification Requests raised by LGAI Technological Center S.A. (Applus+ Certification) were resolved during communications between the Client and LGAI Technological Center S.A. (Applus+ Certification) to guarantee the transparency of the validation process, the concerns raised and responses given are summarized below in the appendix 2.

The final MR Version 05 submitted by project owners on 01/04/2021 serves as the basis for the final assessment presented. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Project design document and Monitoring report	00	00	00
Description of project activity	00	02	00
Application of selected baseline and monitoring methodology and selected standardized baseline			
- Applicability of methodology and standardized baseline	00	00	00
- Deviation from methodology	00	00	00
- Clarification on applicability of methodology, tool and/or standardized baseline	00	00	00
Project boundary	00	00	00
Establishment and description of baseline scenario	00	00	00

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Demonstration of additionality	00	00	00
Emission reductions	00	01	00
Calibration details	00	01	
Monitoring plan	00	00	00
No Net harm assessment	00	00	
Local stakeholder consultation	00	01	
Others (please specify)	00	00	00
Total	00	05	00

The list of findings and their resolution is presented in appendix 2 of this report.

2.5.1 Forward Action Requests

This is 14th periodic verification of the project activity and no FAR was raised from previous and during this verification process.

2.6 Eligibility for Validation Activities

This section is not applicable for present verification

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

Project activity has not participated under other GHG program.

3.2 Methodology Deviations

The project activity used ACM0002 version 06 which is as per the registered CDM PDD and thus no deviation is sought regarding the methodology. The project complies with all the requirement of the methodology and thus deviation to the methodology is not a requirement for the present project activity.

3.3 Project Description Deviations

PP has applied a deviation in monitoring plan. During interview with the O & M personal it was found that electricity was imported during exigency from running of 800 kW DG sets installed at the project site. The same was monitored by an energy meter (DG Incomer) installed at the project site. PP has applied a deviation in monitoring plan to monitor the project emission due to import of electricity from DG sets. The parameters Electricity imported from the Diesel generator ($EG_{import,DG,y}$) and Emission factor for the diesel generator systems ($EF_{CO2,DG}$) have been included in the monitoring plan. . The inclusion of these parameters do not have any impact on the applicability of the methodology, additionality of the project activity, baseline scenario. The deviation is appropriately described in the VCS MR. Same is justified in the VCS MR and inline with the VCS standard. Same approach was also used during the previous verification of the project activity. Thus, the deviation is found correct & leads to conservative estimation of the emission reductions and hence acceptable to verification team.

3.4 Grouped Project

The project do not involve any addition of new project activity and thus the project do not falls under grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the remote audit (Skype video call), it was concluded that the project is implemented as per the instruction of the VCS PD and this is verified from the commissioning certificate. During the current monitoring period it was observed that no unforeseen situation evolved which can impact the operation of the project activity. The same was verified through the breakdown summary sheet of the project activity. Scheduled maintenance was carried out as per the instruction of the manufacturer and the same is acceptable to the assessment team.

Project location is confirmed by the assessment team through interview with PP and monitoring report. Assessment team also checked with the photograph of project site containing latitude and longitude of the project site and confirmed that the details as mentioned in the registered PD are correct. The latitude and longitude of the project activity is given below;

District	State	Latitude	Longitude
Chamoli	Uttaranchal (now Uttarakhand)	30° 32' - 30° 42'' N	79° 28' - 79° 38'E

The technical specifications have been verified with the photographs of sites and name plates as well as with the technical specifications of hydro turbine and also cross checked from the technical manual of the Manufactures. The technical specification the project activity is given below:

Parameter	Specifications
Hydrology	
Catchment area at barrage axis	1057.75 sq.km
Snow catchment	606.97 sq.km
Diversion Barrage	
Type	63 m long, 3 m High
Intake	2 in no., Discharge through intake : 63 Cumecs
Sedimentation Chamber	2 in no, size: 160m(L) x16m(W) x 10m(H), Particles of size 0.15 mm and above to be excluded
Head Race Tunnel (HRT)	
Length	11.343 m
Type of Section	4m dia, Modified Horse Shoe, circular

Power House	
Capacity	4 x 100 MW
Type	Underground
Size of P.H. Cavern	122m(L) x 18.5 m(W) x 38.6 m(H)
Size of Transformer Cavern	103 m(L) x 14m(W) x 22.5 m(H)
Tail Race Tunnel (TRT) and Unit TRT'S	
Length and Shape	1924 m long, 5.6 m x 5.7 m, D shape

The start date of the project activity (date on which the project reached financial closure) inline with the approved VCS PD³ are give below for all four units:

S. No.	Unit	Date of commissioning
1	Unit I	03/06/2006
2	Unit II	23/06/2006
3	Unit III	16/08/2006
4	Unit IV	30/09/2006

However, actual commissioning dates⁴ of all units of project activity is given below:

S. No.	Unit	Date of commissioning
1	Unit I	17/06/2006
2	Unit II	14/06/2006
3	Unit III	31/08/2006
4	Unit IV	13/10/2006

Assessment team checked the commissioning certificate of all units and confirms that the commissioning dates are correct.

³ The project is registered under VCS 2007 and thus as per VCS 2007; project start date is "Date on which the project reached financial closure".

⁴ Verified from commissioning certificates issued by third party statutory documents.

The assessment team confirmed through interview with O & M personal on Skype that there is no changes in to the project design during this monitoring period. It was found that the monitoring plan was implemented as per the requirement of the VCS PD & approved monitoring Plan and approved methodology ACM0002 version 06. The organisational role and responsibility as mentioned in the registered VCS PD is followed onsite. The calibration of energy meter is done as per the required frequency mentioned in the VCS PD. All the emergency preparedness as mentioned in the registered VCS PD is followed onsite and no discrepancies were found regarding the same.

The Project participant contribution from the project activity towards sustainable development in accordance to NCDMA as explained below:

Social well-being:

- The project helps in generating employment. The project activity leads to development in infrastructure in the region like development of roads and also may promote business with improved power generation.

Economic well-being:

- The project is clean technology investment in the area, thus leading to the overall development of the region and helping demand supply gap in the state.
- The project activity generates power using zero emissions solar 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.

Environmental well-being:

- The project activity 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

Technical well-being:

- The operation of project activity leads to promotion of hydro based power generation and encourages other entrepreneurs to participate in similar projects.

It was observed during the verification process is that project is not registered in any other mechanism nor rejected by any other GHG program around the world.

The project is not involved in any other form of GHG emission program and VERs generated from this verification will not be used for other trading program to avoid any kind of double counting. The same is confirmed by the PP during the verification site visit. Assessment team also conducted independent review regarding the same and found that the statement of the PP is accurate and project is not involved in any other kind of GHG trading for the present verifications/monitoring period.

The assessment team observed that the project is in line with the registered PD and applied methodology and thus no clarification/deviation is sought. CAR 01, CAR02 and CAR 03 were raised during the verification process and closed successfully. Please refer below Appendix 2 for the detail closure of the CAR

Assessment team confirms following during the verification site visit:

1. Start date of the project is 03/06/2006⁵ (as per VCS PD).
2. An undertaking letter dated: 09/04/2020 has been submitted by PP for double counting with any other GHG program. PP also has given a written declaration that project has not claimed other form of GHG credit for the concerned monitoring period.
3. Assessment team confirms that this is the 14th monitoring under VCS and covers the activity from 01/01/2013 to 02/06/2016(inclusive of both dates). Thus, VCS crediting period should be maximum of 10 years (fixed) till end date of crediting period. 03/06/2006 is the start date and 02/06/2006 will be the end date of the crediting period.
The GHG credits from 01/01/2013 to 02/06/ 2016 will be claimed under VCS only. At any point of time during the crediting period, the project proponent will abide by the “Double Counting”.
4. Assessment team checked and found that the Project proponent of the project activity is as below for the current monitoring period:

Organization name	Jaiprakash Power Ventures Limited
Contact person	R.K. Narang
Title	Director
Address	Sector 128, Noida-201304, Uttar Pradesh
Telephone	+91-120-4609000
Email	Rk.narang@jalindia.co.in

5. The quantified emission reduction calculation for the monitoring period is correct and conservative. Assessment team also compared actual VER with the estimated VER and found that the actual VER is 2,889,200 tCO₂e which is 29.14% lower than the estimated emission reduction 5,019,716 tCO₂e (1,468,106 tCO₂e/ 365 days*1248 days) during this monitoring period which is due to climatic conditions and low PLF attained by the wind power plant during the current monitoring period.

4.2 Safeguards

4.2.1 No Net Harm

No potential environment or socio-economic matter was found during the site visit. The project is renewable energy project and thus no negative impact observed onsite.

⁵ As per the definition of VCS Ver-2 Guidelines

The project activity promotes environmental and socio-economic well-being as it results in zero GHG emissions due to installation and operation of clean, renewable energy technology for electricity generation. The report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report clearly mentioned that hydro power project activity operations do not result in direct air pollution, noise pollution.

However, assessment team still conducted the No net harm assessment for some of the parameters and the result is described below:

SL.NO	Indicator	Assessment team opinion
1	Air quality	The project generates clean energy which replaces the fossil fuel intensive electricity generation. Also report on “Developmental Impacts and Sustainable Governance Aspects of Renewable Energy Projects” prepared by MNRE dated September 2013. This report clearly mentioned that hydro plant operations do not result in direct air pollution. Adequate measures were taken to mitigate the envisaged impacts like spraying water on the road side to reduce dust level, etc. This was confirmed by the local stakeholders. Therefore, it is validated that mitigation measures were robustly implemented on ground for air quality issues project will have a positive impact on air quality.
3	Soil condition	There are negligible impacts envisaged during operation of the project activity being run of river project. For mitigating the impacts during construction, various mitigation measures were taken which is validated from the plant records of PP and the interview with local villagers. It was also confirmed that, the vegetation done at site helps for soil erosion. The same is confirmed during the stakeholder meetings during onsite visit. Therefore, it can be concluded that the project has no effect on soil conditions during its operation because it has no waste coming out.
4	Biodiversity	During the validation site visit it was observed that the condition of ground vegetation will be gradually improved; No rare species has been found in the around area. The project site is not on the migration route of migratory bird. As Such large hydro plant do not have any obstruction in the path of migratory birds. Nor project is affecting aquatic life. With the implementation of Project, the greening water will be increased significantly; the biodiversity in the vicinity will be improved with the vegetation improvement.

SL.NO	Indicator	Assessment team opinion
		No negative impact envisaged.
5	Employment Generation	The project activity employed local population as skilled workers as well as security guards which were envisaged during the validation site visit. The personnel employed by the project activity are also provided trainings and exposed to various awareness programs therefore a positive indicator has been accepted.
6	Livelihood of the poor	The project is associated with infrastructure development like roads in the nearby areas and promoting economic activities like grants to local school and communities temples etc. Also, project employed local villagers as guards for the security of power project. Positive impact envisaged.

4.2.2 Local Stakeholder Consultation

All the stakeholders are happy with the implementation and operation of the project activity and no negative comments envisaged for the project activity. There was no change in project description from the VCS PD. Complaint/suggestion/feedback register is maintained at site as a part of ongoing communication with stakeholders in line with clause 3.16.17 of VCS Standard, ver. 4.0 and appropriate actions taken time to time by PP. Assessment team confirmed the same during the remote audit and document review i.e. grievance register etc.

4.3 AFOLU-Specific Safeguards

Not applicable

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the MR. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the monitoring plan of the VCS PD and MR.
Findings	CAR 04 was raised on this section and closed successfully. Please refer Appendix 2 for further details
Conclusion	<u>Baseline emission:</u> The baseline Emissions for a given year is calculated by multiplying the energy baseline (EB) with the regional grid emission factor of the grid. Formula Used:-

	$BE_y = EF_{CO_2,y} \times EG_y$ BE_y - are the baseline emissions due to displacement of electricity during the year y in tons of CO_2. EG_y - is the electricity supplied to the grid by the project activity during the year y in MWh, and $EF_{CO_2,y}$ - is the CO_2 baseline emission factor for the electricity displaced due to the project activity in during the year y in tons CO_2/MWh Grid emission factor: As per registered VCD PD, for actual calculation, the latest available data and the data for the corresponding year to calculate the baseline emissions. The latest data. Thus, using the latest official available CEA Baseline CO_2 database, Version 15.0 (Dec 2019) and Tool to calculate the emission factor for an electricity system, Version 07.0, the combined margin grid emission factor is calculated to be 0.9216 tCO_2e/MWh. The values of Operating Margin Emission factor ($EF_{grid,OM,y}$) and Build Margin Emission factor ($EF_{grid,BM,y}$) are sourced from the CEA CO_2 Baseline database, version 15 (Dec 2019) which is the latest version of the officially published data available at the time of submission of MR to DOE for verification. The value of $EF_{grid,OM,y}$ is calculated by PP using a 3-year generation-weighted average i.e. 0.9622 t/CO_2e/MWh. The Build Margin Emission factor($EF_{grid,BM,y}$) is directly sourced from the CEA CO_2 Baseline Database, Version 15 i.e. 0.8611 tCO_2/MWh. Combined margin CO_2 emission factor of Indian grid ($EF_{CO_2,y} = EF_{grid,CM,y}$) is thus calculated to be 0.9216 tCO_2/MWh. However, PP has used ex-ante fixed grid emission factor of 0.75 tCO_2e/MWh, taken from the CO_2 database for emission factors developed and published by the Central Electricity Authority (CEA) of India. This is deemed conservative considering the fact that the latest calculated combined margin emission factor (grid emission factor) is 0.9216 tCO_2e/MWh is higher than the ex-ante value. Thus, conservative value i.e. 0.75 tCO_2e/MWh used for calculation of emission reductions. The verification team has checked the entire monthly JMR report and invoices applicable for the monitoring period as per the project activity applied for verifications and found the monitoring parameter (EG_y), $EG_{import,DG,y}$) are monitored and recorded as per the monitoring plan in the registered VCS PD. Electricity supplied to the grid by the project activity during the year y (EG_y) by the project activity during the current monitoring period 3852752.85 MWh. . The net electricity supplied by project activity to grid is calculated by subtracting total electricity imported by project from grid from total electricity delivered by project to grid. The verification team has crosschecked the emission reduction sheet and monitoring report data with the JMR sheet and invoice bills and found all the
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	values are matching. <u>Project Emission:</u> Since the project activity is a run of river hydro power plant and doesn't result in new reservoirs or increase of existing reservoirs. However, during interview with the O & M personal it was found that electricity was imported during exigency from running of 800 kW DG sets installed at the project site. The same was monitored by an energy meter installed at the project site. PP has applied a deviation in monitoring plan to monitor the project emission due to import of electricity from DG sets. A parameter i.e. $EF_{CO_2,DG}$ i.e. electricity imported from the Diesel generator has been included in monitoring plan. The deviation leads to conservative emission reductions. Hence acceptable to verification team. The capacity of DG set was also verified to be 800 kW and hence as per applied methodology AMS-I.F, version 3 (table 2⁶) an emission factor of 0.80 tCO₂/MWh (for DG sets >200 kW) have been taken while calculating the project emissions, The total electricity imported by project activity from the diesel generator during this monitoring period was verified to be 449.68 MWh. An emission factor 0.8 tCO₂/MWh has been applied by the PP to account the project emissions. . This is default emission factor provided under approved methodology AMS-I.F, version 3 (table 2⁷) for DG sets having generation capacity more than 200kW which is appropriate in the context of the DG sets installed in the project activity. The total project emissions from the electricity consumption from DG set are 362 tCO₂ during the monitoring period. The assessment team has checked the metered data and plant log book data and the same have been found correct. The calculation approach was in line with the VCS PD. <u>Leakage:</u> As per registered PDD the leakage is zero. Thus, Emission Reductions are: The emission reductions (ER_y) by the Project activity during a given year y is the difference between baseline emissions (BE_y), project activity emissions (PE_y) and leakage, as follows $ER_y = BE_y - PE_y - L_y$ Thus, the GHG emission reductions have been quantified correctly inline with the VCS PD, applied methodology & deviation applied.
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⁶ <https://cdm.unfccc.int/UserManagement/FileStorage/YP1U4E0H976Z3WDMV2NGSTBLQIRCK5>

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the break down log for the monitoring period. During the verification site visit the energy meters are also checked. The Calibration details of the monitoring meters are also checked with calibration certificates.
Findings	CAR 05 was raised on this section and closed successfully. Please refer Appendix 2 for further details
Conclusion	The project activity has installed the (metering arrangement) latest state -of art monitoring and control equipment that measure, record and control the various monitoring parameters. Actual power generation data is also meters using power output meter at the substation. These meters record parameters including electricity exported & imported. Moreover, the meters are located at the HT side of the transformer and are of accuracy class of 0.2s for project activity applied for verification. These electricity meters are being used by state electricity board for JMR (Joint Meter Reading) electricity generation statements. The Net electricity supplied to the grid is then calculated from export and import values. The electricity Export, Import and Net electricity exported to the grid are cross checked from the invoices raised to respective state electricity board which is in line with Methodology requirement for large scale project activity. Hence assessment team confirmed that the value of net electricity exported to the grid as used in emission reduction calculation is correct. Electricity supplied to the grid is metered by main meters and Check meters as per details given below: Main meters: Type of Meter: Energy Meters (Line I & Line II) Serial Number: APM20005 (Line I) and APM 20004 (Line II) Check Meters: Serial Number: APM2007 (Line I & APM 20006 (Line II) Accuracy; 0.2% Calibration frequency: Quarterly The electricity import from the grid is metered by Energy Meter as per details given below: Type of Meter: Energy Meter Accuracy Class: 0.5% Serial Number: 619137 Calibration Frequency: Yearly The main meter reading is taken jointly on a fixed day of every month for the preceding month at the delivery point and signed by the representatives of

	state utility and PP. In the event of failure of main meter, the check meter will be used in monitoring the electricity data. Calibration of all the meters is done as per the VCS PD. However, verification team found that there is delayed in calibration of meters which records the export and import of electricity between April 2013 to April 2014 and not covered in the calibration validity, therefore 0.2% error factor have been applied to the same months as observed error was less than permissible error i.e. 0.2%. The details of calibration of the meters are mentioned in Appendix 5 of this report. It is reported that the data will be kept for 2 years following the end of the crediting period or till the last issuance of VERs for the project activity whichever occurs later. The responsibilities and authorities of project management, data handling and recording, measurement methods and QA/QC procedure have been systematically established and formalized and the same was verified during the site visit. Remote audit and interview with site personnel also confirms that the operational and organizational chart as mentioned in VCS PD is as per the site practice and thus assessment team confirms that the details are correct. The break down log is checked and found that the plant undergone scheduled maintenance and break down. No unforced error observed. Thus, during verification assessment found evidences in sufficient quantity and appropriate in terms of quality to determine the GHG reductions.
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4.6 Non-Permanence Risk Analysis

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Not applicable	Not applicable	Not applicable	Not applicable

5 VERIFICATION CONCLUSION

Applus+ Certification has been engaged by Jaiprakash Power Ventures Ltd to perform the verification of the “Vishnuprayag Hydro-electric Project (VHEP) by Jaiprakash Power Ventures Ltd. (JPVL)”

The management of the project participant/owner is responsible for the preparation of the GHG emissions data and the reported/estimated GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the VCS PD and MR and the approved methodology ACM0002 version 06.

Our Verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board and VCS Standard version 4.0. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is operated as planned and described in the project document;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Monitoring Report is as per the PD
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately except delayed calibration is addressed in line with para 366 (a) of the “CDM validation and verification standard for project activities, Version 02”;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.
- A reasonable level of assurance was achieved during the verification.
- No limitation observed for the present verification

Verification period: From 01/01/2013 to 02/06/2016 (first and last date included).

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01/01/2013 to 31/12/2013	408,171	161	0	408,171
01/01/2014 to 31/12/2014	1,222,880	126	0	1,222,880
01/01/2015 to 31/12/2015	927,129	23	0	927,129
01/01/2016 to 02/06/2016	331,382	52	0	331,382
Total	2,889,562	362	0	2,889,200

The estimated emission reduction to be achieved from the project activity for the current monitoring period is 5,019,716⁸ tCO₂e, whereas actual emission reductions achieved are 2,889,200 tCO₂e, which is 42.44% lower than the estimated emission reductions. This is due to climatic conditions and low PLF attained by the plant during the current monitoring period.

⁸ This estimation is based on annual (365 days) estimation of ER and current monitoring period days i.e. 1248 days.

APPENDIX I: DOCUMENTS REVIEWED DURING VALIDATION AND VERIFICATION

No.	Author	Title	References to the document	Provider
1.	NA	Commissioning certificate	Commissioning of the Hydro turbine unit	Project participant
2.	NA	Contract of the other entity with the DOE	Contract of the other entity with the DOE	Project participant
3.	NA	Technical specifications	Technical specifications of turbines	Project participant
4.	NA	Power Purchase agreement for the project activity	Manufacturer technical specifications	Project participant
5.	NA	VCS Project Description	Dated:10/08/2008	Project participant
6.	NA	Initial Monitoring report Revised Monitoring report Revised Monitoring report Revised Monitoring Report Final Monitoring Report (VERRA Review)	Version 01, dated 10/07/2020 Version 02, dated 30/07/2020 Version 03, dated 14/08/2020 Version 04, dated 25/08/2020 Version 05, dated 01/04/2021	Project participant
7.	NA	Emission Calculation sheet	Version 1, dated 10/07/2020	Project participant
8.	NA	Emission Calculation sheet	Version 02, dated 28/07/2020 Version 03, dated 14/08/2020 Version 04, Dated 25/08/2020	Project participant
9.	NA	Tools/ guidelines used in the project activity - UNFCCC Methodology: ACM0002 version 06 - VCS verification report template Version 4.0 - VCS Standard, version 4.0	UNFCCC CDM web site VERRA website	UNFCCC & VERRA

No.	Author	Title	References to the document	Provider
10.	NA	Calibration details of the project activity undergoing verification	Calibration certificates	Project participant
11.	NA	JMR records+ Invoices for the complete monitoring period	JMR copies Invoices for the complete Monitoring period	Project participant
12.	NA	PPA Agreement	Power purchase Agreement between Project Proponent & State Utility/buyer	Project participant
13.	NA	Break down details of the complete monitoring period	Log Sheet	Project participant
14.	NA	VCS Declaration	Declaration dated 09/04/2020 from PP for Participation under Other GHG Programs	Project participant

APPENDIX 2: CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS (CAR/CL/FAR)

Project Implementation Status

CAR ID	01	Section no.	4.1	Date: 28-July-2020
Description of CAR				
During review of monitoring report following inconsistencies observed: 1. Monitoring period dates are not clear about inclusion of start and end dates. Correction sought. 2. All sections of the MR are not completed inline with guideline to complete monitoring report, VCS version 04. Corrections sought. 3. PP requested to submit copies of commissioning certificates & PPA.				
Project participant response				Date: 30-July-2020
1. Both Start day and end date is included in this verification. Clarification added. 2. Relevant section have been completed in the MR 3. Commissioning certificate and PPA is being provided with this submission.				
Documentation provided by project participant				
Monitoring period V02, Commissioning certificate and PPA				
DOE assessment				Date: 10-August-2020
1. Monitoring report have been updated now and both first & last days are included in monitoring period. Start date of this monitoring period is found inline with previous verification period. CAR thus closed. 2. Monitoring report's all sections have been now completed inline with the guidelines. CAR closed. 3. Commissioning certificate for Unit 4 and PPA have been submitted. Commissioning certificates for Unit I to Unit III yet pending. CAR open.				
Project participant response				Date: 14-August-2020
3. Commissioning certificate for Unit I to Unit III is being provided with this submission.				
Documentation provided by project participant				
Commissioning certificate for I to III units				
DOE assessment				Date: 19-August-2020

PP have submitted supporting document for the commissioning of the Unit I to Unit III also. CAR closed.

CAR ID	02	Section no.	4.1	Date: 28-July-2020
Description of CAR				
As per section 1.9 of the VCS MR, the project is not participated in other GHG program and has not intended to pursue credits from other GHG program for the concerned monitoring period. Supporting documents and details regarding the same is missing in the MR. Also, PP needs to justify whether REC benefits is taken for the present Monitoring period covered under VCS. Corrective action is sought for the same. PP is requested to submit an undertaking for no any double accounting for current monitoring period and project activity is not participated any other GHG program other than VCS.				
Project participant response				Date: 30-July-2020
PP is not claiming REC benefits, its can be verified from the accredited generated list of REC registry of India. https://www.recregistryindia.nic.in/index.php/publics/accredited_regens No double counting declaration is being provided.				
Documentation provided by project participant				
Declaration letter				
DOE assessment				Date: 10-August-2020
PP have submitted declaration for no double counting of the emission reductions achieved. Also from REC registry it was confirmed that project is not claiming REC benefits. CAR closed.				

CAR ID	03	Section no.	4.2.2	Date: 28-July-2020
Description of CAR				
Details of ongoing stakeholders consultation mechanism missing in section 2.2 of the MR inline with VCS guidelines to complete MR. Corrections sought. Further, PP requested to submit records of ongoing local stakeholder consultation including grievance register.				
Project participant response				Date: 30-July-2020

Grievance register copy and ongoing stakeholder consultation mechanism is being updated. Photographs of meeting conducted is being provided.	
Documentation provided by project participant	
Grievance register and Meeting photographs	
DOE assessment	Date: 10-August-2020
Ongoing LSC section updated appropriately, however, grievance/complaint register copy, LSC communication meeting MoMs etc. missing in the submission. CAR open.	
Project participant response	Date: 14-August-2020
Copy of Grievance register and MoMs are being submitted with this submission.	
Documentation provided by project participant	
Grievance Register	
DOE assessment	Date: 19-August-2020
PP has submitted grievance register and MoMs for the periodic feedback meetings have been submitted by PP. CAR thus closed.	

Accuracy of GHG Emission Reduction and Removal Calculations

CAR ID	04	Section no.	4.4	Date: 28-July-2020
Description of CAR				
PP requested to submit copies all JMRs and invoices for the complete monitoring period. Further, PP also requested to submit ER sheet for the project activity. Moreover, MR is not complete for the values of the monitored parameters. Corrections sought				
Project participant response				Date: 30-July-2020
JMR and Invoices is being submitted along with updated ER sheet.				
Documentation provided by project participant				
MR V2, ER V2, JMR and Invoices				
DOE assessment				Date: 10-August-2020

JMRs for July 2013 to March 2014, July & August 2015 are missing. Export value not matching for June 2013, Export & import for April 2014, Export & import for June 2015, Export for September 2015. Further, PP requested apportion the June 2016 generation based on the daily generation data of the plant for appropriateness. Moreover, PP requested to rounddown baseline emissions and roundup project emissions for conservative estimation. CAR open	
Project participant response	Date: 14-August-2020
The values have been updated to the ER sheet as the plant was not operational and the generation values is zero. June 2016 has been apportionate using the daily generation data. Also, the rundown and roundup formulas have been applied.	
Documentation provided by project participant	
Revised ER sheet	
DOE assessment	Date: 19-August-YYYY
PP have submitted revised ER sheet with corrected Export & Import data inline with the JMRs as well as baseline emissions are rounddown & project emissions are roundup for conservativeness. ER sheet found correct. CAR closed.	

Quality of Evidence to Determine GHG Emission Reductions and Removals

CAR ID	05	Section no.	4.5	Date: 28-July-2020
Description of CAR				
PP requested to submit copies of the calibration certificates and meter change MoM/certificate for meter change if any, covering complete monitoring period.				
Project participant response				Date: 30-July-2020
Calibration records covering the monitoring period is being provided.				
Documentation provided by project participant				
Calibration Records				
DOE assessment				Date: 10-August-2020
PP have submitted the requisite calibration records and found inline with information in MR. further, error factor for the period April 2013 to April 2014 have been applied appropriately. CAR closed.				

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Lead Auditor/Technical Expert	OR	Takarkhede	Atul	TQC-Outsourced entity	Yes	Yes	Yes	Yes

Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer (TR)	EI	Xue	Denny	Applus+ Certification
2.	Approver	IR	Calle	Agustín	Applus+ Certification

Short CVs of the Team:

1. Dr. Atul Takarkhede counts with 9 years of experience in field of Environmental Auditing, consulting and accreditation. He is an Expert in ISO 9001-14001, CO2/GHG Reporting, Carbon Foot Print, Energy, Water and Waste Management Reporting for organizations environmental performance. His professional portfolio is mainly related with carrying out EIA, conducting QA/QC of EIA Reports; Conducting Environmental/water Audits; NABET requirements appliance. Furthermore, he counts with solid experience on CDM-VCS-GS consultancy and auditing. He has Ph.D. (Environmental Science) from Institute of Science, RTM Nagpur University, Nagpur, and he has already published different technical reports related to environmental science.

2. Denny Xue has a Bachelor's Degree on Thermal Energy Engineering and Master's Degree on Environmental Engineering. He has more than 10 years of experience on CDM project development. Before he joined Applus+ LGAI, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development. He is working with Applus+ since 2011 carrying out Validation and verification for CDM/GS/VCS project under scope 1 and 13 as auditor, lead auditor, technical expert and technical reviewer.

APPENDIX 4: ABBREVIATIONS

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CEA	Central Electricity Authority
CL	Clarification request
CM	Combined Margin
CMS	Central Monitoring system
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming potential
HPSEB	Himachal Pradesh State Electricity Board
RBI	Reserve Bank Of India
PP	Project Participant

APPENDIX 5: CALIBRATION DETAILS

Details of Meter Calibration:

Meter Details	Meter Serial Number	Previous Calibration	Subsequent Calibrations	Accuracy Class
Line I- Main Meter	APM 20005	31/03/2012 & 30/06/2012	31/01/2013, 31/03/2013, 30/04/2014, 30/06/2014, 30/09/2014, 31/12/2014, 31/03/2015, 30/06/2015, 30/09/2015, 31/12/2015, 31/03/2016, 30/06/2016, 30/09/2016 and 31/12/2016	0.2
Line I- Check Meter	APM 20007	31/03/2012 & 30/06/2012		0.2
Line II- Main Meter	APM 20004	31/03/2012 & 30/06/2012		0.2
Line II- Check Meter	APM 20006	31/03/2012 & 30/06/2012		0.2
DG Incomer	619139	13/01/2012 & 25/05/2012	31/01/2013, 12/11/2013, 14/08/2014 & 06/07/2015	0.5
Grid Incomer	619137	17/12/2011 & 03/05/2012	31/01/2013, 12/11/2013, 13/08/2014, 07/07/2015 & 09/02/2016	0.5
Master Meter	29993	07/09/2012	22/03/2013, 26/03/2014, 03/09/2014, 16/03/2015, 07/10/-2015, 29/03/2016 & 22/09/2016	0.2

The calibration frequency of meters are verified with the calibration certifies it was found that calibration of meter which records the export and import of electricity was not calibrated as per calibration frequency during April 2013 to April 2014. Hence, PP has applied the error factor in export and import of electricity for the same period. Further, master meter is not part of the registered monitoring plan. .

APPENDIX 6: REMOTE AUDIT & SOME SITE PHOTOGRAPHS











