Verification and certification report form for CDM project activities

(Version 01.0)

VERICATION AND CERTIFICATION REPORT	
Title of the project activity	12 MW hydropower plant in Bhandardara inMaharashtra, India
Reference number of the project activity	0430
Version number of the verification and certification report	02.0
Completion date of the verification and certification report	26/02/2017
Monitoring period number and duration of this monitoring period	Monitoring period number: 01 Period: 27/07/2015 – 31/10/2016 (both dates are included)
Version number of monitoring report to which this report applies	03
Crediting period of the project activity corresponding to this monitoring period	Crediting period number: 03 (renewal) 27/07/2015 – 26/07/2022
Project participant(s)	• Dodson–Lindblom Hydro Power Private Limited (DLHPPL) • Statkraft Markets GmbH • WEACT PTY LTD.
Host Party	India
Sectoral scope(s), selected methodology(ies), and where applicable, selected standardized baseline(s)	Sectoral scope : 1- Energy industries (renewable - / non-renewable sources Selected Methodology: AMS-I.D. Version 18 – "Grid connected renewable electricity generation" Selected standardized baseline: N/A
Estimated GHG emission reductions or net anthropogenic GHG removals for this monitoring period in the registered PDD	44,448 tCO_2e
Certified GHG emission reductions or net anthropogenic GHG removals for this monitoring period	42,996tCO_2e
Name of DOE	LGAI Technological Center, S.A. (Applus)
Name, position and signature of the approver of the verification and certification report	Juan Sendín Caballero B.U. Systems Certification 

SECTION A. Executive summary

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LGAI Technological Center, S.A. (hereafter referred to as Applus+ LGAI) has been contracted by Dodson–Lindblom Hydro Power Private Limited (DLHPPL) to perform the sixth periodical verification of Hydroelectric power generation project in Maharashtra, India (UNFCCC Ref. No. 0430) applying the methodology AMS-I.D Version: 18 /2.3/. The management ofDLHPPLis responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.

A desk review and a site visit have been conducted to verify the data submitted in the monitoring report. Applus+ LGAI confirms the following has been reviewed:

(a) The revised approved PDD/1.3/, including the monitoring plan and the corresponding validation report;
(a) Monitoring report of previous monitoring period as well as corresponding verification report;
(b) Monitoring report of this monitoring period;
(c) The applied monitoring methodology;
(d) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
(e) All information and references relevant to the project activity's resulting in emission reductions.

The project activity involves the generation of electricity by a 12 MW hydroelectric power projectat the foot of a hill adjacent to the Bhandardaradam.The water released from the Bhandardara reservoir for irrigation purposes is utilized by the project activity to generate electricity. The generated electricity, after auxiliary consumption, is exported to state electricity grid of the Maharashtra State Electricity Transmission Company Ltd (MSETCL). The electricity generated by the Project is delivered to the grid through a 132 kV line.

This is a renewable energy generation project which can replace the electricity normally generated by a fossil fuel dominated grid connected to power plants. The project activity is located at Bhandardara village of Ahmadnagardistrict in Maharashtra, India. The Project activity was originally set up by GOMID and later handed over to DLHPPL on a lease, own, operate and transfer basis.

Applus+ LGAI confirms that the project is implemented in accordance with the validated and approved revised PDD. The monitoring plan complies with the applied methodology AMS-I.D Version: 18 /2.3/and the monitoring have been carried out in accordance with the monitoring plan. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information reviewed and evaluated Applus+ LGAI confirms that the implementation of the project has resulted in 42,996 tCO_2e emission reductions during period27/07/2015 – 31/10/2016(both days included).

SECTION B. Verification team, technical reviewer and approver

B.1. Verificationteammember

No.	Role	L / R	Last name	First name	Affiliation	Involvement in

					(e.g. name of central or other office of DOE or outsourced entity)	Desk review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader	OR	Ahirwar	Vivek Kumar	GCEES	Y	Y	Y	Y
2.	Technical Expert	OR	Ahirwar	Vivek Kumar	GCEES	Y	Y	Y	Y
3.	Auditor	OR	Thakur	Ajay Singh	GCEES	Y	Y	Y	Y

B.2. 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	IR	Cabanas	Miquel Sitjes	Applus+ LGAI
2.	Technical Reviewer	IR	Vega	Natalia Rodrigo	Applus+ LGAI
3.	Approver	IR	Caballero	Juan Sendín	Applus+ LGAI

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

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.	**Manual adjustment of otherwise automatically recorded activity levels:** This error may be due to manually recording of actual readings in-to original records.	Low	Monitoring Equipment e.g. Energy Meters have totalize which reduce the chance of error as initial readings and final readings can be cross –check in every records. For measurement of quantity of fuel (diesel); measurement carried out using scale and same time recorded in log book/3.6/. The total quality can be cross-checked form purchase bill/3.5/. The plant data was verified by plant manager in regular interval, so low potential risk of errors, omissions or misstatements.	100 per cent of the data and information was checked from log book/3.6/, JMR/3.3/ record book/3.4/ and cross-checked from purchase bill/3.5/ .
2.	**Human error in the quantification of emissions.** This error may be due to transfer of monitored data in-to Emission Reduction calculation sheet/4.2/ for calculation of actual emission reduction archived during monitoring period.	High	The monitoring data is transfer manually, so there is high potential risk of errors/errors, omissions or misstatements.	100 per cent of the data and information was checked from log book/3.6/, JMR/3.3/ record book/3.4/ and cross-checked from purchase bill/3.5/.

C.2. Consideration of materiality in conducting the verification

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The project is a small-scale CDM project activity achieving total emission reductions of <300,000 tons of CO_2e per year; as such, a 5 per cent materiality threshold is applied as per VVSv09.0 §§ 361(d). However, to avert high risk associated with human error in the quantification of emission, 100 per cent of the data and information was checked from log book/3.6/, JMR/3.3/ record book/3.4/ and cross-checked from purchase bill/3.5/and were found to be consistent. Therefore, Applus+ LGAI confirms that 100 per cent of the data and information was checked and verified value is free from any potential error / omission /misstatement and is accordance to verification plan

SECTION D. Means of verification

D.1. Desk review

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The Monitoring Report version 1.0 dated 28/11/2016/1.1/ submitted by the PP was made publicly available on the UNFCCC website before the verification activities started. The published MR/1.1/ was assessed based on all the relevant documents. The aim of the assessment in the desk review was to:

- verify the completeness of the data and the information presented in the MR;
- check the compliance of the MR with respect to the monitoring plan depicted in the revised approved PDD and verify that the applied methodology was carried out. Particular attention to the frequency of measurements, the quality of the metering equipment including calibration requirements, and the quality assurance and quality control procedures was paid;
- evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

A complete list of documents reviewed or referenced is available in Appendix 3 of this report.

D.2. On-site inspection

Duration of on-site inspection:29/12/2016 to 30/12/2016				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	Confirm the implementation and operation of the project;	DLHPPL, Bhandardara village, Ahmednagar district, Maharashtra	29/12/2016	Vivek Kumar Ahirwar
2.	Review the data flow for generating, aggregating and reporting the monitoring parameters;	DLHPPL, Bhandardara village, Ahmednagar district, Maharashtra	29/12/2016	Vivek Kumar Ahirwar
3.	Confirm the correct implementation of procedures for operations and data collection;	DLHPPL, Bhandardara village, Ahmednagar district, Maharashtra	29/12/2016	Vivek Kumar Ahirwar
4.	Cross-check the information provided in the MR documentation with other sources;	DLHPPL, Bhandardara village, Ahmednagar district, Maharashtra	29/12/2016	Vivek Kumar Ahirwar
5.	Check the monitoring equipment against the requirements of the PDD and the approved methodology, including calibrations, maintenance, etc.;	DLHPPL, Bhandardara village, Ahmednagar district, Maharashtra	30/12/2016	Vivek Kumar Ahirwar
6.	Review the calculations and assumptions used to obtain the GHG data and ER;	DLHPPL, Bhandardara village, Ahmednagar district, Maharashtra	30/12/2016	Vivek Kumar Ahirwar
7.	Indentify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.	DLHPPL, Bhandardara village, Ahmednagar district, Maharashtra	30/12/2016	Vivek Kumar Ahirwar

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Jadav	R.V.	Deputy General Manager, DLHPPL	29/12/2016 - 30/12/2016	Project Activity Description, implementation and operation of the project. Electricity Generation Records (monthly energy statements, Invoices and break up sheets) Reliability & accuracy of readings considered for emission reduction calculations, Calibration procedure	Vivek Kumar Ahirwar
2.	Gurao	B.T.	Plant Manager, DLHPPL	29/12/2016 - 30/12/2016	Monitoring and measuring system, Collection of measurements, Observations of established practices and Data Verification of monitoring parameters, Monitoring data and records	Vivek Kumar Ahirwar
3.	Garade	V.K.	Senior Engineer, DLHPPL	29/12/2016 - 30/12/2016	QA/QC procedures, data management, internal audits to maintain data quality & reliability, maintenance Practices. Consideration of monitoring period, monitoring methodology, project documentation and emission reduction calculations	Vivek Kumar Ahirwar
4.	Sarakte	A.L.	Shift Engineer, DLHPPL	29/12/2016 - 30/12/2016	Monitoring Data & Records	Vivek Kumar Ahirwar

D.4. Sampling approach

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Not Applicable, as all monitoring data as reported in MR /1.8/ and ER/4.2/ were verified and checked from actual records.

D.5. Clarification requests, corrective action requestsand forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	-	02	-
Compliance of the project implementation with the registered PDD	-	-	-
Post-registration changes	-	-	-
Compliance of the monitoring plan with the monitoring methodology including applicable tool and standardized baseline	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	01	-
Compliance with the calibration frequency requirements for	-	-	-

measuring instruments			
Assessment of data and calculation of emission reductions or net removals	-	-	-
Others (please specify)	-	-	-
Total	-	03	-

SECTION E. Verification findings

E.1. Compliance of the monitoring report with the monitoring report form

Means of verification	The Monitoring Report version 3/1.8/ is compliant with Monitoring Report form (Version 05.1) /2.4/ and guidance as provided by UNFCCC.Applus+ LGAI considers that the attachment "Instructions for filling out the monitoring report form" at the end of template "Monitoring report form (Version 05.1)" /2.4/ has been followed. Relevant information was provided by the project participant in the applicable Monitoring Reportsections.
Findings	**Corrective Action Request No. 1 :** The CAR#1 was raised as requested to the PP is requested to provided details of the number of interruptions hours in monitoring report as mentioned in section C of MR. In response, the PP has provided the incorporate the details of the number of interruption hours under "Trippings due to grid failure" in section C of the revised MR and same was checked and found to be correct, hence accepted. Based on review of response and revised MR/1.2/, assessment team confirm that MR is appropriately correct and hence accepted. Hence, the CAR#1 was closed satisfactorily. **Corrective Action Request No. 3 :** The CAR#3 was raised as requested to the PP to clarify the followings: 1. The PP was requested to correct the end date of 3rd CP in section A.5 of MR. In response, the PP has corrected the end date of the third Crediting Period in section A.5 in revised MR Version 03. Same was checked and found to be corrected, hence accepted. 2. The PP was requested to clarify why the changes to registered PDD in section B.2.6 of the MR. In response, the PP has clarified that there was a change to the registered PDD witnessed during the first verification of the 2nd crediting period which was approved by CDM EB on 16/10/2010. Thereafter, there is no change to project design during the current monitoring period. Now the same is included in section B.2.6 of the revised MR version 03. This is found to be correct, hence accepted. 3. The PP is requested to include appropriate value in section E.4 of the MR as same is left blank. In response, the PP has provided appropriate values in the section E.4 of the revised MR Version 03. Same was found to be correct, hence accepted. Based on review of response and revised MR/1.8/, assessment team confirm that MR is appropriately correct and hence accepted. Hence, the CAR#3 was closed satisfactorily. (Further details have been provided in Appendix 4 of this verification report)
Conclusion	Applus+ LGAI confirms that the monitoring report is in compliance with the relevant valid form and instructions therein as accordance to VVSv09.0 §§ 381-382.

E.2. Remaining forward action requests from validation and/or previous verification

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This is first periodic verification of third crediting period of the project activity. There is no pending issue and forward action requests from previous verifications and validation as confirmed with previous verification reports/1.5/ and validation report /1.4/.

E.3. Compliance of the project implementation with the registered project design document

Means of verification	The project activity was fully implemented according to the description presented in the revised approved PDD /1.3/. The assessment team confirms, through the visual inspection that all physical features of the proposed CDM project activity including data collecting systems and storage have been implemented in accordance with the revised approvedPDD /1.3/. The implementation status of the project was verified and it was found that the project activity was already implemented, commissioned and is in continuous operation since its starting date of operation i.e. 27/07/2001. The same is verified through the commissioning certificate/3.1/. During the site visit, the assessment team verified the technology used and the capacity of equipments implemented at the project site through physical inspection and it can be confirmed that there are no changes in the project design against the revised approved project design document. No events or situations that may impact the applicability of the methodology occurred during this monitoring period, which was confirmed by checking the operational/shut down details /3.7/ and interviewing the PP. There were no changes in the project activity from the previous verification /1.5/. The monitoring report version 03 dated 24/02/2017 /1.8/ for the first monitoring period (from 27/07/2015 – 31/10/2016) is in compliance with the monitoring plan of the revised approved PDD /1.3/. The data and variables provided in the monitoring report is the same as that stated in the monitoring plan of the revised approved PDD /1.3/. By comparing the actual ER claimed in this monitoring period with the estimate in the revised approvedPDD/1.3/, the actual emission reductions (42,996 tCO_2e) are lower than what is stated in the PDD (i.e. 44,448tCO_2e).Thus, the actual emission reduction is approximately 3.27% lesser than the estimated value. The variation is mainly due to the lower PLF because of no-generation months and also the breakdown and outage of the plant during current monitoring period.The assessment team noted that the project power plant operation is based on the water release done by the Government of Maharashtra Water Resources Department (GOMWRD), who has total control over the discharge of water from the dam which is subsequently used mainly for the irrigation and drinking purpose. The Project participant, therefore, do not have any control over the discharge of water from the dam. Hence only on discharge of water from the dam the plant could operate.Same was checked and found to be correct, hence accepted. The Authorized Participants as WEACT PTY LTD(fromAustralia) and Statkraft Markets GmbH(fromSwitzerland) also involve indirectly in the project as verified from UNFCCC project activity view page /1.5/ under section “Other Parties Involved”. The approval and authorization of respective party are made available UNFCCC project activity view page /1.5/ and same was verified and found to be correct and this was reported on first page of monitoring report /1.8/, hence accepted.
Findings	No non-conformability was observed during assessment for implementation of project activity against the description presented in the approved revised PDD/1.3/. Therefore no finding was raised.
Conclusion	Applus+ LGAI confirms that the implementation of project activity is in compliance with the CDM requirement stipulated under VVSv09.0 §§ 383-385.

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline

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There are no temporary deviations from the monitoring plan/1.3/ or applied methodology/2.3/ during the current monitoring period. It was verified and confirmed from the Monitoring Report/1.8/, revised approved PDD/1.3/, UNFCCC project webpage/1.5/ and on-site verification/3.9/ /3.10/.

E.4.2. Corrections

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There are no corrections identified during the current monitoring period. It was verified and confirmed from the Monitoring Report/1.8/, revised approved PDD/1.3/, UNFCCC project webpage/1.5/ and on-site verification/3.9/ /3.10/.

E.4.3. Changes to the start date of the crediting period

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There are no changes to the start date of crediting period identified during the current monitoring period. It was verified and confirmed from the UNFCCC project webpage/1.5/.

E.4.4. Inclusion of a monitoring plan to a registered project activity

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There is no inclusion of a monitoring plan identified during the current monitoring periodwas verified and confirmed from the Monitoring Report/1.8/, revised approved PDD/1.3/, UNFCCC project webpage/1.5/ and on-site verification/3.9/ /3.10/.

E.4.5. Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline

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No changes from the monitoring plan as described in the revised approved PDD/1.3/ are identified during the current monitoring period. The same is verified during the site visit and found to be correct and accepted.

E.4.6. Changes to the project design of a registered project activity

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During the 1st periodic verification of the registered project activity for thesecond crediting period, it was observed that the operation of the projectactivity was not exactly as per the description in the registered PDD/1.6/. Asper the registered PDD/1.6/, the project activity was expected to operate at itsinstalled rated capacity of 12 MW. However, daily generation records ofthe project activity indicated that the plant had operated at a capacity thatexceeded its rated capacity, with the maximum output reaching up to14.7MW. Hence, a notification for changes in project activity was submitted to EB as accordance to the Annex 66 and 67 of EB 48 which was approved on16/10/2010 by EB/1.5/.

There is no change to project design of the registered project activity identified during the current monitoring period. The same is verified during the site visit /3.9/ /3.10/ and found to be correct and accepted.

E.4.7. Types of changes specific to afforestation and reforestation project activities

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Not Applicable.

E.5. Compliance of monitoring plan with the monitoring methodology including applicable tool and standardized baseline

Means of verification	The review of applied methodology and monitoring plan establishes that the monitoring plan presented in the PDD/1.3/ is consistent the approved AMS-I.D. Version 18 – "Grid connected renewable electricity generation" /2.3/.
Findings	No non-conformability was observed during assessment for monitoring plan against applied monitoring methodology. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the monitoring plan is in accordance with the approved methodology /2.3/ and correctly applied by the registered CDM project activity and VVS v09.0 §§ 386-388 have been met.

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

CO_2 Emission factor of grid (EFy) = $EF_{CO2,grid,\ y}$

Means of verification	The parameter $EF_{CO2,grid,\ y}$ fortheNEWNE grid is been referred from the revised approved PDD/1.3/ which is calculated in line with the guidance provided in the selected methodology ex-ante. The values used for calculation of the baseline emission factor using combined margin approach are considered from an authorized source i.e. CEA database version 10.0/8.1/ applying default weights of 0.25 for operating margin and 0.75 for build margin .The reported value is 0.6890tCO_2/MWh which is been verified and considered appropriately in the MR/1.8/ and the ER calculation excel sheet/4.2/. The emission factor of the third crediting period of the Project has been determined ex-ante during renewal of third crediting period. The emission factor used in the monitoring report has been verified against the PDD/1.3/ and found them to be consistent.
Findings	No non-conformability was observed during assessment of Data and parameters fixed ex ante or at renewal of crediting period. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the data and parameters fixed ex ante have been correctly listed. Parameters fixed ex-ante for required parameters have been verified by checking the information flow and in compliance with the monitoring plan of the revised approvedPDD/1.3/ and hence, the requirement of VVS v09.0 §§ 392-393 have been met.

Net Calorific values of diesel (NCV_{diesel})

Means of verification	The parameter NCV_{diesel};the Net Calorific value is been derived ex-antefrom an authorized source i.e. IPCC default values at the upper limit of uncertainty at a 95% confidence intervals as provided in Table 1.2 of Chapter 1 of Vol 2 (Energy) of the 2006 IPCC guidelines on National GHG inventories /2.5/ The reported value is 43.30GJ/Tonwhich is been verified and considered appropriately in the MR/1.8/ and the ER calculation excel sheet/4.2/.
Findings	No non-conformability was observed during assessment of Data and parameters fixed ex ante or at renewal of crediting period. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the data and parameters fixed ex ante have been correctly listed. Parameters fixed ex-ante for required parameters have been verified by checking the information flow and in compliance with the monitoring plan of the revised approved PDD/1.3/ and hence, the requirement of VVS v09.0 §§ 392-393 have been met.

CO2 emission factor of diesel (EF_{CO2_diesel})

Means of verification	The parameter EF CO2_diesel, the value of emission factor of $CO_2$is been derived ex-ante from an authorized source i.e. Chapter 1 of Vol 2 (Energy) of the 2006 IPCC guidelines on National GHG inventories /2.5/ The reported value is 0.0748 tCO_2e/GJwhich is been verified and considered appropriately in the MR/1.8/ and the ER calculation excel sheet/4.2/.
Findings	No non-conformability was observed during assessment of Data and parameters fixed ex ante or at renewal of crediting period. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the data and parameters fixed ex ante have been correctly listed. Parameters fixed ex-ante for required parameters have been verified by checking the information flow and in compliance with the monitoring plan of the revised approved PDD/1.3/ and hence, the requirement of VVS v09.0 §§ 392-393 have been met.

E.6.2. Data and parameters monitored

Electricity Exported to the grid by the project activity, EG_y

Means of verification

The monitoring of reductions in GHG emissions resulting from the registered project have been implemented in accordance with the monitoring plan contained in the revised approved PDD/1.3/. The monitoring mechanism, including the data collection system, is effective and reliable. During the site visit, personnel involved at various levels of operation of the project activity have been interviewed. It has been confirmed that the O&M personnel from the plant are conscious of the importance of the monitoring activities

On-site verification of "Electricity Exported to the grid by the project activity" data has been done as follows

Monitoring Report, onsite checks / **Revised Monitoring Plan & Approved Methodology**	**Requirement in the applicable methodology and relevant EB Documents**	**Requirement in the revised monitoring plan (Revised PDD monitoring Plan)**	**Means of Verification (MR/1.8/ and ER calculation in excel sheet /4.7/ check and consistency with actual monitoring practice at project site)**	**DOE Conclusion**
Data/Parameter	$EG_{BL,y}$	EG_y	EG_y	This is in compliance with the applicable methodology and monitoring plan.
Description	The electricity supplied by the project activity to the grid	Electricity Exported to the grid by the project activity	Electricity Exported to the grid by the project activity	The net power exported to the grid is equivalent to the amount of electricity supplied to the grid. Hence, this is in compliance with the applicable methodology and monitoring plan.
Measured/Calculated /Default	Measured	Measured	Measured and calculated based on measured parameters.	The meters installed at grid substation near to theproject site directly measure the exported and imported electricity.

					EG_y (net electricity exported to the grid) is the simple difference of these two directly measured values. Hence this is in compliance with the applicable methodology and monitoring plan.
	Source of data	On site measurement	Joint Meter Readings (JMRs) taken and signed by authorized officials of MSEDCL	Joint Meter Readings (JMRs)/3.3/ taken and signed by authorized officials of MSEDCL	More specific information is provided. This is in compliance with the applicable methodology and monitoring plan.
	Monitoring equipment	Energy meter	Energy meter	Energy Meters: Readings are recorded by a main meter and check meter which measures and records the electricityexported to the grid by the project activity.The main and check meters are connected at the secondary (132 kV) side of the step-up transformer in the switchyard of the project activity.	This is in compliance with the applicable methodology and monitoring plan.
	Measuring/Reading/ Recording frequency	Monthly	Continuous monitoring, hourly measurement and at least monthly recording	Continuous monitoring, hourly measurement and at least monthly recording	This is in compliance with the applicable methodology and monitoring plan.
	Calculation method (if applicable)	Not Applicable as this is a measured parameter	Not Applicable as this is a measured parameter	EG_y = (Electricity exported to the grid – Electricity imported from grid)	More specific information is provided. This parameter is calculated based on the measured parameter. This is in compliance with the applicable

					methodology and monitoring plan.
	QA/QC procedures	Applied methodology does not provide any details.	Monthly joint meter reading of main and check meters are taken and signed by authorized officials of DLHPPL, MSEDCL, MSETCL and GOMWRDgenerally once every month. Records of this joint meter reading aremaintained by DLHPPL, MSEDCL, MSETCL and GOMWRD. The Meters are checked for accuracy and calibration by the MSETCL as per the provisions in the power purchase agreement (PPA) prevailing at the timeof respective accuracy check or calibration. As per the current PPA, themeters are checked for accuracy.	The energy meters (main and check) are calibrated in regularly interval. There is no calibration delay observed during current monitoring period. The calibration frequency is found to be consistent with registered monitoring plan. The electricity export values recorded in form of Joint Meter Reading (JMR) /3.3/ each month from the main meter were cross-verified with the corresponding invoices for that particular month raised by the Project Participant on MSEDCL for the sale of electricity.	Methodology does not provide any specifications; this is as per actual practice. But, this is in line with the general CDM requirements.
	Value (s) of Monitored parameter	Not Specified	Not Specified	Month wise data is represented in MR /1.8/ and ER sheet /4.2/. The values are found to be correct and consistent with raw data available at project site.	The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ and ER sheet /4.2/ have been correctly reported and confirmed by the assessment team.
Findings	**Corrective Action Request No. 2:** The CAR#2 was raised to the PP to clarify the followings:				

	The details of energy meters is not provided in section C of MR and section D.2 of MR as per requirement of MR filling guideline which says "For "Monitoring equipment" in the table, provide information on type, accuracy class, serial number, calibration frequency, date of last calibration and validity." Also, there is no information about energy meters in any Appendix of MR as mentioned in foot note 3; therefore, the PP was requested to clarify the same. In response, the PP has revised the Monitoring Report to furnish the details of Energy Meters under Appendix 3. Same was verified from calibration certificates and found to be correct, hence accepted. Accordingly, the PP has corrected the information about energy meter in foot note, now details are provided in Appendix 3 of the MR. Based on response and review of the revised MR and assessment team has found the MR is appropriately revised for consistency with meter calibration details. Hence, the CAR#2 was closed satisfactorily. (Further details have been provided in Appendix 4 of this verification report)
Conclusion	Applus+ LGAI confirms that the actual monitoring activities observed on site are in compliance with the monitoring plan which is described in the revised approved PDD/1.3/ and the same is in line with the monitoring methodology /2.3/. The project emissions calculated based on the amount of diesel consumed in standby DG setand import electricity consumption which makes the emission reductions calculations conservative. The applicable parameters stated in the registered plan/1.3/ and the applied methodology/2.3/ has been sufficiently monitored. The responsibilities and authorities for monitoring and reporting are in accordance with what is stated in the monitoring plan/1.3/. The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ have been correctly reported and confirmed. Hence, the requirement of VVS v09.0 §§ 389-393 have been met.

Electricity Imported: $E_{Import,y}$

Means of verification	The monitoring of reductions in GHG emissions resulting from the registered project have been implemented in accordance with the monitoring plan contained in the revised approved PDD/1.3/. The monitoring mechanism, including the data collection system, is effective and reliable. During the site visit, personnel involved at various levels of operation of the project activity have been interviewed. It has been confirmed that the O&M personnel from the plant are conscious of the importance of the monitoring activities On-site verification of "Electricity Imported from the grid by the project activity " data has been done as follows

Monitoring Report, onsite checks / **Revised Monitoring Plan & Approved Methodology**	**Requirement in the applicable methodology and relevant EB Documents**	**Requirement in the revised monitoring plan (Revised PDD monitoring Plan)**	**Means of Verification (MR/1.8/ and ER calculation in excel sheet /4.2/ check and consistency with actual monitoring practice at project site)**	**DOE Conclusion**
Data/Parameter	Not Specified	E_{import}	E_{import}	This is in compliance with the applicable methodology and monitoring plan.
Description	Not Specified	Electricity Imported from	Electricity Imported from	Electricity imported by the

			the grid by the project activity	the grid by the project activity	project activity is measured by a separate import Meter installed near the switchyard. Hence, this is in compliance with the applicable methodology and monitoring plan.
	Measured/Calculated /Default	Not Specified	Measured	Measured and calculated based on measured parameters.	This is in compliance with the applicable methodology and monitoring plan.
	Source of data	Not Specified	Monthly electricity bills raised by MSEDCL	Monthly electricity bills raised by MSEDCL/3.4/	More specific information is provided. This is in compliance with the applicable methodology and monitoring plan.
	Monitoring equipment	Not Specified	Energy meter	Energy Meters: Readings are recorded by a main meter and check meter which measures and records the electricity import from the grid by the project activity.A separate Import Meter installed near the switchyard at project activity site.	This is in compliance with the applicable methodology and monitoring plan.
	Measuring/Reading/ Recording frequency	Not Specified	Continuous monitoring, monthly recording	Continuous monitoring, monthly recording	This is in compliance with the applicable methodology and monitoring plan.
	Calculation method (if applicable)	Not Specified	Not Applicable as this is a measured parameter	Not Applicable as this is a measured parameter	More specific information is provided. This is in compliance with the applicable methodology and monitoring plan.
	QA/QC procedures	Applied methodology does not provide any details.	Monthly electricity bills raised by MSEDCL. The meter is calibrated	Import meter is under the custody of MSEDCL, and DLHPPL has no access to meter and the calibration details pertaining to the same. Hence, calibration	Methodology does not provide any specifications; this is as per actual practice. But, this is in line with the general CDM requirements.

				records are not maintained by DLHPPL for the import meter.	
	Value (s) of Monitored parameter	Not Specified	Not Specified	Month wise data is represented in MR /1.8/ and ER sheet /4.2/. The values are found to be correct and consistent with raw data available at project site.	The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ and ER sheet /4.2/ have been correctly reported and confirmed by the assessment team.

Findings	No non-conformability was observed during assessment for this monitoring parameter against applied monitoring methodology and monitoring plan which is described in the revised approved PDD/1.3/ . Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the actual monitoring activities observed on site are in compliance with the monitoring plan which is described in the revised approved PDD/1.3/ and the same is in line with the monitoring methodology /2.3/. The project emissions calculated based on the amount of diesel consumed in standby DG set and import electricity consumption which makes the emission reductions calculations conservative. The applicable parameters stated in the registered plan/1.3/ and the applied methodology/2.3/ has been sufficiently monitored. The responsibilities and authorities for monitoring and reporting are in accordance with what is stated in the monitoring plan/1.3/. The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ have been correctly reported and confirmed. Hence, the requirement of VVS v09.0 §§ 389-393 have been met.

Gross Electricity Generation; E_{Gen}

Means of verification	The monitoring of reductions in GHG emissions resulting from the registered project have been implemented in accordance with the monitoring plan contained in the revised approved PDD/1.3/. The monitoring mechanism, including the data collection system, is effective and reliable. During the site visit, personnel involved at various levels of operation of the project activity have been interviewed. It has been confirmed that the O&M personnel from the plant are conscious of the importance of the monitoring activities On-site verification of "Gross electricity generated by the project activity" data has been done as follows

Monitoring Report, onsite checks / **Revised Monitoring Plan**	**Requirement in the applicable methodology and relevant EB Documents**	**Requirement in the revised monitoring plan (Revised PDD monitoring Plan)**	**Means of Verification** **(MR/1.8/ and ER calculation in excel sheet /4.2/ check and consistency with actual**	**DOE** **Conclusion**

& Approved Methodology			monitoring practice at project site)	
Data/Parameter	$EG_{BL,y}$	E_{Gen}	E_{Gen}	This is in compliance with the applicable methodology and monitoring plan.
Description	The electricity supplied by the project activity to the grid	Gross Electricity generated by the project activity	Gross Electricity generated by the project activity	Gross Electricity Generation is measured at the Gross Generation Meter installed at the generator end within the control room of the plant.Hence, this is in compliance with the applicable methodology and monitoring plan.
Measured/Calculated /Default	Measured	Measured	Measured and calculated based on measured parameters.	Meter installed at the generator end within the control room of the plant at the project site for directly measure the generated electricity. Hence this is in compliance with the applicable methodology and monitoring plan.
Source of data	On site measurement	Joint Meter Readings (JMRs) taken and signed by authorized officials of MSEDCL	The readings from this meter are recorded jointly in the presence of authorized officials of MSEDCL, DLHPPL, MSETCL and GOMWRD monthly.This reading also forms part of the JMR/3.3/.	More specific information is provided. This is in compliance with the applicable methodology and monitoring plan.
Monitoring equipment	Energy meter	Energy meter	Energy Meters: Readings are recorded by a meter which measures and records the electricity generated by the project activity.	This is in compliance with the applicable methodology and monitoring plan.
Measuring/Reading/ Recording frequency	Monthly	Continuous monitoring, monthly recording	Continuous monitoring, monthly recording	This is in compliance with the applicable methodology and

				monitoring plan.
Calculation method (if applicable)	Not Applicable as this is a measured parameter	Not Applicable as this is a measured parameter	Not Applicable as this is a measured parameter	More specific information is provided. This is in compliance with the applicable methodology and monitoring plan.
QA/QC procedures	Applied methodology does not provide any details.	The data are directly measured and monitored at the project site. The meters installed at the generator end shall be checked for accuracy for every six months and the calibration is done once in a year. If the accuracy of meter is found to be beyond permissible limit even after calibration then the meter shall be replaced with spare tested, calibrated meter. DLHPPL shall archive all the JMRs and the complete metering data at generation end on paper and all the data would be preserved for at least two years after end of the crediting period.	The energy meter iscalibrated in regularly interval. There is no calibration delay observed during current monitoring period. The calibration frequency is found to be consistent with registered monitoring plan. The electricity generated values recorded also in form of Joint Meter Reading (JMR)/3.3/ each month.	Methodology does not provide any specifications; this is as per actual practice. But, this is in line with the general CDM requirements.
Value (s) of Monitored parameter	Not Specified	Not Specified	Month wise data is represented in MR /1.8/ and ER sheet /4.2/. The values are found to be correct and consistent with raw data available at project site.	The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ and ER sheet /4.2/ have been correctly reported and confirmed by the assessment team.

Findings	No non-conformability was observed during assessment for this monitoring parameter against applied monitoring methodology and monitoring plan which is described in the revised approved PDD/1.3/ . Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the actual monitoring activities observed on site are in compliance with the monitoring plan which is described in the revised approved PDD/1.3/ and the same is in line with the monitoring methodology /2.3/. The project emissions calculated based on the amount of diesel consumed in standby DG set and import electricity consumption which makes the emission reductions calculations conservative. The applicable parameters stated in the registered plan/1.3/ and the applied methodology/2.3/ has been sufficiently monitored. The responsibilities and authorities for monitoring and reporting are in accordance with what is stated in the monitoring plan/1.3/. The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ have been correctly reported and confirmed. Hence, the requirement of VVS v09.0 §§ 389-393 have been met.

Auxiliary Consumption

Means of verification

The monitoring of reductions in GHG emissions resulting from the registered project have been implemented in accordance with the monitoring plan contained in the revised approved PDD/1.3/. The monitoring mechanism, including the data collection system, is effective and reliable. During the site visit, personnel involved at various levels of operation of the project activity have been interviewed. It has been confirmed that the O&M personnel from the plant are conscious of the importance of the monitoring activities

On-site verification of "Unit consumed by the project activity" data has been done as follows

Monitoring Report, onsite checks / **Revised Monitoring Plan & Approved Methodology**	**Requirement in the applicable methodology and relevant EB Documents**	**Requirement in the revised monitoring plan (Revised PDD monitoring Plan)**	**Means of Verification (MR/1.8/ and ER calculation in excel sheet /4.2/ check and consistency with actual monitoring practice at project site)**	**DOE Conclusion**
Data/Parameter	Not Specified	Auxiliary Consumption	Auxiliary Consumption	This is in compliance with the applicable methodology and monitoring plan.
Description	Not Specified	Unit consumed by the project activity	Unit consumed by the project activity	This is in compliance with the applicable methodology and monitoring plan.
Measured/Calculated /Default	Not Specified	Calculated	Calculated based on measured parameters.	This value is calculated as difference between a) gross generation and b) the export to the grid. This is in compliance with the applicable methodology and monitoring plan.

Source of data	Not Specified	Joint Meter Readings (JMRs) taken and signed by authorized officials of MSEDCL	Joint Meter Readings (JMRs)/3.3/ taken and signed by authorized officials of MSEDCL	More specific information is provided. This is in compliance with the applicable methodology and monitoring plan.
Monitoring equipment	Not Specified	Not Applicable as parameter calculated	Not Applicable as parameter calculated	This is in compliance with the applicable methodology and monitoring plan.
Measuring/Reading/ Recording frequency	Not Specified	Continuous monitoring, monthly recording	Continuous monitoring, monthly recording	This is in compliance with the applicable methodology and monitoring plan.
Calculation method (if applicable)	Not Specified	The data is calculated using the gross electricity generation (E_{Gen}) and electricity exported to the grid (E_{Gy}) as per the JMR.	The data is calculated using the gross electricity generation (E_{Gen}) and electricity exported to the grid (E_{Gy}) as per the JMR /3.3/.	More specific information is provided. This parameter is calculated based on the measured parameter. This is in compliance with the applicable methodology and monitoring plan.
QA/QC procedures	Applied methodology does not provide any details.	The data is calculated using the gross electricity generation (E_{Gen}) and electricity exported to the grid (EG_y) as per the JMR. This data are also used in calculating electricity export in the event of simultaneous failure and/or defect in accuracy of both the main meter & check meter.	The data is calculated using the gross electricity generation (E_{Gen}) and electricity exported to the grid (EG_y) as per the JMR /3.3/. This data are also used in calculating electricity export in the event of simultaneous failure and/or defect in accuracy of both the main meter & check meter.	As per the monitoring plan in the approved revised PDD, the auxiliary consumption values shall be used for the calculation of electricity export in the event of simultaneous failure and/or defect in accuracy of both main and check meters. During the current verification period, however, there were no such occurrences. Methodology does not provide any specifications; this is as per actual practice. But, this is in line with the general CDM requirements.
Value (s) of Monitored parameter	Not Specified	Not Specified	Month wise data is represented in MR /1.8/ and ER sheet /4.2/. The	The information flow (data generation, aggregation,

				values are found to be correct and consistent with raw data available at project site.	recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ and ER sheet /4.2/ have been correctly reported and confirmed by the assessment team.

Findings	No non-conformability was observed during assessment for this monitoring parameter against applied monitoring methodology and monitoring plan which is described in the revised approved PDD/1.3/ . Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the actual monitoring activities observed on site are in compliance with the monitoring plan which is described in the revised approved PDD/1.3/ and the same is in line with the monitoring methodology /2.3/. The project emissions calculated based on the amount of diesel consumed in standby DG setand import electricity consumption which makes the emission reductions calculations conservative. The applicable parameters stated in the registered plan/1.3/ and the applied methodology/2.3/ has been sufficiently monitored. The responsibilities and authorities for monitoring and reporting are in accordance with what is stated in the monitoring plan/1.3/. The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ have been correctly reported and confirmed. Hence, the requirement of VVS v09.0 §§ 389-393 have been met.

Diesel consumption, DC_y

Means of verification	The monitoring of reductions in GHG emissions resulting from the registered project have been implemented in accordance with the monitoring plan contained in the revised approved PDD/1.3/. The monitoring plan includes the verification of GHG emission by diesel consumption in the project activity. On-site verification of "Diesel consumed by the standby DG set" has been done as follows:

Monitoring Report, onsite checks / **Revised Monitoring Plan & Approved Methodology**	**Requirement in the applicable methodology and relevant EB Documents**	**Requirement in the revised monitoring plan (Revised PDD monitoring Plan)**	**Means of Verification (MR/1.8/ and ER calculation in excel sheet /4.2/ check and consistency with actual monitoring practice at project site)**	**DOE Conclusion**
Data/Parameter	Amount of fossil fuel	DC_y	DC_y	This is in compliance with the applicable methodology and monitoring plan.
Description	Amount of fossil fuel used shall be	Diesel consumed by the standby DG	Diesel consumed by the standby DG set	This is in compliance with

	monitored	set		the applicable methodology and monitoring plan.
Measured/Calculated /Default	Measured	Measured	Measured	This is in compliance with the applicable methodology and monitoring plan.
Source of data	On site measurement	Daily records of levels in the diesel storage tanks as per the plant log book.	Log book issued by DLHPPL/3.6/	The consumption of diesel in the D.G. Set for the current verification period is verified from the daily records maintained in the Plant Log Book /3.6/ at the plant site. It was cross checked with the Store records for issuance of diesel for the D.G Set /3.5/.This is in compliance with the applicable methodology and monitoring plan.
Monitoring equipment	Not specified	Quantity available in diesel tank	Quantity of diesel available in diesel tank, fed in log book	This is in compliance with the applicable methodology and monitoring plan.
Measuring/Reading/ Recording frequency	Not specified	Continuously and recorded monthly basis.	Continuously and recorded monthly basis.	This is in compliance with the applicable methodology and monitoring plan.
Calculation method (if applicable)	Not Applicable as this is a measured parameter	Not Applicable as this is a measured parameter	Not Applicable as this is a measured parameter	This is in compliance with the applicable methodology and monitoring plan.
QA/QC procedures	Applied methodology does not provide any details.	Not required	No procedure implementation required	Methodology does not provide any specifications; This is in compliance with the applicable methodology and monitoring plan.
Value (s) of Monitored parameter	Not Specified	Not Specified	Month wise data is represented in MR /1.8/ and ER sheet /4.2/. The values are found to be correct and consistent with raw data available at project site.	The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the

					final version of the MR/1.8/ and ER sheet /4.2/ have been correctly reported and confirmed by the assessment team.

Findings	No non-conformability was observed during assessment for this monitoring parameter against applied monitoring methodology and monitoring plan which is described in the revised approved PDD/1.3/ . Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the actual monitoring activities observed on site are in compliance with the monitoring plan which is described in the revised approved PDD/1.3/ and the same is in line with the monitoring methodology /2.3/. The project emissions calculated based on the amount of diesel consumed in standby DG setand import electricity consumption which makes the emission reductions calculations conservative. The applicable parameters stated in the registered plan/1.3/ and the applied methodology/2.3/ has been sufficiently monitored. The responsibilities and authorities for monitoring and reporting are in accordance with what is stated in the monitoring plan/1.3/. The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ have been correctly reported and confirmed. Hence, the requirement of VVS v09.0 §§ 389-393 have been met.

Hourly Electricity Export: HEE_{main_meter}

Means of verification	The monitoring of reductions in GHG emissions resulting from the registered project have been implemented in accordance with the monitoring plan contained in the revised approved PDD/1.3/. The monitoring mechanism, including the data collection system, is effective and reliable. During the site visit, personnel involved at various levels of operation of the project activity have been interviewed. It has been confirmed that the O&M personnel from the plant are conscious of the importance of the monitoring activities On-site verification of "Hourly electricity exported to the grid by the project activity as recorded at the main meter and check meter. This parameter is relevant to conditions/ circumstances (those days) where the dates of Joint Meter Readings (JMRs) pertaining to the project activity do not match the individual verification periods" data has been done as follows

Monitoring Report, onsite checks / **Revised Monitoring Plan & Approved Methodology**	**Requirement in the applicable methodology and relevant EB Documents**	**Requirement in the revised monitoring plan (Revised PDD monitoring Plan)**	**Means of Verification (MR/1.8/ and ER calculation in excel sheet /4.2/ check and consistency with actual monitoring practice at project site)**	**DOE Conclusion**
Data/Parameter	Not specified	HEE_{main_meter}	HEE_{main_meter}	This is in compliance with the applicable methodology and monitoring plan.
Description	Not specified	Hourly electricity exported to the grid by the project activity	Hourly electricity exported to the grid by the project activity as	This is in compliance with the applicable methodology and

			as recorded at the main meter and check meter. This parameter is relevant to conditions/ circumstances (those days) where the dates of Joint Meter Readings (JMRs) pertaining to the project activity do not match the individual verification periods.	recorded at the main meter and check meter. This parameter is relevant to conditions/ circumstances (those days) where the dates of Joint Meter Readings (JMRs) /3.3/ pertaining to the project activity do not match the individual verification periods.	monitoring plan.
	Measured/Calculated /Default	Not specified	This data is recorded on an hourly basis by DLHPPL based on data recorded at the main meter.	This data is recorded on an hourly basis by DLHPPL based on data recorded/3.8/ at the main meter.	This parameter is based on the hourly recording of the readings of main and check meter maintained in the plant log book /3.8/. These readings are referred to deduce an apportioning ratio, in the event of mismatch of the start or end dates of the verification period with the dates of the JMR. Hence this is in compliance with the applicable methodology and monitoring plan.
	Source of data	Not specified	Log Book Records for the main meter	Log Book/3.8/ Records for the main meter	More specific information is provided. This is in compliance with the applicable methodology and monitoring plan.
	Monitoring equipment	Not specified	Energy meter	Energy Meters: Readings are recorded by a main meter and check meter which measures and records the electricity exported to the grid by the project activity.The main and check meters are connected at the	This is in compliance with the applicable methodology and monitoring plan.

				secondary (132 kV) side of the step-up transformer in the switchyard of the project activity.	
	Measuring/Reading/ Recording frequency	Not specified	Continuous monitoring, hourly measurement and at least monthly recording. This parameter is relevant to conditions/ circumstances (those days) where the dates of Joint Meter Readings (JMRs) pertaining to the project activity do not match the individual verification periods.	Continuous monitoring, hourly measurement and at least monthly recording. This parameter is relevant to conditions/ circumstances (those days) where the dates of Joint Meter Readings (JMRs) pertaining to the project activity do not match the individual verification periods.	This is in compliance with the applicable methodology and monitoring plan.
	Calculation method (if applicable)	Not Applicable as this is a measured parameter	Not Applicable as this is a measured parameter	Not Applicable as this is a measured parameter	More specific information is provided. This is in compliance with the applicable methodology and monitoring plan.
	QA/QC procedures	Applied methodology does not provide any details.	For measuring the hourly energy exported to the grid, one main meter and one check meter are maintained. The hourly meter reading of the main meter is the basis of emission reduction calculations, so long as the meter is found to be within prescribed limits of accuracy during the periodic check. Hourly meter reading of the check meters would be used for cross checking. The meters are checked for accuracy and calibration by the	The energy meters (main and check) are calibrated in regularly interval. There is no calibration delay observed during current monitoring period. The calibration frequency is found to be consistent with registered monitoring plan. The electricity export values recorded in form of Joint Meter Reading (JMR) each month from the main meter were cross-verified with the corresponding invoices for that particular month raised by the Project	Methodology does not provide any specifications; this is as per actual practice. But, this is in line with the general CDM requirements.

			MSETCL as per the provisions in the power purchase agreement (PPA) prevailing at the time of respective accuracy check or calibration. As per the current PPA, the meters are checked for accuracy every six months and the calibration is done once in a year.	Participant on MSEDCL for the sale of electricity.	
	Value (s) of Monitored parameter	Not Specified	Not Specified	Month wise data is represented in MR /1.8/ and ER sheet /4.2/. The values are found to be correct and consistent with raw data available at project site.	The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ and ER sheet /4.2/ have been correctly reported and confirmed by the assessment team.

The hourly electricity export readings (HEE_{main_meter}) recorded at the main meters was monitored by DLHPPL for the project activity in their log book. For current monitoring period, the Start date & end date of period is 27/07/2015&31/10/2016 respectively. Hence data apportioning method has been applied for electricity exports and electricity imports based on recorded value of parameter hourly electricity export readings (HEE_{main_meter})as accordance to the prescribed procedure mentioned in monitoring plan of revised approved PDD/1.3/. Same has been discussed in section C of the revised MR /1.8/ and also applied in the ER calculation sheet /4.2/ and apportioned value has been considered for ER calculation. This was verified by assessment team and found to be appropriate, hence accepted.

Findings	No non-conformability was observed during assessment for this monitoring parameter against applied monitoring methodology and monitoring plan which is described in the revised approved PDD/1.3/ . Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the actual monitoring activities observed on site are in compliance with the monitoring plan which is described in the revised approved PDD/1.3/ and the same is in line with the monitoring methodology /2.3/. The project emissions calculated based on the amount of diesel consumed in standby DG setand import electricity consumption which makes the emission reductions calculations conservative. The applicable parameters stated in the registered plan/1.3/ and the applied methodology/2.3/ has been sufficiently monitored. The responsibilities and authorities for monitoring and reporting are in accordance with what is stated in the monitoring plan/1.3/. The information flow (data generation, aggregation, recording, calculation and reporting) for the parameters to be monitored including its values in the final version of the MR/1.8/ have been correctly reported and confirmed. Hence, the requirement of VVS v09.0 §§ 389-393 have been met.

E.6.3. Implementation of sampling plan

Means of verification	No sampling plan is defined in the registered monitoring plan. All the data and

	information has been checked during verification assessment, thus no sampling plan has been applied in the Project.
Findings	Not Applicable
Conclusion	Not Applicable

E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification

All the monitoring parameters have been monitored and the monitoring results are consistently recorded as per the frequency mentioned under the approved revised monitoring plan. Accuracy of all equipment has been observed to be maintained within the specified limits.

The metering equipment for electricity measurement mainly consists of a main meter, a check energy meter and Gross Generation meter (bidirectional tri-vector type) which are used to monitor the quantity of electricity export and import by the project activity and gross generation by turbine generator. All the meters are 0.2s accuracy class. The calibration was done by qualified and authorised personnel by MSEDCL's Testing division at the site itself. The assessment team has checked the calibration certificates/5.1/ for accuracy and validity, so as to assure reliability and steadiness of monitoring results. The calibrations results have been verified as below.

Main and Check Meters:

Monitoring equipment	Energy Meter	
Monitoring parameter	EG_y	
Unique Identification Number/Sr. No.	02173601 (Main Meter)	02173600 (Check Meter)
Make	ABB	ABB
Accuracy Level	0.2s	0.2s
Calibration frequency requirement	Annual	Annual
Date of Calibration	05/06/2015	05/06/2015
Validity of calibration	04/06/2016	04/06/2016
Delays in calibration (if any)	No Delay	No Delay
Calibration Conducting Entity	State utility	State utility
Accreditation Certificate for the calibration entity issuing authority relevant	NABL accredited	NABL accredited

New Meters replacement on 30/11/2015:

Monitoring equipment	Energy Meter	
Monitoring parameter	EG_y	
Unique Identification Number/Sr. No.	14831461 (Main Meter)	14831477 (Check Meter)
Make	Elester	Elester
Accuracy Level	0.2s	0.2s
Calibration frequency requirement	Annual	Annual
Date of Calibration	30/11/2015 03/06/2016	30/11/2016 03/06/2016
Validity of calibration	02/06/2017	02/06/2017
Delays in calibration (if any)	No Delay	No Delay
Calibration Conducting Entity	State utility	State utility

	Accreditation Certificate for the calibration entity issuing authority relevant: NABL accredited / NABL accredited

Gross Electricity Generation Meter

Monitoring equipment	Energy Meter
Monitoring parameter	E_{Gen}
Unique Identification Number/Sr. No.	73932341
Make	Siemens Landis&Gyr Z.U
Accuracy Level	0.2s
Calibration frequency requirement	Annual
Date of Calibration	01/06/2015 23/01/2016 08/06/2016
Validity of calibration	07/06/2017
Delays in calibration (if any)	No Delay
Calibration Conducting Entity	State utility
Accreditation Certificate for the calibration entity issuing authority relevant	NABL accredited

During the current monitoring period; it is verified that the calibration of energy meters (main & check) and generation meter is carried out as per the frequency mentioned in the revised approved PDD/1.3/. It was verified based on review of calibration certificate that there was no delay of energy meterscalibrations.

In light of the guidance as outlined under VVS v09.0 §§ 394, the assessment team checked the calibration procedures. As per the monitoring plan outlined in the revised approved PDD /1.3/, the calibration interval is annual.

Findings	No non-conformability was observed during assessment of calibration certificates for energy meters (measuring instruments) used in current monitoring period against the calibration frequency requirements for measuring instruments as applied by monitoring methodology and monitoring plan which is described in the revised approved PDD/1.3/. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the calibration is conducted at the frequency following the relevant industry standard as specified by the methodology /2.3/ and the monitoring plan contained in the revised approved PDD /1.3/. Therefore, the requirement of VVS v09.0 §§ 400 have been met.

E.8. Assessment of data and calculation of emission reductions or net removals

E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	The PP has provided the complete set of data for the current monitoring period. The values of the parameters reported in the MR /1.8/ and ER sheet /4.2/have been crosschecked with the values mentioned in the supporting documents. The values were found to be consistent and accurate. As per AMS I.D. version 18 §§ 22 and the "Tool to calculate the emission factor for an electricity system"; the baseline is the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kg CO2e/kWh) calculated in a transparent and conservative manner as: (a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the 'Tool

	to calculate the emission factor for an electricity system'. (b) The weighted average emissions (in kg CO_{2e}/kWh) of the current generation mix. The data of the year in which project generation occurs must be used. Calculations must be based on data from an official source (where available) and made publicly available. The PP has calculated the baseline emissions using the published data of the Central Electricity Authority, Ministry of Power, Government of India. The baseline emission factor of the NEWNE grid with this approach results in baseline emissions as 43,047 tCO_2e. The baseline grid emission factor is defined ex-ante and is appropriate and justified. The calculation approach provided in the ER calculation sheet /4.2/ is checked and found to be correct.The baseline emissions are calculated as per provisions indicated in the revised approved PDD /1.3/ and applied methodology /2.3/. The means of verification for the parameter are described under section E.6.2.
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the requirement outlined under VVS v09.0 §§ 403 have been meet as: • A complete set of data for the monitoring period is available. • Information on the baseline GHG emission calculation provided in the monitoring report /1.8/ and ER sheet /4.2/ has been cross-checked with other sources. • Calculations of baseline emissions have been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document. • Appropriate emission factor of the power grid has been correctly applied.

E.8.2. Calculation of project GHG emissions or actual net GHG removals by sinks

Means of verification	**Project Emission due to Diesel consumption ($PE_{Diesel,y}$):** The project involved consumption of minor quantity of Diesel in standby DG Set. The formula used to calculate the project emissions due to diesel consumption is provided below: $PE_{Diesel} = \sum DC_y \times Density_{Diesel} \times NCV_{Diesel} \times EF_{CO2Diesel}$ Where, PE_{Diesel} = Project Emission due to use of Diesel consumed during this monitoring period in DG set DC_y = Diesel Consumption in Liters (L) $Density_{Diesel}$ = Density of Diesel (0.88Kg/Lit) NCV_{Diesel} = Net Calorific Value of Diesel $EF_{CO2Diesel}$ = IPCC 2006 Emission factor for Diesel The values are: DC_y = 277 L $Density_{Diesel}$ = 0.88Kg/Lit Net Calorific Value of Diesel = 43.3 GJ/tonne $EF_{CO2Diesel}$ = 0.0748 tCO_2 /GJ Project emission due to Diesel for current monitoring period is calculated as **$PE_{Diesel,y}$**=0.789t CO_2e **Project Emission due to Electricity Imported ($PE_{Import,y}$) :** The project activity also involved the import of electricity, which is considered in

	calculation of project emission as shown below: $PE_{import,y}=E_{import,y}*EF_{westerngrid,CM,y}$ Where $PE_{import\ y}$ – Project emission from import of electricity from the grid during the year y $E_{import\ y}$ – Electricity imported from the grid by the project activity during the year y $EF_{Western\ grid,\ CM\ y}$- Baseline emission factor for the western regional grid (combined margin approach)whose value is fixed for crediting period at 0.69 CO2e /MWh $PE_{import,y}$= 72.16445 MWh X 0.69tCO_2e = 49.72 tCO_2e Overall Project emission due to Diesel and import from grid for current monitoring period is calculated as PE_y = $PE_{Import,y}$ + $PE_{Diesel,y}$ = 49.72 tCO_2e + 0.789 tCO_2e =51tCO_2e (Rounded up Value)
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the requirement outlined under VVS v09.0 §§ 403 have been meet as: • A complete set of data for the monitoring period is available. • Information on the project emission calculation provided in the monitoring report /1.8/ and ER sheet /4.2/ has been cross-checked with other sources. • Calculations of project emissions have been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document. • Appropriate emission factor of the diesel and coal have been correctly applied.

E.8.3. Calculation of leakage GHG emissions

Means of verification	The verification team has verified that the energy generating equipment in the project activity is not transferred from another activity and as per category I.D of Appendix B of the simplified M&P for small-scale CDM project activities- Version 18 /2.3/, leakage is to be considered only if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity. Hence there is no requirement of calculating leakage emission
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the requirement outlined under VVS v09.0 §§ 403 have been meet as: • A complete set of data for the monitoring period is available. • Information on the leakage emission calculation provided in the monitoring report /1.8/ and ER sheet/4.2/ has been cross-checked with other sources. • Calculations of leakage emissions have been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document.

E.8.4. Summary of calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	The verification team has reviewed the calculation of GHG emission reductions in the final MR /1.8/ and ER spreadsheet /4.2/ as per the revised approved PDD /1.3/ and the applied methodology /2.3/. The emission reduction is calculated as $ER_y = BE_y – PE_y – LE_y$ ER_y = 43,047tCO_2e – 51 tCO_2e– 0 = 42,996tCO_2e

	ER_y = 42,996tCO_2e (rounded down) The assessment team verified that the ER excel spreadsheet /4.2/, the ER for each month has been calculated. The sum of the ER for each month has been rounded down to arrive at the total ER for the current monitoring period. The assessment team confirms that an audit trail that contains the evidence and records that validated the stated figures were checked and found acceptable.
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the requirement outlined under VVS v09.0 §§ 403 have been meet as: • A complete set of data for the monitoring period is available. • Information provided in the monitoring report /1.8/ and ER sheet /4.2/ has been cross-checked with other sources; • Calculations of baseline emissions, and project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document. • There are no assumptions in emission reductions calculation. • Appropriate emission factor of the power grid has been correctly applied.

E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	The comparison of actual GHG emission reductions with estimates in revised approved PDD /1.3/ has been checked and re-calculated by the verification team. The emission reduction during the monitoring period (27/07/2015–31/10/2016, 463days) is verified as 42,996 tCO_2e. According to the revised approved PDD/1.3/, the annual emission reductions were estimated as 35,042 tCO_2e, compared with the value of estimated emission reductions during the same period in the revised approved PDD /1.3/, i.e. 44,448 tCO_2e (35,091 tCO_2e × 463 days/365days = 44,448tCO_2e), the verified emission reductions are 3.27% lesser than the estimated value in the monitoring period.
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the requirement outlined under PS v09.0 §§ 256 have been meet as: • A comparison of actual GHG emission reductions or net anthropogenic GHG removal of the project activity achieved during this monitoring period with the estimates in the revised approved PDD /1.3/ has been provided in the Monitoring Report /1.8/. • The verification team confirms that the calculation of the comparison is correct.

E.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	The verification team has assessed the cause of any variation in the actual GHG emission reductions achieved during the current monitoring period by reviewing the previous verification reports /1.5/ and the current monitoring report.There is decrease of 3.27% in the actual emission reductions achieved during the current monitoring period from that stated in the revised approved CDM-PDD. The variation is mainly due to breakdown and outage of the plant which decrease the operational hours and correspondingly decrease in electricity generation compared to expected or estimate in revised approved PDD /1.3/. The breakdown and outage of the plant was verified by assessment team and found to be appropriate, hence accepted.
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the requirement outlined under PS v09.0 §§ 257 and VVS v09.0 §§ 385 I and 385 (d) have been meet as: • The verified emission reductions are lesser than the estimated value in the monitoring period. The project participants have explained the cause of any decrease in the actual GHG emission reductions achieved during the current monitoring period, and including all information (i.e. data and/or

	parameters) that is different from that stated in the revised approved PDD /1.3/. • The variation is deemed to be reasonable.

E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification	The verification team has reviewed the monitoring report with the daily/monthly reading records to assess whether the GHG emission reductions or removals has been correctly calculated based on a pro-rata approach. The assessment team is able to certify that the emission reductions from the CDM project activity UNFCCC ref.0430 titled as "12 MW hydropower plant in Bhandardara in Maharashtra, India" in India during the period 27/07/2015 – 31/10/2016 (First and last day included) amount to 42,996 tCO_2e. Verified and Certified GHG emission reductions or net GHG removals by sinks reported: up to 31/12/2012 — Not Applicable from 01/01/2013 onwards — 42,996 tCO_2e (Note: Current Monitoring period i.e. 27/07/2015 – 31/10/2016does not fall under first commitment period, therefore GHG emission reductions up to 31/12/2012 is Not Applicable)
Findings	No non-conformability was observed during assessment for this section. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the requirement outlined under PS v09.0 §§ 253as the project participants has provided the calculations of the following for the reported monitoring period of the registered CDM project activity: (a) Baseline GHG emissions or baseline net GHG removals; (b) Project GHG emissions or actual net GHG removals; (c) Leakage GHG emissions; (d) GHG emission reductions or net anthropogenic GHG removals. Applus+ LGAI verified and certified GHG emission reductions or net GHG removals by sinks reported for current monitoring period and also confirms that the pro-rata approach was correctly applied to the calculations of GHG emission reductions or net anthropogenic GHG removalsaspertherequirement outlined under VVS v09.0 §§403.

SECTION F. Internal quality control

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As a final step of verification, the final documentation including the verification report has to undergo an internal quality control by the Technical Reviewer. Each report has to be finally approved either by the DOE's Technical Manager or the Deputy. In case one of these two persons is part of the assessment team, the approval can only be given by the person who is not a part of the assessment team. If the documents have been satisfactorily approved, the Request for Issuance is submitted to the CDM-EB along with the relevant documents.

SECTION G. Verification opinion

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Applus+ LGAI has been contracted by DLHPPL to perform the verification of the emission reductions reported for the CDM project UNFCCC ref. 0430 titled as"12 MW hydropower plant in Bhandardara inMaharashtra, India" in the period 27/07/2015 to 31/10/2016.

Applus+ LGAIconcludes that the CDM Project UNFCCC ref. 0430 titled as"12 MW hydropower plant in Bhandardara inMaharashtra, India", as described in the monitoring plan contained in the revised approved PDD /1.3/ (Version 9, 16/07/2016), and Monitoring Report /1.8/ (Version 03, 24/02/2017), meets all relevant requirements of the UNFCCCfor CDM project activities including article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakesh Accords) and the subsequent decisions by the COP/MOP and CDM Executive Board. The verification is conducted in line with the VVS /2.1/ requirements.The Project is implemented according to selected monitoring methodology /2.3/ and the monitoring plan contained in the revised approvedPDD /1.3/. The monitoring equipment was installed, calibrated and maintained in a proper manner. The monitoring system is in place and the Project is generating GHG emission reductions as a CDM project.

Applus+ LGAI confirms that the project is implemented in accordance with the validated and revised approved Project Design Document. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the project GHG emissions and the resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 42,996 tCO_2e emission reductions during the period27/07/2015 to 31/10/2016 (both days included).

Applus+ LGAItherefore issues the positive verification opinion expressed in the Certification statement in Section H.

SECTION H. Certification statement

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Applus+ LGAI has been engaged by DLHPPL to perform the forth periodical verification of the '12 MW hydropower plant in Bhandardara inMaharashtra, India' (UNFCCC Ref. No. 0430).

The management of DLHPPL is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's Monitoring Plan in the revised approved PDD version 09, completed on 16/07/2016/1.3/ and the applied methodology AMS-I.D Version: 18 /2.3/.

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.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 design document approved by the EB;
- the monitoring plan is as per the applied methodology;
- the monitoring in Monitoring Report is as per the PDD and the monitoring plan approved by the EB;
- the development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan;
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

In our opinion, the GHG emission reductions for '12 MW hydropower plant in Bhandardara in Maharashtra, India' for the monitoring period 27/07/2015 – 31/10/2016as reported in Monitoring Report, prepared on the basis of the project's Monitoring Plan are fairly stated.

Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period:	From 27/07/2015 – 31/10/2016

Verified emissions in the above reporting period:

Leakage emissions	0 tCO_2 equivalents
Project emissions	51 t CO_2equivalents
Baseline emissions	43,047tCO_2 equivalents
Emission reductions in this monitoring period (i.e. 27/07/2015 – 31/10/2016)	**42,996**tCO_2 equivalents
Emission reductions achieved during the period up to 31 December 2012	**0**tCO_2 equivalents
Emission reductions achieved during the period from 1 January 2013 onwards.	**42,996**tCO_2 equivalents

Lead Auditor	Vivek Kumar Ahirwar	Technical Reviewer (1)	Miquel Sitjes Cabanas
Auditor	Ajay Singh Thakur	Technical Reviewer (2)	Natalia Rodrigo Vega

Appendix 1. Abbreviations

Abbreviations	Full texts
AMS	Approved Methodology Small-scale
BM	Build Margin
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CER	Certified Emission Reductions
CL	Clarification Request
CM	Combined Margin
CO_2e	Carbon Dioxide equivalent
CoP/MoP/CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
DG	Diesel Generator
DLHPPL	Dodson – Lindblom Hydro Power Private Limited
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	CDM Executive Board
EF	Emission Factor
ER	Emission Reductions
EVI	Emergent Ventures IndiaPvt. Ltd.
GCESS	Green Carbon Energy and Environment Services
GCV	Gross Calorific Value
GHG	Greenhouse Gas(es)
GOMWRD	Government of Maharashtra Water Resource Department
GPS	Global Positioning System
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organisation for Standardisation
JMR	Joint Meter Reading
KWh	Kilowatt hour
MEDA	Maharashtra Energy Development Agency
MERC	Maharashtra Electricity Regulatory Commission
MP	Monitoring Plan
MPCB	Maharashtra Pollution Control Board
MR	Monitoring Report
MSEB	Maharashtra state Electricity Board
MSEDCL	Maharashtra State Electricity Distribution Company Limited
MSETCL	Maharashtra State Electricity Transmission Company Limited
MW/MWh	Megawatt/ Megawatt hour
NCV	Net Calorific Value
OM	Operating Margin
PDD	Project Design Document
PP	Project Participant
PPA	Power Purchase Agreement
PS	Project Standard
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical reviewers

According to the sectoral scopes / technical area and experiences in the sectoral or national business environment, Applus+ LGAI has composed a project validation team in accordance with the appointment rules in Applus+ LGAI. The composition of assessment team has to be approved by the Applus+ LGAI ensuring that the required skills are covered by the team. The four qualification levels for team members that are assigned by formal appointment rules as below:

- Leader Auditor (LA)
- Auditor (A)
- Auditor Trainee (T)
- Technical Experts (E)

It is required that the sectoral scope / technical area related to the methodology has to be covered by the assessment team.

Name	Qualification	Coverage ofscope	Coverage of technical Area	Financial aspect	Host country Experience	Attendance to the On-Site Assessment
Vivek Kumar Ahirwar	LA/E	Yes (1)	Yes (1.2)	Yes	Yes	Yes
Ajay Singh Thakur	A	Yes (1)	Yes (1.2)	Yes	Yes	No

Technical Reviewer 1:

- Miquel SITJES CABANAS

Technical Reviewer 2:

- Natalia Rodrigo Vega

The curricula vitae of the DOE's validation team members are provided below:

Vivek Kumar Ahirwar is a BEE-Certified Energy Auditor by Govt of India with over ten years of relevant experience in energy efficiency, energy audit, thermal and electrical energy generation technology from renewable source and energy conservation in energy intensive industries, designated consumers and commercial buildings, implementation of energy conservation building codes, research, process and green building projects. He is a certified lead auditor for ISO 14001 EMS and 14064. He has experience under various categories of projects stating from renewable to waste to supercritical projects and WCD. He has successfully audited more than 100 GHG (CDM/VCS/GS) projects in different states across the India. He has done Mater in Technology (Energy Management) from a premier institute, School of Energy & Environmental Studies, DAVV, Indore (M.P.), India and Bachelor of Engineering (Mechanical Engineering) from Govt. Engineering college, Rewa, RGPV, India.

Ajay Singh Thakur is a certified lead auditor for ISO 14001 EMS LA. He has more than five years of work experience across Climate Change, Environmental Management & Monitoring, Health & Safety Management, and Statutory Compliance. He was involved in more than 50 CDM validation and verifications activities and Gold Standard, VER projects as a team leader/technical reviewer / validator / verifier covering the sectoral scope 1 technical area 1.2. he has experience in design and development of Environment Health & Safety Management System (EHS), ISO 14001:2004 (EMS), OHSAS 18001:2007, ISO 14064:2006, ISO 50001:2011 (EnMS) and ISO 9001:2008 (QMS). Also providing trainings on EHS (ISO 14001:2004 (EMS) & OHSAS 18001:2007) to various industries.

He has done Mater in Technology (Energy Management) from a premier institute, School of Energy & Environmental Studies, DAVV, Indore (M.P.), India and Bachelor of Engineering (Chemical Engineering) from Ujjain Engineering Collage, Ujjain, RGPV, India.

Miquel SITJES CABANAS (B. Sc. Degree in Chemistry 1975, Universidad de Barcelona – Spain) He has 15 years of experience in a Spanish chemical group company specialized in the manufacturing of raw chemical products, where he worked as the Manager of Quality Control, Production Manager and Environmental Manager. He also worked in the Spanish pharmaceutical industry for 7 years as Quality, Manufacturing and Environmental Manager. He has been working in the Applus+ LGAI Technological Centre since 1999: he started working there as an auditor (quality, environment, CDM, VCS, greenhouse gas verification and others) and since 2006 he has been the Systems Certification Technical Manager.

Ms. Natalia Rodrigo Vega has a Bachelor's Degree on Environmental Engineering and Master´s Degree on Environmental and Quality Management System (under ISO 9001 and 14001). She Works in Applus Environmental and Quality Management Systems Department since March 2012, being specially involved on technical support tasks related to CDM-VCS and GS Standards, among others (i.e GHG verification and ProyectoClima)

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	**Basic Documents (Monitoring Report, Project Design Documents, Previous Verification Reports)**			
1.1	DLHPPL	MR , version 1.0 "12 MW hydropower plant in Bhandardara in Maharashtra, India"	28/11/2016	PP
1.2	DLHPPL	Approved Revised PDD version 05	18/03/2010	PP
1.3	DLHPPL	Latest Approved Revised PDD version 09 (Renewal of 3rd crediting period from 27/07/2015 – 26/07/2022)	16/07/2016	PP
1.4	LGAI	Validation Report , Version 03 [for Latest Approved Revised PDD version 09 (Renewal of 3rd crediting period from 27/07/2015 – 26/07/2022)]	24/07/2016	Other: LGAI
1.5	UNFCCC website	CDM Project activity view page "12 MW hydropower plant in Bhandardara in Maharashtra, India" https://cdm.unfccc.int/Projects/DB/BVQI1155728784.01/view	30/09/2006	Other: UNFCCC
1.6	DLHPPL	Registered PDD version 03	04/08/2006	PP
1.7	DLHPPL	MR, version 2 "12 MW hydropower plant in Bhandardara in Maharashtra, India"	27/01/2017	PP
1.8	DLHPPL	MR, version 3 "12 MW hydropower plant in Bhandardara in Maharashtra, India"	24/02/2017	PP
2.	**References and requirements at UNFCCC/IPCC/etc.**			
2.1	UNFCCC website	VVS, Version 09.0	20/02/2015	Other: UNFCCC
2.2	UNFCCC website	PS, Version 09.0	20/02/2015	Other: UNFCCC
2.3	UNFCCC website	AMS-I.D. (version 18.0.0): "Grid connected renewable electricity generation"	28/11/2014	Other: UNFCCC
2.4	UNFCCC website	Guidance to Complete "Monitoring Report Form (F-CDM-MR), Version 05.1" as accordance with the Attachment "Instructions for filling out the monitoring report form"	04/05/2015	Other: UNFCCC
2.5	UNFCCC website	Tool to calculate the emission factor for an electricity system, Version 04	04/10/2013	Other: UNFCCC
2.5	IPCC	IPCC Guidelines Vol. 2	Year 2006	Other: IPCC
3.	**Project implementation information**			
3.1	MSETCL	Commissioning Certificate for the project activity by MSETCL for synchronisation to grid as First JMR of project activity	27/07/2011	Other: MSETCL
3.2	MSEB	Power Purchase Agreements (PPA) for the project activity between DLHPPL and MSEB AND Irrigation department, Government of Maharashtra	21/01/1999	PP
3.3	DLHPPL	Monthly Joint Meter Reports (JMRs) signed by MSEDCL	27/07/2015 to 31/10/2016	PP
3.4	DLHPPL	Power Supply bills towards MSETCL raised	27/07/2015 to 31/10/2016	PP

3.5	DLHPPL	Diesel consumption data maintained on monthly basis	27/07/2015 to 31/10/2016	PP
3.6	DLHPPL	Diesel consumption daily log book records	27/07/2015 to 31/10/2016	PP
3.7	DLHPPL	Machine Tripping Outage Details	27/07/2015 to 31/10/2016	PP
3.8	DLHPPL	Sample copy for Daily Energy & log Sheet	27/07/2015 to 31/10/2016	PP
3.9	APPLUS LGAI	CDM Verification Site Visit Photograph	29/12/2016 to 30/12/2016	Other: DOE
3.10	APPLUS LGAI	CDM Verification Site Visit Attendance Records	29/12/2016 to 30/12/2016	Other: DOE
4.	**ER calculation and cross checking issue**			
4.1	DLHPPL	Emission reduction calculation sheet version 1.0	28/11/2016	PP
4.2	DLHPPL	Emission reduction calculation sheet version 2.0	27/01/2017	PP
5.	**Calibration issues**			
5.1	MSETCL	Calibration test certificates for energy meters	27/07/2015 to 31/10/2016	Other: MSETCL
6.	**Procedures and standards**			
6.1	DLHPPL	Training Records	27/07/2015 to 31/10/2016	PP
7.	**Legislative Conformance**			
	None	None		
8.	**Others**			
8.1	CEA	CEA database version 10.0 available at http://www.cea.nic.in/	16/12//2014	Other: CEA

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. Remaining FAR from validation and/or previous verification

FAR ID	N/A	**Section no.**	N/A	**Date:**N/A
Description of FAR				
N/A				
Project participant response				**Date:**N/A
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				**Date:**N/A
N/A				

Table 2. CL from this verification

CL ID	N/A	**Section no.**	N/A	**Date:**N/A
Description of CL				
N/A				
Project participant response				**Date:**N/A
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				**Date:**N/A
N/A				

Table 3. CAR from this verification

CAR ID	01	**Section no.**	E.1	**Date:**04/01/2017
Description of CAR				
The PP is requested to provided details of the number of interruptions hours in monitoring report as mentioned in section C of MR.				
Project participant response				**Date:** 27/01/2017
PP has revised the Section C of the MR to incorporate the details of the number of interruption hours under “Trippings due to grid failure”, which is now in line with the registered PDD monitoring plan.				
Documentation provided by project participant				
Revised MR version 2, dated 27/01/2017				
DOE assessment				**Date:** 10/02/2017
The PP has provided the incorporate the details of the number of interruption hours under “Trippings due to grid failure” in section C of the revised MR and same was checked and found to be correct, hence accepted. Hence, the CAR#1 was closed satisfactorily.				

CAR ID	02	**Section no.**	E.6	**Date:** 04/01/2017
Description of CAR				
The details of energy meters is not provided in section C of MR and section D.2 of MR as per requirement of MR filling guideline which says “For “Monitoring equipment” in the table, provide information on type, accuracy class, serial number, calibration frequency, date of last calibration and validity.” Also, there is no information about energy meters in any Appendix of MR as mentioned in foot note 3, please clarify?				
Project participant response				**Date:**27/01/2017
PP has revised the Monitoring Report to furnish the details of Energy Meters under Appendix 3. Also foot note references are included in the Section C & Section D.2 of the MR for further reference. The revision is now in line with the MR filling guideline.				
Documentation provided by project participant				
Revised MR version 2, dated 27/01/2017 Meter testing certificates.				
DOE assessment				**Date:**10/02/2017

The PP has revised the Monitoring Report to furnish the details of Energy Meters under Appendix 3. Same was verified from calibration certificates and found to be correct, hence accepted. Accordingly, the PP has corrected the information about energy meter in foot note, now details are provided in Appendix 3 of the MR.

Based on response and review of the revised MR and assessment team has found the MR/1.2/ is appropriately revised for consistency with meter calibration details. Hence, the CAR#2 was closed satisfactorily.

CAR ID	03	**Section no.**	E.1	**Date:** 24/02/2017
Description of CAR				
1. Please correct the end date of 3rd CP in section A.5 of MR. 2. The PP is requested to clarify why the changes to registered PDD in section B.2.6 of the MR. 3. The PP is requested to include appropriate value in section E.4 of the MR as same is left blank.				
Project participant response				**Date:**24/02/2017
1. The end date of the third Crediting Period has been corrected in the MR, section A.5 2. There was a change to the registered PDD witnessed during the first verification of the 2nd crediting period which was approved by CDM EB on 16/10/2010. And there is no change to project design during the current monitoring period. Hence, the information was not included under the section B.2.6 of the MR. However, the information related to changes to the registered PDD is now included under the section B.2.6 of the MR to keep transparency. Revised MR is submitted. 3. The appropriate values are included in the section E.4 of the revised MR.				
Documentation provided by project participant				
Revised MR, version 03, dated 24/02/2017.				
DOE assessment				**Date:**26/02/2017
1. The PP has corrected the end date of the third Crediting Period in section A.5 in revised MR Version 03. Same was checked and found to be corrected, hence accepted. 2. The PP has clarified that there was a change to the registered PDD witnessed during the first verification of the 2nd crediting period which was approved by CDM EB on 16/10/2010. Thereafter, there is no change to project design during the current monitoring period. Now the same is included in section B.2.6 of the revised MR version 03. This is found to be correct, hence accepted. 3. The PP has provided appropriate values in the section E.4 of the revised MR Version 03. Same was found to be correct, hence accepted. Based on review of response and revised MR, assessment team confirm that MR is appropriately correct and hence accepted. Hence, the CAR#3 was closed satisfactorily.				

Table 4. FAR from this verification

FAR ID	N/A	**Section No.**	N/A	**Date:**N/A
Description of FAR				
N/A				
Project participant response				**Date:**N/A
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				**Date:**N/A
N/A				

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Document information

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