Validation report form for renewal of crediting period for CDM project activities

(Version 01.0)

VALIDATION REPORT FOR RENEWAL OF CREDITING PERIOD (RCP)	
Title of the project activity	Baragran Hydro Electric Project, 3.0 MW (being expanded to 4.9 MW)
Reference number of the project activity	1253
Number and duration of the next crediting period	Crediting Period No.: 02 Duration: 29/10/2015 - 28/10/2022(first and last days included)
Version number of the validation report for RCP	01.1
Completion date of the validation report for RCP	12/03/2016
Version number of PDD to which this report applies	08.0
Project participant(s)	- KKK Hydro Power Limited - Bunge Emissions Fund Limited
Host Party	India
Sectoral scope(s), selected methodology(ies), and where applicable, selected standardized baseline(s)	Sectoral scope : 01, Energy Industries (renewable/non-renewable sources) Selected Methodology: AMS-I.D. - Grid connected electricitygeneration, version 18.0 Selected standardized baseline: N/A
Estimated annual average GHG emission reductions or net anthropogenic GHG removals in the next crediting period	25,967 tCO_{2e}
Name of DOE	LGAI Technological Center, S.A. (Applus)
Name, position and signature of the approver of the validation report for RCP	Assessment team: Vivek Kumar Ahirwar (Team Leader / Leader Auditor) DOE Representative (1): Miquel Sitjes Cabanas (CDM Technical Manager)

	DOE Representative (2): Natalia Rodrigo Vega (CDM Project Activity Manager) B.U. Systems Certification Area Manager: Juan Sendín Caballero

SECTION A. Executive summary

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LGAI Technological Center, S.A. (hereafter referred to as Applus+ LGAI) has been contracted by KKK Hydro Power Limited (KKKHPL) to perform a validation of renewal of crediting period of the "Baragran Hydro Electric Project, 3.0 MW (being expanded to 4.9 MW)" in India (Ref. No. 1253, hereafter referred to as "the project activity").

The assessment was performed in accordance with the CDM VVS version 09.0 and the CDM PS version 09.0 including an assessment of:

a) An impact of new relevant national and/or sectoral policies and circumstances on th ebaseline taking into account relevant guidance from the Board with regard to renewal of the crediting period at the time of requesting renewal of crediting period;

b) The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.

The main objective of validation of renewal of crediting period as provides an independent third party assessment of validity of the updated sections of the PDD of project that has opted for a renewal of the crediting period. The validation assessment of the baseline of project activity, estimated GHG emission reductions or net anthropogenic GHG removals, the monitoring plan and the crediting period using the valid version of the approved baseline and monitoring methodology. The assessment team has, based on the instructions in the VVS version 09.0 /2.1/ employed a risk-based and step-wise approach when conducting the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

In an E-mail/3.3/ sent on 28/01/2015 to the CDM Registration and Issuance Team of UNFCCC, the project participants expressed their intention to request a renewal of crediting period for the project activity in accordance with the CDM PCP version 09.0 /2.8/.

In response to this mail ; the PP has received acceptance confirmation Email /3.4/ on02/02/2015 from UNFCCC secretariatfor the same; which has been verified by validation assessment team and found to be correct and accepted accordance to CDM PCP version 09.0§§291.

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

The validation has been performed the identification whether the PP has updated sections of the PDD relating to the baseline, estimated GHG emission reductions or net anthropogenic GHG removals, the monitoring plan and the crediting period using the valid version(s) of the approved baseline and monitoring methodology.

Therefore, the validation report is based on the assessment of the project design document undertaken through project stakeholder consultations, application of standard auditing techniques. The validation process consisted of the following three phases:

1. Desk review of the project design and baseline and monitoring plan;
2. Follow-up interview with project stakeholders;
3. Resolution of outstanding issues and the issuance of the final validation report and opinion.

In the course of the validation, 1 Corrective Action Request (CAR) and 1 Clarification Request (CL) and No Forward Action Request (FAR), were raised for the Project PDD (version 08, dated 16/02/2016) /1.3/ in relation to all relevant CDM requirements. Until issuance of this version of validation report, the raised CAR and CL were successfully closed.

Based on the review of the PDD (version 08) /1.3/ and additional background documents, the subsequent follow up interviews, together with the review of comments by Parties and Stakeholders, have provided,Applus+ LGAI with sufficient evidence to confirm that the project has satisfied the stated criteria.

The validation covered all project components and issues that need to be validated for the renewal of crediting period as a CDM project. Applus+ LGAI hereby confirms that the project correctly applied the baseline and monitoring methodology AMS-I.D. (Version 18.0) /2.3/ and meets the relevant UNFCCC requirements for the renewal of the crediting period.

Applus+ LGAI hereby requests the renewal of crediting period of the project. Provided that the project is implemented and maintained as designed, the project is expected to achieve annual average emission reduction of 25,967tCO_2e within the 2nd crediting period (7years, 29/10/2015 - 28/10/2022).

SECTION B. Validation team, technical reviewer and approver

B.1. Validationteam member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Validationfindings
1.	Team Leader /Technical / Financial Expert	OR	Ahirwar	Vivek Kumar	GCEES	Y	Y	Y	Y

Note: IR: Internal Resources, EI: External Individuals, OR: Outsourced Resource.

B.2. Technical reviewer and approver of the validation report for RCP

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	Shen	Meng (Simon)	Applus+ LGAI
2.	Approver	IR	Caballero	Juan Sendín	Applus+ LGAI

Note: IR: Internal Resources, EI: External Individuals, OR: Outsourced Resource.

SECTION C. Means of validation

C.1. Desk review

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The Project Design Document submitted by the Project Participant was reviewed against the approved methodology and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of documents reviewed or referenced is available in Appendix 3 of this report.

C.2. On-site inspection

Duration of on-site inspection:20/01/2015				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	Status of the project activity and any modifications with respect to the registered PDD.	Village - Patlikuhl, District - Kullu, Himachal Pradesh, India	20/01/2015	Vivek Kumar Ahirwar
2.	Applicability to the latest methodology		20/01/2015	Vivek Kumar Ahirwar
3.	National and local policies and changes (if any)		20/01/2015	Vivek Kumar Ahirwar
4.	Baseline of the project and its updates (if any)		20/01/2015	Vivek Kumar Ahirwar
5.	The lifetime of the project activity		20/01/2015	Vivek Kumar Ahirwar
6.	Emission Factors and their updates(if any)		20/01/2015	Vivek Kumar Ahirwar
7.	Monitoring plan and changes (if any)		20/01/2015	Vivek Kumar Ahirwar

C.3. Interviews

No.	**Interviewee**			**Date**	**Subject**	**Team member**
	Last name	**First name**	**Affiliation**			
1.	Kumar	Satish	Executive Director / KKKPHL	20/01/2015	Status of the project activity and any modifications with respect to the registered PDD.	Vivek Kumar Ahirwar
2.	Sharma	Om Prakash	Plant In-Charge/ KKKPHL	20/01/2015	Applicability to the latest methodology.	Vivek Kumar Ahirwar
3.	Sharma	Mukesh Kumar	Plant Manager/ KKKPHL	20/01/2015	National and local policies and changes Baseline of the project and its updates	Vivek Kumar Ahirwar
4.	Kumar	Akhiesh	Manager Admin/ KKKPHL	20/01/2015	The lifetime of the project activity Emission Factors and their updates Monitoring plan and changes.	Vivek Kumar Ahirwar

C.4. Clarification requests, corrective action requests and forward action requests raised

Area of validation findings	**No. of CL**	**No. of CAR**	**No. of FAR**
Compliance with PDD form	01	01	-
Application of baseline and monitoring methodology and standardized baseline	-	-	-
Validity of original baseline or its update	-	-	-
Estimated GHG emission reductions or net anthropogenic GHG removals	-	-	-

Validity of monitoring plan	-	-	-
Crediting period	-	-	-
Project participants	-	-	-
Others (please specify)	-	-	-
Total	01	01	-

SECTION D. Validation findings

D.1. Compliance with PDD form

Means of validation	In according to VVS version09.0§§435, theassessment team cross-checked and compared the revised PDD /1.3/ by employing the valid Project design document form listed in UNFCCC website. Besides, the validation team compared the information transferred to the valid version of the PDD /1.3/ with that in the registered PDD /1.1/. The final PDD (Version 08.0 dated 16/02/2016) /1.3/ used the latest valid version of the applicable Project design document form (version 06.0) /2.7/ at UNFCCC website.The final PDDis complete and meet all relevant requirements of instructions for filling out the Project design document form(version 06.0) for CDM project activities and “Clean development mechanism project standard” (version 09.0) /2.2/. The project activity has an installed total capacity of 4.9 MW (3 MW + 1.9 MW) run-of-the-river small scale hydro power project to export clean power to Himachal Pradesh State Electricity Board (HPSEB) grid. The project was implemented and equipment installed as described in the registered PDD (UNFCCC ref. no 1253). This was verified during the site visit performed by the assessment team on 20/01/2015. This is the Validation of renewal of crediting period of project activity and it covers the crediting period starting from 29/10/2015 up to 28/10/2022. The start date of this crediting period is after the end date of the last crediting period. The project activity was commissioned on a phase by phase basis. The first phase consists of the commissioning of two units with a capacity of 1.5 MW each. Unit – I was commissioned on 05/08/2004 and then Unit II was commissioned on 19/09/2004. Then another 1.9 MW Unit was added during phase II. This was commissioned on 14/07/2008. Thus the total project capacity of the project activity was verified as 4.9 MW. During the site visit, the project participant provided the Commissioning Certificates /3.1/ as an evidence of the date of commissioning. Based on the examination of these commissioning certificates/3.1/and the on-site inspection of project activity, the assessment team has confirmed that the project activity has installed and operated as per the registered PDD /1.1/ and the technical characteristics of the hydro plant were also found to be consistent with the specification in the registered PDD /1.1/. During the site visit, it was confirmed that all physical features of the proposed CDM project activity are implemented in accordance with the registered PDD /1.1/. No events or situations that may impact the applicability of the methodology occurred during this monitoring period, which was confirmed by checking the operational logbook and interviewing the PP. There were no changes in the project activity from the previous crediting period. Based review of the PPA /3.2/ signed with the HPSEB, it is confirmed that the project has been connected with the NEWNE regional Grid of India (Northern grid is part of NEWNE regional gird) in accordance with the description in the registered PDD /1.1/. There are no other sources of GHG emissions attributable to the project activity confirmed during site visit. Therefore, the project boundary was confirmed to be in conformance with the description in the registered PDD /1.1/. The project activity is a small scale project and is not a de-bundled component of the larger project and same has been mentioned in the section A.6 of PDD as accordance to latest PDD template. Validation team has reviewed “Guidelines on assessment of de-bundling for SSC project activities” Version 03, and also carried out Interview during the site visit to confirm the applicability criteria for De-bundling aspect of the project. It is concluded that the small scale project activity is not a de-bundled component of a larger project activity as accordance with the requirements established in VVS version 09.0 §§189.

	Therefore, Applus+ LGAI confirms that the Project Description in Section A of the final PDD (Version 08.0) was consistent with the registered PDD/1.1/, the corresponding validation report /1.5/), monitoring reports and corresponding verification reports /1.4/ for the 1st crediting period.
Findings	**Clarification RequestNo. 1:** CL#1 was raised as the Project Participant was requested to submit some supporting evidence which confirm that the notification has been sent to secretariat of their intention in accordance with the Project cycle procedure. In response, the PP has submitted theE-mail /3.3/ sent on 28/01/2015 to the CDM Registration and Issuance Team ofUNFCCC. Theassessment team verified that the project participants expressed their intention to request a renewal of creditingperiod for the project activityin accordance with the CDM PCP version 09.0. Also, the PP has received acceptance confirmation email/3.4/ on 02/02/2015 from UNFCCC secretariat for the same; which has been verified by validation assessment team and found to be correct and accepted accordance to CDM PCP version 09.0 §§ 291. Hence, CL#1 is closed satisfactorily. **Corrective Action Request No. 1:** CAR#1 is raised as the PP was requested to clarify that the section A.1 of the PDD is not discussed about the information for the monitoring period from 01/01/2014 to 28/10/2015. In response, the PP has submitted the revised PDD/1.3/ which includes requested information, same was verified and found to be appropriately corrected, and hence CAR #1 is closed satisfactorily.
Conclusion	Applus+ LGAI confirms that the final PDD/1.3/ was compliance with relevant valid version of project design document form and instructions therein for filling out PDD; the information transferred to the valid version of the PDD is materially the same as that in the registered PDD. Therefore, CDM requirements stipulated under VVS Version 09.0 §§445(a)-(i) and (ii) is satisfied completely.

D.2. Application of baseline and monitoring methodology and standardized baseline

Means of validation	Through document review and site visit interview, the assessment team re-assessed the applicability of baseline, monitoring methodology and standardized baseline in the methodology based on the knowledge of the project from the initial validation, subsequent verifications and the confirmation from the PP. The project was originally registered based on methodology AMS I.D. version 11.0.0. The updated PDD version 08 dated 16/02/2016 applies methodology AMS I.D. version 18.0.0. This is appropriate because the methodology AMS I.D. version 18.0.0 is of its latest approved version of methodology applied in the original PDD and is valid at the time of submission of the revised PDD for the renewal of the crediting period; hence it meets the condition that for renewal of the crediting period, the methodology shall not be changed. Following tools referred to by the methodology are also applied: - Tool to calculate the emission factor for an electricity system – Version 05.0.0, EB 87 annex 9/2.5/ - Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period." Version 03.0.1, EB 66 annex 47 /2.4/ - Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, Version 02". EB 41 annex 11 /2.9/ The methodology and the applied tools are valid as of the finalization of the validation report. The title, reference as well as version number is correctly provided in revised PDD/1.1/ for the renewal of the crediting period. The applicability of the baseline and monitoring methodologyis justified in the revised PDD for the renewal of the crediting period. The applied baseline methodologyis justified as it has been demonstrated that the project activity is: AMS-I.D. Version 18.0.0 §§ 02: "*This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:* *(a) Supplying electricity to a national or a regional grid; or* *(b) Supplying electricity to an identified consumer facility via national/regional*

grid through a contractual arrangement such as wheeling."

The project activity is a grid connected hydro power project and therefore is a renewable energy project. The project activity supplies electricity to Third party/ HPSEB, which is a part of NEWNE regional grid of India which is dominated by fossil fuel based power generating sources. Therefore, the project activity meets this applicability requirement (a) & (b) both. The use of hydro turbines for power generation was confirmed during the site visit. The grid connectivity of the project was verified through PPA /3.2/ and same has been verified during site visit observation and discussion with the PP.

AMS-I.D. Version 18.0.0 §§ 03: "*Illustration of respective situations under which each of the methodology (i.e. "AMS-I.D.: Grid connected renewable electricity generation", "AMS-I.F.: Renewable electricity generation for captive use and mini-grid" and "AMS-I.A.: Electricity generation by the user) appliesis included in the appendix.*"

The project activity complies with the applicability this criteria of the baseline and monitoring methodology AMS I. D. Version 18.0.0 as:

(a) The Project supplies electricity to Third party/ HPSEB grid, which is a part of NEWNEregional grid, therefore methodology AMS-I.D is applicable. This was also verified through PPA/3.2/ during the site visit and hence accepted.

(b) The project does not displace grid electricity consumption (e.g. grid import) and/or captive fossil fuel electricity generation at the user end (excess electricity may be supplied to a grid), also the project does not supply electricity to a mini grid system where in the baseline all generators use exclusively fuel oil and/or diesel fuel so methodology AMS-I.F is not applicable.

(c) The project does not supplies electricity to household users (included in the project boundary) located in off grid areas so methodology AMS-I.A is not applicable.

AMS-I.D. Version 18.0.0 §§ 04: "*This methodology is applicable to project activities that (a) install a Greenfield plant; (b) involve a capacity addition in (an) existing plant(s); (c) involve a retrofit of (an) existing plant(s); (d) involve a rehabilitation of (an) existing plant(s)/unit(s); or (e) involve a replacement of (an) existing plant(s)."*

The Commercial Operation Certificates /3.1/ issued for the project activity indicates that the project activity is a Greenfield plant. Thus option (a) is applicable to project activity. It is not a capacity addition or retrofit or rehabilitation or replacement as defined in the methodology.

AMS-I.D. Version 18.0.0 §§ 05: *"Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:*

a) The project activity is implemented in an existing reservoir with no change in the volume of reservoir;

b) The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m^2;

c) The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m^2."

The project activity is a run-of-the-river development envisaging utilization of surplus water available in Sanjoinnala.Hence; the applicability criterion is not applicable to project activity as there is no reservoir for project activity. This was verified during the site visit /3.5/ and hence accepted.

AMS-I.D. Version 18.0.0 §§ 06: "*If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW."*

The project activity only has renewable components as confirmed in AMS-I.D. Version 18.0.0 §§ 02 as above. The installed capacity of the project is 4.9 MW which is well below to the threshold of 15 MW for small-scale projects. The installed

	capacity was verified from the Commercial Operation Certificates /3.1/ and PPA/3.2/. AMS-I.D. Version 18.0.0 §§ 07: "*Combined heat and power (co-generation) systems are not eligible under this category."* The project activity is a hydro power project and thus does not involvecombinedheat and power generation systems. This was verified during the site visit/3.5/ and hence accepted. AMS-I.D. Version 18.0.0 §§ 08: *"In the case of project activities that involve the capacity addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units."* This criterion is not applicable since the project is a Greenfield plant as discussed under AMS-I.D. Version 18.0.0 §§ 04 as above. AMS-I.D. Version 18.0.0 §§ 09: "*In the case of retrofit, rehabilitation or replacement, to qualify as a small-scale project, the total output of the retrofitted, 9ehabilitated or replacement power plant/unit shall not exceed the limit of 15 MW."* This criterion is not applicable since the project is a Greenfield plant as discussed under AMS-I.D. Version 18.0.0 §§ 04 as above. AMS-I.D. Version 18.0.0 §§ 10: *"In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. If the recovered methane is used for electricity generation for supply to a grid then the baseline for the electricity component shall be in accordance with procedure prescribed under this methodology. If the recovered methane is used for heat generation or cogeneration other applicable Type-I methodologies such as "AMS-I.C.: Thermal energy production with or without electricity" shall be explored."* This is not relevant to the project activity since the project activity a small hydro power project as discussed under AMS-I.D. Version 18.0.0 §§ 04 as above. AMS-I.D. Version 18.0.0 §§ 11: *"In case biomass is sourced from dedicated plantations, the applicability criteria in the tool "Project emissions from cultivation of biomass" shall apply."* This is not relevant to the project activity since the project activity a small hydro power project as discussed under AMS-I.D. Version 18.0.0 §§ 04 as above. The assessment team has validated the documentation referred to in the PDD and verified the documentation content for verifying the justification of the applicability of the methodology and confirmed that the documentation referred to in the PDD is correctly quoted and interpreted. The assessment team has also crosschecked the information provided in the PDD with the documentation other than from the PDD based on the local and sectoral knowledge of the assessment team. Following documentation has been reviewed by the assessment team: - Commercial Operation Certificates /3.1/ - Power Purchase Agreement with Third party/ HPSEBgrid, which is a part of NEWNE regional grid/3.2/ Therefore, the applied methodology AMS-I.D, version 18.0 is applicable to the project activity.
Findings	No non-conformability was observed during assessment for application of baseline and monitoring methodology and standardized baseline against applied monitoring methodology. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the project meets each of the applicability conditions of the methodology; it also meets all the other stipulations and limitations mentioned in the other sections of the applied methodology; the continued validity of the baseline is assessed and the emissions which would be resulted from the baseline scenario are updated at the start of the 2nd crediting period, as per the requirements of AMS-I.D, version 18.0. Therefore, CDM requirements stipulated under VVS Version 09.0 §§445(a)-(iii) is satisfied completely.

D.3. Validity of original baseline or its update

Means of validation	In according to VVS version09.0§§436, The assessment team reviewed the updated PDD version 08, and evaluated whether project participants assess and incorporate the impact of national and/or sectoral policies and circumstances existing at the time of requesting renewal of the crediting period on the current baseline GHG emissions, without reassessing the baseline scenario. Where data and parameters used for determining the original baseline that was determined ex ante (and not monitored during the crediting period) are no longer valid, the assessment team identified whether PP update such data and parameters in accordance with the Methodological Tool "*Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period*". Applus+ LGAI confirms that there have been no changes in the relevant national and/or sectoralregulations on construction of hydro projects to generated electricity from run of the river scheme and sell to third party/HPSEB grid, which is a part of NEWNEregional grid since the previous crediting period. On theother hand, the baseline scenario for construction of hydro projects to generated electricity from run of the river scheme and sell to third party / HPSEB grid, which is a part of NEWNE regional grid, was still valid according to methodology AMS-I.D., version 18.0.0. As demonstrated in the registered PDD, the baseline scenario for the Project is continuous operation of the existing power plants to meet electricity demand. As per AMS-I.D., version 18.0.0 §§ 19, "*The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid."* The baseline for the Project remains the same as that in the registered PDD. In the absence of project activity, the same amount of electricity would otherwise have been generated by the operation of some grid connected fossil fuel based power plants or newly added generation sources into NEWNE grid. A verifiable description of the baseline scenario has been included in the final PDD. The information presented in the PDD has been validated by an initial document review of all data. Further confirmation has been made based on the on-site visit and a review of information from similar projects and/or technologies. The sources referenced in the PDD have been quoted correctly. The information was verified against credible sources, such as the following: - Commercial Operation Certificates /3.1/ - Power Purchase Agreement with third party/state electricity board /3.2/ - CEA guidelines (CO_2 Baseline Database for the Indian Power Sector, Version 10.0) /5.1/ The steps from the Methodological Tool"Assessment of the validity of the original/current baseline and update of the baseline at therenewal of the crediting period"as per CDM VVSversion 09.0.0 wereapplied to assess the continued validity of the baseline and/or to updatethe baseline at the renewal of a crediting period: **Step 1: Assess the validity of the current baseline for the next crediting period** The CDM PS (version 09.0) requires assessing and incorporating the impact of new relevant national and/or sectoral policies and circumstances existing at the time of requesting renewal of the crediting period on the current baseline GHG emissions, without reassessing the baseline scenario. The validity of the current baseline is assessed using the following Sub-steps: **Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies** Applus+ LGAI has confirmed that The current baseline remains the same as it was in the registered PDD and no relevant mandatory national and/or sectoral polices applicable to the project activity came into effect after the submission of the project activity for validation. Based on the experience, there are no relevant mandatory national and/or sectoral polices forbidding equivalent electricity generated by the project activity is supplied by NEWNE Grid which is current baseline of the project activity. Therefore, baseline

scenario remains unchanged and is in compliance with all the relevant mandatory national and/or sectoral policies.

Step 1.2: Assess the impact of circumstances

The assessment team has confirmed that the baseline scenario as identified at the time of validation of the project activity was the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid. Thus, assessment team has confirmed that the project activity was a voluntary investment which intends to replace equivalent amount of electricity at grid from renewable source. The investment does not lead to any continued baseline practice for the PP within their scope whereas the continued operation of the project activity would continue to replace equivalent amount of electricity at grid. Hence, the same baseline as identified in the previous crediting period is still valid for the project. Therefore, the assessment of the changes in market characteristics is not required for the renewal of the project's crediting period under CDM.

Furthermore, the assessment team has verified that the PP has considered the latest available CO_2 Baseline Database (CEA database, version 10)/5.1/ at the time of requesting renewal of the crediting period for establishing the baseline emission factor, which itself considered all the new circumstances. Hence, the new circumstances do not have an impact on the baseline emission.

As per the requirement of the sub-step, it has been assessed that there were no impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline scenarios.

Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investmentis the most likely scenario for the crediting period for which renewal is requested

It is clear that the grid equipments as a system has longer lifetime further confirmed by the project owner through the site visit interview and will exceed the next 7-year crediting period. Hence, this sub step is not applicable, as the baseline scenario is electricity provided by the grid and the project participant or third party (or parties) would not undertake an investment later due.

Step 1.4: Assessment of the validity of the data and parameters

The CEAemission factor calculated ex-ante for the 1stcrediting period needs to beupdated, as per the "Tool to calculate the emission factor for an electricity system" /2.5/, the most recent information available should be used to update the emission factor at the start of the 2nd crediting period. Hence, the emission factor needs to be updated accordingly and consequently.This parameter is properly described in the following section D.4 of this report.

Conclusion on step 1:

Applus+ LGAI confirms that the current baseline is still valid as per methodology AMS-I.D., version 18.0.0. However the grid emission factor needs to be updated for the subsequent creditingperiod.

Step 2: Update the current baseline and the data and parameters

Step 2.1: Update the current baseline

As the baseline scenario of the project activity is still sustained in this crediting period, no update would be required. The baseline emission factor is updated as per the latest version available at the time of PDD submission for renewal.The approved baseline methodology has been correctly applied to identify a complete list ofrealistic and credible baseline scenarios, and the identified baseline scenario most reasonablyrepresents what would occur in the absence of the proposed CDM project activity.Applus+ LGAI considers the baseline scenario is realistic and credible.

In regard to requirement of VVS09.0.§§105, Applus+ LGAI is able to confirm the following statements:

	(a) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources; (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD; (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence, and can be deemed reasonable; (d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD; *(e)* The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario, and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity. **Step 2.2: Update the data and parameters** The CEA emission factor will be updated ex-post, as described in section D.4 of thisreport.The parameters described under step 1.4 were properly updated considering the latest versionsof methodology AMS-I.D., version 18.0.0 and IPCC 2006 Guidelines/2.6/ etc.
Findings	No non-conformability was observed during assessment of validity of original baseline or its update against. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that there have been no changes in the relevant national and/or sectoral regulations on building a hydropower project for exporting electricity to power grid since the previous crediting period. On the other hand, the baseline scenario for the project remains the same as that *in the registered PDD as "Electricity delivered to HPSEB by the Project that would otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid". Th*e assessment of continued validity of the current baseline scenario and update of the baseline emissions are complied with Methodological Tool "*Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period version 03.0.1*" as per VVS version 09.0. In line with PS version 09.0§§301, the demonstration of the validity of the original baseline or its update does not require a reassessment of the baseline scenario, but rather an assessment of the GHG emission reductions that would have resulted from that scenario.

D.4. Estimated GHG emission reductions or net anthropogenic GHG removals

Means of validation	The calculation of the emissions reductions exactly follow the procedures described in the methodology AMS-I.D., version 18.0.0 and relevant tool, e.g. the "*Tool to calculate the emission factor for an electricity system*". Applus+ LGAI has assessed the calculation of project emissions, baseline emissions, leakage emissions and emission reductions. Corresponding calculations have been carried out based on calculation spreadsheet. The consistency of the parameters and equations presented in PDD, as well as calculation spreadsheet etc., has been compared with the information and requirements presented in the methodology and respective tools. The assumptions and data used to determine the emission reductions are listed in the PDD and all the sources have been checked.Based on the information reviewed it is confirmed that the sources used are correctly quoted and interpreted in the PDD.The values presented in the PDD are considered reasonably based on the documentation and references reviewed and the results of the interviews. The estimation of the emission reductions are considered correct as the calculations have been reproduced by the assessment team with the attainment of the same results. The algorithms for the determination of the baseline, project, and leakage are discussed in the following sections. The emission reductions are calculated by the difference between baseline emissions (Bey), project emissions (PE_y) and Leakage (LE_y). 2.. **Baseline emissions:** As per the methodology AMS-I.D. version 18.0.0 §§ 22: "*Baseline emissions include only CO2 emissions from electricity generation in power plants*

that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants. The baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} * EF_{grid,y}$$

Where:

BE_y	*Baseline Emissions in year y (t CO2)*
$EG_{PJ,y}$	*Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh)*
$EF_{grid,y}$	*Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (t CO2/MWh)*

The baseline emissions equivalent to tCO_2 due to the project have been calculated as the product of the net electricity supplied to the grid and the grid emission factor as per the combined margin approach described in the 'Tool to calculate the emission factor for an electricity system' . The power produced will be exported to the NEWNE regional grid. Hence, the grid emission factor and the corresponding baseline emissions have been calculated for the NEWNE regional grid.

The emission factor has been calculated as per methodology AMS-I.D. Version 18.0.0 §§ 23:

"*The Emission Factor shall be calculated in a transparent and conservative manner as follows:*

2.. *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'.*"

The NEWNE regional grid has been correctly identified for the calculation of electricity emission factor, as the project displaces electrical energy from NEWNE grid, as per the CEA database version 10. This CEA database version was published in 16/12/2014 and it was the latest available version at the time of requesting renewal of the crediting period. This has been found to be in compliance with the "Tool to calculate the emission factor for an electricity system" (version 05.0.0), which states that *"If the DNA of the host country has published a delineation of the project electricity system and connected electricity systems, these delineations should be used"*. Thus, the Project Participant has considered the regional grid that is delineated by the Central Electricity Authority of India which was found to be correct and acceptable. The values of OM and BM have been determined ex-ante as per the CEA database version 10published on16/12/2014, which is published by the Ministry of Power, Government of India/5.1/.

As per the Tool to calculate the emission factor for an electricity system Version 05.0.0 /2.5/, "*Regional or national average default values* can be used for calculation of CO_2 Emission Factor *if values are reliable and documented in regional or national energy statistics / energy balances".* The CEA is the sole authority for publication of such data in India and hence, accepted. The assessment team verified that the parameters are determined ex-ante:

Parameter	***Value***	***Source***	***Means of validation***
$EF_{gridOM,y}$ = Operating Margin Emission Factor for NEWNE grid in year y	0.9857 tCO_2/MWh	Baseline Carbon Dioxide Emission Database Version 10.0 from the Central Electricity Authority (CEA), Ministry of Power, Government of India /5.1/	Verified value against default value listed in CEA database version 10 dated 16/12/2014 /5.1/
$EF_{gridBM,y}$ = Build Margin Emission Factor for NEWNE grid in year y	0.9495 tCO_2/MWh	Baseline Carbon Dioxide Emission Database Version 10.0 from the Central Electricity Authority (CEA), Ministry of Power, Government of India. /5.1/	Verified value against default value listed in CEA database version 10 dated 16/12/2014 /5.1/
$EF_{gridCM,y}$ =	0.9586	Calculated as the weighted	Verified value against

Combined Margin Emission Factor for NEWNE Grid in year y	tCO_2/MWh	average of the operating margin and build margin. Baseline Carbon Dioxide Emission Database Version 10.0 from the Central Electricity Authority (CEA), Ministry of Power, Government of India. /5.1/	calculation provided in the PDD.

The OM has been determined as the average of the previous 3 years values mentioned in the CEA database. The value of BM has been identified directly from the CEA database/5.1/. The combined margin emission factor has been arrived at by applying weights of 25% for OM and 75% from BM, as specified in the tool version 05.0, §§ 84 (b) for second crediting period for all other projects i.e. hydro project.

The baseline emissions for the project activity have been calculated as per AMS I.D. Version 18.0.0 §§ 22. The PP has rounded down the value of total baseline emissions in order to be conservative. The baseline emissions for the project activity have been calculated to be 25,967 tCO_2 per year.

Applus+ LGAI confirms that all data sources and assumptions are appropriate and calculations are correct, applicable to the proposed CDM project activity and will result in a conservative estimate of the emission reductions.

(2) Project emissions:

AMS-I.D. Version 18.0.0 §§ 39, *for most renewable energy project activities, Pey = 0. However, for the following categories of project activities, project emissions have to be considered following the procedure described in the most recent version of ACM0002.*

a) Emissions related to the operation of geothermal power plants (e.g. non-condensable gases, electricity/fossil fuel consumption)

b) Emissions from water reservoirs of hydro power plants"

The project activity involves a run of the river scheme utilising the water of Sanjoinnala, a tributary of the Beas river near the village Patlikuhal in Kullu District of Himachal Pradesh State. The objective of the project activity is to harness renewable energy in the form of Hydro potential for supplying power to the state grid. The project activity is not a geothermal application and nor it is a water reservoir based hydro power project. Therefore no project emissions associated with this project activity.

AMS-I.D. Version 18.0.0 §§ 41;*In case biomass is sourced from dedicated plantations, the procedures in the tool "Project emissions from cultivation of biomass" shall be used.*

The project activity is not a biomass project, neither a geothermal application and nor it is a water reservoir based hydro power project. The project activity is first of its kind small hydro project Therefore no project emissions associated with this project activity.

(3) Leakage emission:

Leakage has not been considered for the project activity. In accordance to AMS I.D Version 18.0.0 §§ 22; "*General guidance on leakage in biomass project activities shall be followed to quantify leakages pertaining to the use of biomass residues".* The project activity uses new energy generating equipment which has been verified from the commercial operation certificate and onsite inspection. The guidance on leakage is provided for biomass project only but the project activity is first of its kind small hydro project. Hence, no leakage emission from this project activity has been considered.

(4) Emission reductions:

Based on the calculations and results presented in the sections above the implementation of the project activity will result in an average *ex-ante* estimation of emission reduction conservatively calculated to be 25,967 tCO_2e per year for the selected 7 years crediting period. Total emission reductions during the Second crediting period are estimated to be181,769tCO_2e. .

Findings	No non-conformability was observed during assessment for estimated GHG emission reductions or net anthropogenic GHG removals. Therefore, no finding was raised.

Conclusion	Applus+ LGAIhas assessed the calculations of project emissions, baseline emissions, leakage emissions and emission reductions. Corresponding calculations have been carried out based on calculation spreadsheets. The parameters and equations presented in the PDD, as well as other applicable documents, have been compared with the information and requirements presented in the methodology and respective tools. The assessment team has compared all the formulae to ensure consistency between those presented in the calculation files and in the PDD, methodology, and tools. This is found to be correct. In general, Applus+ LGAI is able to confirm the following: - All assumptions and data used by the project participants are listed in the PDD and/or supporting documents, including their references and sources; - All documentation used by the project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD; - All values used in the PDD are considered reasonable in the context of the proposed CDM project activity; - The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, and leakage emissions; - All estimates of the baseline, project and leakage emissions can be replicated using the data and parameter values provided in the PDD. Applus+ LGAI confirms that the baseline, the estimated GHG emission reductions in the updated PDD version 08 comply with the applicable requirements in the section 7.2.7 PS version09.0, and the valid version of the methodology applicable to the registered CDM project activity.

D.5. Validity of monitoring plan

Means of validation

The assessment team reviewed the updated PDD, checked whether the PDD update the monitoring plan section in accordance with all relevant applicable requirements in the PS; whether the PDD list all data and parameters to be monitored, as required by the applied methodology and whether the monitoring plan explained the operational and management structure, responsibilities and institutional arrangement for data collection/archiving, QA/QC procedures.
The project applies the approved consolidated monitoring methodology AMS-I.D version 18.0 for grid-connected electricity generation from renewable sources. As validated, the selected monitoring methodology is applicable for the project activity as it involves grid-connected renewable power generation using hydropower.

Following parameters will be monitored ex-post:

Parameters	Description	Measurement method and QA/QC procedures	Assessment conclusion
EG_{export}	Total electrical energy exported by the project activity	The data will be recorded by Main and Check meters of reputed make installed at the Himachal Pradesh State Electricity Board (HPSEB) grid substation. The meters will be calibrated and maintained by HPSEB. Records of monthly electricity sales bills will be used as evidence for power exported to HPSEB Grid. Main and Check meters of M/s L & T Make, Model No./Type No. AC – 3 Phase 4 Wire / Type – ER 300 P. Sealed meter installed. Monitored by HP State Electricity Board. The power export bills can be cross checked with monthly joint meter reading report duly verified and authorized by HP State Electricity Board.	Consistent with methodology/tool
E_{import}	Total electrical	The data will be recorded by	Consistent with

	energy imported by the project activity	duly tested and sealed meter installed. The meter will be calibrated and maintained by HPSEB. Records of monthly electricity sales bills will be used as evidence for power imported from the HPSEB grid. Total electrical energy imported will be monitored by duly tested and sealed meter installed. Monitored by HP State Electricity Board. The power export bills can be cross checked with monthly joint meter reading report duly verified and authorized by HP State Electricity Board.	methodology/tool
EG_y	Net electrical energy exported by the project activity	The data will be calculated and recorded by Himachal Pradesh State Electricity Board (HPSEB). Records of monthly electricity sales bills will be used as evidence for net power exported to HPSEB grid. The power export bills can be cross checked with monthly joint meter reading report duly verified and authorized by HP State Electricity Board.	Consistent with methodology/tool

All the relevant data records will be kept by the Project owner during the crediting period and two years after for DOE's verification. Data management and quality control measures have been confirmed with PP through on-site inspection and interview with the PP.Assessment team confirmed during site visit discussion that project is not involve any sampling plan in monitoring of project activity parameters ,hence section B.7.2 is not applicable for this project activity.

Implementation of the monitoring plan:

An organizational structure is provided in PDD. The functions such as data collection, aggregation, verification, calculation, archiving, as well as the maintenance of equipments etc. have been defined. Quality assurance and quality control procedures for recording, maintaining and data archiving etc. will be ensured according to CDM EB rules. The calibration of the meter will be implemented as per national standard. An emergency treatment process has been defined in PDD when the meter is in malfunction. Data management and quality control system are quoted in PDD. The monitoring staffs will be trained based on the training program described in PDD.

The procedures described in PDD have been recognized by the assessment team through document review and interviews with the relevant personnel. The information together with a physical inspection allows the assessment team to confirm that the proposed monitoring plan is feasible within the project design. It was verified the current monitoring scenario by the assessment team during site visit that the electricity is generated at 6.6 kV which is stepped up to 33 kV and further the electricity is supplied to the grid. For measuring the net energy supplied to the grid, one main meter and one check meter is connected. This scenario of monitoring systems will be valid throughout the 2nd crediting period.

The major parameters to be monitored have been discussed with the PP, especially regarding the location of the meters, the data management and in general the quality assurance and quality control procedures to be implemented in the context of the project.

Findings	No non-conformability was observed during assessment for monitoring plan against registered monitoring plan, actual monitoring practices followed as project site and monitoring methodology. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirms that the monitoring plan contains all necessary parameters

	which have been clearly described in PDD /1.3/ and that the means of monitoring described in the plan complieswith the requirements of the methodology. In conclusion, based on document review, onsite inspection and stakeholder interview, together based on local and sectoral expertise, Applus+ LGAI confirms that: 1. The monitoring plan of the PDD version 08 /1.3/ is in compliance with the requirements of the methodology AMS-I.D version 18.0. 2. Monitoring arrangements described in the monitoring plan of the PDD version 05 are feasible within the project design. 3. The PP's ability to implement the monitoring plan can be guaranteed. The monitoring plan of the PDD version 08 /1.3/ is complied with the registered PDD version 06. Applus+ LGAI's opinion that the project participants are able to implement the monitoring plan and the emissionreductions achieved can be reported ex-post for verification.

D.6. Crediting period

Means of validation	The assessment team checked whether the updated PDD indicated that the next crediting period commences on the day immediately after the expiration of the current crediting period by means of a document review, use of official sources and interviews with relevant personnel during site visit. The first 7 years renewable crediting period was from 29/10/2008–28/10/2015; the PP are applying for a 2nd renewable crediting period, which is 7 years(29/10/2015 – 28/10/2022).The project participant notified the EB Secretariat on 28/01/2015 regarding the renewal of the crediting period and selected DOE, which is within 270 to 180 days prior to the date of expiration (i.e. 28/10/2015) of the current crediting period.
Findings	No non-conformability was observed during assessment for validation of crediting period. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirmed that the notification regarding to the request for renewal of crediting period of the project meets the requirements of PCP and the next crediting period of the registered CDM project activity commences on the day immediately after the expiration of the current crediting period. Therefore, CDM requirements stipulated under VVS Version 09.0 §§445(a)-(v) is satisfied completely.

D.7. Project participants

Means of validation	Theassessment team checked whether the names of the project participants included in the updated PDD are consistent with the names of the project participants in the registered PDD by means of desk review and interview at site visit. The project participants in registered PDD are M/s. KKK Hydro Power Limited (project owner) and Bunge M/s. Emissions Fund Limited(buyer). The project participants in updated PDD version 08are M/s. KKK Hydro Power Limited (project owner) and Bunge M/s. Emissions Fund Limited (buyer).
Findings	No non-conformability was observed during assessment of details of Project Participant. Therefore, no finding was raised.
Conclusion	Applus+ LGAI confirmed that the project participants in the updated PDD version 08are consistent with the actual situation. Therefore, CDM requirements stipulated under VVS Version 09.0 §§439 is satisfied completely.

D.8. Post-registration changes

Type of post-registration changes (PRCs)	Confirmation (Y/N)	Validation report for PRCs	
		Version	Completion date
Temporary deviations from the registered monitoring plan, monitoring methodology or standardized baseline	N	N/A	N/A
Corrections	N	N/A	N/A
Inclusion of a monitoring plan to a registered project activity	N	N/A	N/A
Permanent changes from registered monitoring plan, monitoring methodology or standardized baseline	N	N/A	N/A

Changes to the project design of a registered project activity	N	N/A	N/A
Types of changes specific to afforestation and reforestation project activities	N	N/A	N/A

SECTION E. Internal quality control

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As final step of a validation of the final documentation including the validation opinion and the checklist have to undergo an internal quality control by the technical review committee, i.e. each report has to be finally approved either by the head of the technical review committee or the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one.

After confirmation of the PP the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.

SECTION F. Validation opinion

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Applus+ LGAI has performed a validation of renewal of crediting period of the "Baragran Hydro Electric Project, 3.0 MW (being expanded to 4.9 MW)" (Ref. No. 1253). The validation was performed on the basis of the updated sections of the PDD relating to the baseline, estimated emission reductions and the monitoring plan using the most recent version of baseline and monitoring methodology applicable for the project activity. The final validation opinion was finalized in accordance with the CDM VVS version 09.0 and the CDM PS version 09.0 including the assessment of:

a) *An impact of new relevant national and/or sectoral policies and circumstances on the baseline taking into account relevant guidance from the Board with regard to renewal of the crediting period at the time of requesting renewal of crediting period;*

b) *The correctness of the application of an approved baseline methodology for the determination of the continued validity of the baseline or its update, and the estimation of emission reductions for the applicable crediting period.*

The review of the project design documentation and the subsequent follow-up interviews have provided Applus+ LGAI with sufficient evidence to determine the validity of the original baseline and/or its update through an assessment. The project correctly applies the latest baseline and monitoring methodology AMS-I.D."Grid connected renewable electricity generation", version 18.0.0.

Given that the project is implemented as designed and the underlying assumptions do not change, the project is likely to achieve the estimated amount of annual emission reductions of 25,967 tCO_2e and a total estimated emission reductions of 181,769 tCO_2e over the 2nd renewable crediting period as specified within the final PDD.

The monitoring plan provides for the monitoring of the project's emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design. It's Applus+ LGAI's opinion that the project participants are able to implement the monitoring plan and the emission reductions achieved can be reported ex-post for verification.

In summary, it is Applus+ LGAI's opinion that the project activity "Baragran Hydro Electric Project, 3.0 MW (being expanded to 4.9 MW)" (Ref. No. 1253) in India, as described in the PDD, version 08 dated16/02/2016, meets all relevant UNFCCC requirements for the renewal of the crediting period. Hence Applus+ LGAI submitted the request for renewal of the crediting period of the project activity.

Appendix 1. Abbreviations

Abbreviations	Full texts
AMS	Approved Methodology Small Scale
Applus+ LGAI	LGAI Technological Center, S.A. (Applus)
BE	Baseline Emission
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CEA	Central Electricity Board
CER	Certified Emission Reduction
CL	Clarification Request
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
HPSEB	Himachal Pradesh State Electricity Board
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
IRR	Internal Rate of Return
KP	Kyoto Protocol
KKKHPL	KKK Hydro Power Limited
kWh	Kilo Watt hour
MP	Monitoring Plan
MWh	Mega Watt hour
MoEF	Ministry of Environment and Forests
NEWNE	North East West North-East
OM	Operational Margin
PCP	Project Cycle Procedure
PDD	Project Design Document
PP	Project Participant
PPA	Power Purchase Agreement
PS	Project Standard
UNFCCC	United Nations Framework Convention for 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:

b) Leader Auditor (LA)

c) Auditor (A)

d) Auditor Trainee (T)

e) 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

Technical Reviewer:

f) Meng (Simon) Shen

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 eight 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.

Meng (Simon) Shen (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is a Lead Auditor appointed by Applus+ LGAI for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ LGAI, he had been worked for TÜV SÜD as a GHG Validator/Verifier and ISO 9001/14001 Lead Auditor for 3.5 years.

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	KKKHPL	Registered PDD, version 6	21/08/2008	PP
1.2	KKKHPL	PDD, version 7 (sent to the UNFCCC secretariat for notifying the intention to request a renewal of crediting period of the Project)	08/01/2015	PP
1.3	KKKHPL	PDD, version 8 (for renewal of crediting period of the Project)	16/02/2016	PP
1.4	UNFCCC website	CDM Project activity view page "Baragran Hydro Electric Project, 3.0 MW (being expanded to 4.9 MW) " http://cdm.unfccc.int/Projects/DB/SGS-UKL1185291151.37/view	29/11/2008	Other: UNFCCC
1.5	SGS	Validation report of "Baragran Hydro Electric Project, 3.0 MW (being expanded to 4.9 MW)"	24/10/2008	Other: UNFCCC
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	Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, version 03.0.1	02/03/2012	Other: UNFCCC
2.5	UNFCCC website	Tool to calculate the emission factor for an electricity system (Version 05)	27/11/2015	Other: UNFCCC
2.6	IPCC	IPCC Guidelines Vol. 2	Year 2006	Other: IPCC
2.7	UNFCCC website	Project design document form for small-scale CDM project activities, version 06.0	09/03/2015	Other: UNFCCC
2.8	UNFCCC website	PCP, Version 09.0	20/02/2015	Other: UNFCCC
2.9	UNFCCC website	Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, Version 02	-	Other: UNFCCC
3.	**Project implementation information**			
3.1	HPSEB	Commissioning Certificate for the project activity by HPSEB for synchronisation to grid 1. Unit-I_HPSEB/CE (PSP)/ Baragran/2004-900 dated 24/08/2004, 2. Unit-II_HPSEB/PHE/Baragran /2004-3842-47 dated 22/09/2004, 3. Unit-III_HPSEB/PHP/ Baragran-HEB-08-1130-37 dated 16/07/2008	24/08/2004, 22/09/2004, 16/07/2008	Other: HPSEB
3.2	KKKHPL	Power Purchase Agreements (PPA) for the project activity between KKKHPL and HPSEB	11/03/2008	PP
3.3	KKKHPL	Email sent to the UNFCCC secretariat for notifying the intention to request a renewal of crediting period of the Project	28/01/2015	PP

3.4	KKKHPL	Email response from UNFCCC of notification about request a renewal of crediting period of the Project	02/02/2015	PP
3.5	KKKHPL	CDM Verification Site Visit Photograph	20/01/2015	PP
3.6	KKKHPL	CDM Verification Site Visit Attendance Records	20/01/2015	PP
4.	**ER calculation and cross checking issue**			
4.1	KKKHPL	Emission reduction calculation sheet version 01	16/02/2016	PP
5.	**Others**			
5.1	CEA	CEA database version 10 available at http://cea.nic.in/reports/others/thermal/tpece/cdm_co2/user_guide_ver10.pdf	16/12/2014	Other: CEA

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

Table 1. CL from this validation

CL ID	01	**Section no.**	D.1	**Date:**22/01/2015
Description of CL				
The Project Participant requested to submit some supporting evidence which confirm that the notification has been sent to secretariat of their intention in accordance with the Project cycle procedure.				
Project participant response				**Date:**16/02/2016
E-mail sent to secretariat for intention is submitted				
Documentation provided by project participant				
E-mails				
DOE assessment				**Date:**20/02/2015
The PP has submitted theE-mail sent on 28/01/2015 to the CDM Registration and Issuance Team ofUNFCCC. Theassessment team verified that the project participants expressed their intention to request a renewal of creditingperiod for the project activityin accordance with the CDM PCP version 09.0. Also, the PP has received acceptance confirmation email on 02/02/2015 from UNFCCC secretariat for the same; which has been verified by validation assessment team and found to be correct and accepted accordance to CDM PCP version 09.0 §§ 291. Hence, CL#1 is closed satisfactorily.				

Table 2. CAR from this validation

CAR ID	01	**Section no.**		**Date:**22/01/2015
Description of CAR				
The section A.1 of the PDD is not discussed about the information for the monitoring period from 01/01/2014 to 28/10/2015, please clarify?				
Project participant response				**Date:**16/02/2016
The section A.1 of the PDD is now included the required information.				
Documentation provided by project participant				
PDD version 8 dated 16/02/2016 ER calculation sheet 1 dated 16/02/2016				
DOE assessment				**Date:** 20/02/2015
The PP has submitted the revised PDD which includes requested information, same was verified and found to be appropriately corrected, and hence CAR #1 is closed satisfactorily.				

Table 3. FAR from this validation

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

Version	*Date*	*Description*
01.0	23March 2015	Initial publication.

Decision Class: Regulatory
Document Type: Form
Business Function: Renewal of crediting period
Keywords: crediting period, project activities, validation report