



Gold Standard
for the Global Goals

TEMPLATE

TRANSITION REQUEST FORM - PROJECT

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VERSION 1.0

RELATED SUPPORT

- **TEMPLATE GUIDE Key Project Information & Project Design Document v.1.2**

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Summary:

The projects transitioning from **CDM or other Standards to Gold Standard for Global Goals (GS4GG)** shall submit the transition request form and PDD (this document). The **Transition Request Form** is also to be completed for projects that are already registered with GS4GG for CER labelling and seek to move to GSVER stream to issue Gold Standard VERs.

This document contains the following Sections

Section - Transition Request Form

[TRF.1 ELIGIBILITY CHECK FOR TRANSITION](#)

[TRF.2 TRANSITION PROJECT INFORMATION](#)

[TRF.3 TRANSITION CHECKLIST](#)

Key Project Information

Section - Project design document

Q – Description of project

Q - Application of approved Gold Standard Methodology (ies) and/or demonstration of SDG Contributions

Q – Duration and crediting period

Q – Summary of Safeguarding Principles and Gender Sensitive Assessment

Q – Outcome of Stakeholder Consultations

[Appendix 1](#) – Safeguarding Principles Assessment (mandatory)

Q - Contact information of Project participants (mandatory)

Q - LUF Additional Information (project specific)

Q - Summary of Approved Design Changes (project specific)

The following table summarises how different sections of this document shall be filled to facilitate request for transition from other standard to GS4GG.

Section	Required for	How to complete the section
Transition Request Form		
TRF.1 Eligibility check for transition	All projects	Answer the assessment questions and provide supporting information as needed
TRF.2 Transition project information	All projects	Provide project information pertaining to the standard the project is transitioning from (e.g., CDM)
TFR.3 Transition checklist	All projects	Answer the assessment questions and provide supporting in the section in the PDD section as needed
Project Design Document		
Key project information	All projects	Include project details pertaining to GS4GG
		Provide information as needed. Any section/subsections
Section A to E	All projects	- that requires information/justification or additional information as per transition checklist, AND - that involves update/revision to the information provided for registration with other standards. In such cases, the project shall copy and paste the information from registered PDD (other standard) and mark the additional information in track changes.

SECTION – TRANSITION REQUEST FORM

TRF.1 ELIGIBILITY CHECK FOR TRANSITION

To be completed for all projects seeking transition to GS4GG from other standards.

Requirement	Not Applicable.
The project must have a crediting period start date with CDM/other standard on or after 01 January 2016	Is the project crediting period start date after 01 January 2016? ☒ Yes ☐ No (go to questions below)
The project that has a crediting period start date with CDM/other standard before 01 January 2016 shall demonstrate the risk of discontinuation without carbon revenue.	Not Applicable
The project that has a crediting period start date with CDM/other standard before 01 January 2016 shall demonstrate how the project has been operational in the absence of carbon revenue, if carbon credits have not been issued to the project in recent years.	Not Applicable
List of supporting documents	The project is registered in UNFCCC-CDM10153. The relevant supporting documents can be accessed from the link below: Web-link: https://cdm.unfccc.int/Projects/DB/TUEV-SUED1431953233.8/view

TRF.2 TRANSITION PROJECT INFORMATION

Project developer shall provide project information (in grey rows), pertaining to the standard, the project is transitioning from (e.g., CDM) in the table below.

Name of the original standard	☒ CDM ☐ Other (Add the standard name here)		
Project status with original standard	The current status of project with CDM/other standard at the time of submission of this form. ☒ Active (registration status is valid) ☐ Withdrawn (deregistered) ☐ Provisional (awaiting guidance from the CMP at CMP 16, CDM PoA only)		
CDM/ other standard reference ID	Reference number/ID allocated to the project by CDM/other standard. CDM:10153 GS: 7154		
Project reference weblink	The weblink of the project page of CDM/other standard. CDM Weblink: https://cdm.unfccc.int/Projects/DB/TUEV-SUED1431953233.8/view GS Web-link: https://registry.goldstandard.org/projects/details/1425		
Title of Project	The title of the project used for registration with CDM/other standard. Chanju I Hydro Electric Project		
New title of Project (if applicable)	The title of the project if it has been changed for registering with Gold Standard. Not Applicable		
Activity Scale	Project scale registered with CDM/other standard. Large Scale Project		
Methodology used	Methodology title and the version number applied for registration with CDM /other standard. ACM0002 ver. 16 - Grid-connected electricity generation from renewable sources		
Amount of reductions	Average annual emission reductions (tCO₂eq/year). 151,248 tCO₂e/year		
Registration date	The project registration date with CDM/other standard. 27/05/2015		
Type of crediting period	☒ renewable crediting period ☐ fixed crediting period		
Crediting period	The project registered crediting period start date and end date with CDM/other standard. Start date: 26/07/2017 End date: 25/07/2024		
Total Monitoring Periods issued	The total period that has already been issued by CDM/other standard. Start date: 26/07/2017 End date: 30/06/2019		
Latest monitoring period	The latest monitoring period that has already been issued or submitted for issuance to CDM/other standard. Start date: 26/07/2017 End date: 30/06/2019		
	<table> <tr> <td>Issuance Status</td><td>☒ Issued</td></tr> </table>	Issuance Status	☒ Issued
Issuance Status	☒ Issued		

	☐ Awaiting issuance
	Date of Issuance, if issued. 24/03/2022
Declaration	<i>Click on the tick box to confirm.</i> The Project Developer/Representative hereby acknowledges that project developer; ☒ Option 1 - has included information in this document that has not been validated/verified as part of CDM PDD OR ☐ Option 2 - has copied all validated information as it appears in the original and then used tracked changes to highlight any information that not been validated/or has changed - <i>Note if option 2 is selected the project developer shall fill all sections in the PDD template of this document.</i> The Project Developer/Representative hereby acknowledges that project developer; ☒ is aware that for a given vintage, a registered Gold Standard project can request the issuance of the emission reductions under only one standard/certification scheme. (applicable to all projects). ☒ is aware that all projects that transition to GS4GG shall demonstrate Ongoing Financial Need at the time of renewal of their crediting period following applicable GS4GG requirements. (applicable to all projects). ☒ confirms that the project developer/representative will make a declaration, in writing, in the monitoring report submitted to Gold Standard that (applicable to CDM PoA/CPAs) - project will/has not issue both a CER/other compliance units under Paris Agreement and a GSVER for the same vintage. - project developer agrees to comply with all future UNFCCC COP/CMP decisions¹ including adjustment of GWP values
Project Developer/ authorised signatory	Name and designation of the project developer/authorised signatory M/s I. A Energy (HUF)– Authorized Signatory

¹ CDM clarification available on this topic as on date can be referred to [here](#).

TRF.3 TRANSITION CHECKLIST

Project developer shall answer all assessment questions listed below and provide additional information/justification in the PDD section, where required. Please note that the checklist is based on the [GHG Emissions Reductions and Sequestration Product Requirements](#).

The checklist also provides relevant requirements applicable to project transitioning to GS4GG for easy referencing. The PD shall refer to relevant GS4GG documents, as applicable, for further details. It is recommended that PD refers to Guidelines in the table below for more information on the requirements and flexibilities provided. This document (in word) shall be submitted to SustainCERT along with other required documents **for preliminary review** as listed below –

- [Cover Letter](#)
- [Terms and Conditions](#)
- [Official Development Assistance declaration](#)
- [Stakeholder Consultation Report](#)
- Project Design Document (PDD) final version (CDM/other standard)
- Validation report submitted to CDM/other standard
- Last Monitoring and Verification report submitted to CDM/other standard

1 Transition pathway	
1.1 Option 1: Is project seeking registration with GS4GG to issue GSCERs while maintaining the CDM registration? (Ref: GHG Product Requirements)	☒ Yes ☐ No
1.2 Option 2: Is project seeking registration with GS4GG to issue GSVERs only and/or conversion of issued CERs to GSVERs ? (Ref: Annex B, GHG Product Requirements) <i>Note – for conversion of issued CERs to GSVERs, the project must be registered with GS4GG.</i>	☐ Yes ☒ No
1.3 Option 3: Is project seeking registration with GS4GG to issue GSVERs only and/or conversion of emission reduction to GSVERs issued by standard other than CDM ? (Ref: Annex B, GHG Product Requirements)	☐ Yes ☒ No
Requirement: <i>All projects submitting request for transition on or after 1/1/2021 must demonstrate compliance with requirements stated in Annex B, GHG Product Requirements.</i> <i>The project following option 1 above;</i> - <i>may seek registration under GS4GG based on provisional CDM EB decision</i> - <i>may seek issuance of GSVERs in exchange of provisional CERs based on CDM EB decision but must transfer issued CERs to the Gold Standard Swiss CDM Registry Account. If there are any implications for issued volume or project eligibility due to CMP decision regarding GWP, additionality or any other decision, the PD must address these issues, as applicable in consultation with SustainCERT/GS.</i> - <i>A/R projects are not eligible for option 1.</i>	

The project transitioning to GS4GG following **option 2** above,

- may convert issued CERs to GSVERs
- are not required to deregister from CDM but shall not claim emission reductions under both GS4GG and CDM for the same vintage
- Eligible LUF project is required to deregister from CDM to issue GSVERs.

The project transitioning to GS4GG following **option 3** above,

- may convert issued emission reductions unit to GSVERs
- may issue GSVERs
- shall deregister project from other standard before registration with GS4GG

Guidelines:

Project already undergoing design certification for CER labelling can continue with their existing process. [SustainCERT](#) shall be notified of the intention to switch to GSVER stream, at the earliest possible opportunity.

Project already certified for CER labelling can switch to GSVER stream by completing this form and notifying [SustainCERT](#). Such project may leave the PDD section blank as this information has been captured in GS4GG PDD version submitted earlier.

2| Transition approval procedure

2.1 Option 1 - Is the project undergoing a preliminary review by sustainCERT , validation by VVB and design review by SustainCERT ?	☒ Yes ☐ No
2.2 Option 2 - Is the project undergoing a combined preliminary review, validation, and design review by SustainCERT ? (restrictions apply, see 5.3 below)	☐ Yes ☒ No
2.3 Option 3- Is the project undergoing preliminary review by SustainCERT , combined validation & verification by VVB , followed by combined design and performance review by SustainCERT?	☐ Yes ☒ No

Requirement:

The project certification under GS4GG involves following key steps. Refer to Section 5. Project cycle Principles and Requirements for details.

Preliminary review - Preliminary Review is conducted once at the time of first submission to Gold Standard. It involves desk review of the Key Project Information and Draft Project Design Document by SustainCERT.

Design certification (validation + design review) - Design certification involves validation by VVB and design review by SustainCERT. With successful design certification the Project will obtain 'Certified design' status that is equivalent to registration under CDM and other standard.

Performance certification (verification + performance review) - Performance certification involves verification by VVB and performance review by SustainCERT. The positive conclusion of the Performance Review period shall result in Gold Standard 'Certified Project status' and Project can issue GSVERs. The project may opt for combined Design Certification, conducting both the first Verification and Performance Review under GS4GG at the same time.

To minimize disruption and keep the transition review time and costs minimum, the projects are provided with flexibilities as summarised in the table below;

Certification outcome	Certification stage	Option 1 Normal certification pathway	Option 2* Combined Preliminary review + Validation + Design review	Option 3 Combined validation + verification followed by combined design + performance review
Listing	Preliminary review	SustainCERT		SustainCERT
Certified Design = Registration	Validation	VVB	SustainCERT	VVB
	Design review	SustainCERT		SustainCERT
Certified project = Issuance	Verification	VVB	VVB	VVB
	Performance review	SustainCERT	SustainCERT	SustainCERT
Comments		Project shall go through preliminary review by SustainCERT (4 weeks) Design review (minimum 4 weeks) is conducted after Validation by VVB and is concluded when all CARs/CLs are successfully closed. Performance review (minimum 3 weeks) is conducted after Verification by VVB and is concluded when all CARs/CLs are successfully closed.	Project may combine preliminary review with validation and design review. All these steps can be combined and completed by SustainCERT. VVB shall complete the verification. Performance review (minimum 3 weeks) is conducted after verification by VVB and is concluded when all CARs/CLs are successfully closed	Project shall go through preliminary review by SustainCERT (4 weeks) Project Developers may combine Design Certification with first Verification and Performance Review. VVB may combine site visits and VVB submits positive Validation and Verification Reports at the same time. Concurrent Design Review and Performance Review (minimum 6 weeks) is conducted after submission of validation and verification reports by VVB and is concluded when all CARs/CLs are successfully closed.
<i>For option 1, a validation site visit by VVB is not required as long as the VVB conducted a site visit as part of validation/verification in last three years (from time of first submission for preliminary review) and new/updated information can be audited based on desk review and/or using remote audit approaches.</i> <i>For Option 2, SustainCERT conducts project design elements desk based audit and approve project transition, without VVB's opinion. <u>Note that this option will involve additional review fee levied by SustainCERT. The project developer shall confirm the applicable fee and timelines with SustainCERT (help@sustain-cert.com) before submitting the request for transition.</u></i> <i>If transition project is applying a new/latest version of the methodology which requires full audit but VVB, option 2 cannot be applied.</i>				
3 Project Eligibility				
3.1 Is the project eligible project type under Gold Standard for the Global Goals?				☒ Yes ☐ No

Requirement: The transitioning project shall be one of the eligible project types for issuance of Gold Standard VERs (Ref: [GHG Product Requirements](#)).

Guidelines: Typical eligible project types are Renewable Energy Supply, End-Use Energy Efficiency Improvement, Waste Handling & Disposal, Land Use and Forests.

- Afforestation/Reforestation project registered with CDM/other standard may transition to GS4GG for issuance of GSVERs only but are not eligible for labelling of issued emission reduction units.
- RE projects shall refer to [Renewable Energy Activity Requirements](#) for eligibility check.
- RE projects for example - · Hydropower · biomass resources · landfill gas and biogas from agro-processing, wastewater and other residues · Waste Heat/Gas recovery · Fossil co-generation · Waste incineration and gasification · Waste handling and disposal are required to demonstrate compliance with the specific eligibility requirements. Refer to Annex – A of [Renewable Energy Activity Requirements](#) for further details.
- Community Services Activities projects for example - Hydropower · biomass resources · landfill gas and biogas from agro-processing, wastewater and other residues · Waste Heat/Gas recovery · Fossil co-generation · Waste incineration and gasification · Waste handling and disposal · Relighting · End-use fossil switching are required to demonstrate compliance with the specific eligibility requirements. Refer to Annex – A of [Community Services Activity Requirements](#) for further details.

4| Compliance with relevant Activity Requirements

4.1 Does the project conform to the relevant Activity Requirements (CSA/RE / LUF)?	☒ Yes ☐ No
4.2 Does any specific eligibility criteria/requirement stipulated in Annex A of CSA/RE requirements apply to the project? (see section 2.0 for LUF)	☐ Yes ☒ No
4.3 Does specific eligibility criteria/requirement stipulated in Annex A of CSA/RE requirements that apply to the project, lead to any change in the registered PDD? If Yes, please provide a full explanation in section A.1.1. below.	☐ Yes ☒ No

Requirement:

(Ref: Section 4.1.1 of [GHG Product Requirements](#))

Projects shall conform to the relevant Activity Requirements and Gold Standard Approved Methodologies, including [eligible CDM Methodologies](#).

RE rule update / RE PoA rule update:

Grid connected Renewable Energy projects seeking to transition from another carbon crediting scheme to GS4GG or labelling of emission reductions under GS4GG are exempted from eligibility requirements listed in para 2.1.3 of the RE Activity Requirements. This exemption is only allowed to projects that started the first crediting period with the original carbon crediting scheme from 01/01/2016 or later but before 24/01/2020. (Ref: Section 2.1.1 and 2.1.2 of [RU 2020 AR –RE V1.2](#))

Specific [Renewable Energy Activity requirements](#) (refer to Annex A): Hydropower, biomass resources, landfill gas and biogas from agro-processing, wastewater and other residues, Waste Heat/Gas recovery, Fossil co-generation, Waste incineration and gasification, Waste handling and disposal.

Specific [Community Service Activity requirements](#) (refer to Annex A): Hydropower, biomass resources, landfill gas and biogas from agro-processing, wastewater and other residues, Waste Heat/Gas recovery, Fossil co-generation, Waste incineration and gasification, Waste handling and disposal, Relighting, End-use fossil switching.

5 Applicability of the methodology/tool version	
5.1 Does the project apply an eligible GS methodology? Refer to list of the eligible methodologies here .	☒ Yes ☐ No
5.2 Does the project apply the version of the methodology and applicable tools applied for CDM/other standard registration or renewal ?	☒ Yes ☐ No
5.3 Does the project apply the latest version of the methodology and applicable tools available at the time of first submission of this form ? If Yes, please provide a full explanation in section B below. And note that the project cannot opt for option 2 mentioned transition approval procedure.	☒ Yes ☐ No
Requirement: (Ref: Annex B of GHG Product Requirements) Transition project shall - conform to the relevant Activity Requirements and Gold Standard Approved Methodologies, including eligible CDM Methodologies. - also meet the additional GS4GG methodology eligibility requirements, where applicable. Refer to CDM Methodologies for Gold Standard Eligibility Requirements. Transition project shall apply the version of GS approved CDM methodology or methodology tool for transition to GS4GG as follows; - version applied at the time of registration/renewal of crediting period with other standard, OR - version available at the time of first submission (preliminary review) this form.	
6 Demonstration of additionality	
6.1 Are you aware that the transitioning project will be required to demonstrate Ongoing Financial Need as per the relevant GS rules and requirements available at the time of renewal of crediting period? (Refer to para 4.1.51 – 4.1.53 of Principles & Requirements .)	☒ Yes ☐ No
Requirement: - The CDM and JI project are not required to carry out additional assessment for demonstration of additionality over and above what has been done for registration/determination with the CDM unless the project falls into a category that is deemed non-additional in an applicable Gold Standard Activity Requirement. In such cases the relevant Activity Requirement shall take precedence. Ref: Annex B GHG Product Requirements. - Transition projects registered with standards other than CDM are required to undergo additionality revalidation to re-establish the validity of the underlying assumptions applied in the demonstration of additionality at the time of registration with the other standard. - The projects seeking combined transition and renewal of crediting period with GS4GG are not required to demonstrate OFN at the time of transition but must demonstrate OFN at the time of Crediting Period renewal after transitioning to GS4GG.	
7 Sustainable Development Assessment	
7.1 Does the project positively contribute towards minimum three Sustainable Development Goals (SDGs) - SDG13 (mandatory) + two other SDGs?	☒ Yes ☐ No
7.2 Have you identified the monitoring parameters linked with selected SDGs and corresponding SDG targets? For example – the monitoring parameter <u>Amount of GHGs emissions avoided or sequestered</u> is linked with SDG 13. Climate action, SDG target 13.2	☒ Yes ☐ No

Integrate climate change measures into national policies, strategies and planning.	
Fill section B.6. Sustainable Development Goals (SDG) outcomes and B.7 Monitoring plan, below for SDGs monitoring parameters not covered in registered PDD with other standards. Fill Table 1 – Estimated Sustainable Development Contributions below. Requirement: <i>The transitioning project shall demonstrate a clear, direct contribution to sustainable development, defined as making demonstrable, positive impacts on at least three Sustainable Development Goals (SDGs), one of which must be SDG 13 (Ref: Section 4.(c) of Principles and Requirements)</i> Refer to Annex B, GHG Product Requirements for further guidelines for transition projects. Guidelines: <i>Selected SDG impacts must not result from a one-off from design/construction/distribution/ start-up or decommissioning of the project.</i> <i>You may refer to /use the SDG impact Tool (under consultation currently) to identify the relevant monitoring indicator, SDGs and corresponding SDG targets and design monitoring plan for identified indicators.</i>	
8 Start date and duration of the crediting period	
8.1 Has the crediting period of the transitioning project registered with other carbon standard/certification scheme changed and/or extended?	☒ Yes ☐ No
8.2 Is the total duration of the crediting period (i.e. including period that had been issued under the host standard) less than/equal to the maximum crediting period allowed under relevant GS4GG activity requirements?	☒ Yes ☐ No
Complete the section C.2.2 Total length of crediting period below. Requirement: - The crediting period of the transitioning project/PoA/CPA registered with other standards or certification schemes cannot be changed/extended. - Maximum crediting period allowed under GS4GG are as CSA – 15 Yrs, RE – 15 Yrs, LUF 30 – 50 Yrs, AGR – 10 Yrs, if not defined in activity requirement or applicable methodology – 10 Yrs. - The start date of the GS crediting period shall be same as the start date of the CDM crediting period. (Annex B, GHG Product Requirements) - For a transitioning project, PoA/CPA, the total duration of the crediting period, including the period that has been claimed under the host standard, shall not exceed the maximum crediting period allowed under relevant GS4GG activity requirements. If a given project transitioning to GS4GG, was registered under Standard X with - • fixed crediting period (10 years): The total crediting period (Standard X + GS4GG) must remain 10 years. The project can only claim remaining years of its 10-year crediting period after transitioning to GS4GG. • renewable crediting period (7*3 year): The total crediting period (Standard X + GS4GG) must be equal to that allowed under relevant GS4GG activity requirements. The project	

can only claim remaining years of the maximum allowed crediting period after transitioning to GS4GG. For example; the maximum crediting period allowed for renewable energy project is 15 years. A renewable energy project that has already claimed 5 years under Standard X can only claim remaining 10 years of the total 15 years of its allowed crediting period after transitioning to GS4GG - For a transitioning project, the start date of the Gold Standard Crediting Period starts with crediting period start date with other standard or maximum two years before the date of first submission (submission for preliminary review), whichever occurs later. (Ref: Annex B, GHG Product Requirements)	
9 Safeguarding Principles Assessment	
9.1 Does the project conform to the Gold Standard Safeguarding Principles and Requirements?	☒ Yes ☐ No
9.2 Is there any risk and/or likely adverse outcomes of the project?	☐ Yes ☒ No
9.3 If answer is yes for Q Error! Reference source not found. Error! Reference source not found. , can the project achieve requirements with regards to the relevant principle through design, management or risk mitigation?	☐ Yes ☒ No
9.4 If answer is yes for Q Error! Reference source not found. Error! Reference source not found. , have the Mitigation Measures added to the Monitoring Plan (if required)?	☐ Yes ☒ No
Complete the Annex 1 and section D. Summary of Safeguarding Principles below. Requirement: The transitioning project shall conform to the Gold Standard Safeguarding Principles and Requirements. (Ref: Section 4.1.19 of GS4GG Principles and Requirements) Guidelines: The detailed Safeguarding Principles and Requirements checklist is available in Annex 1 of this document.	
10 Stakeholder Consultation Requirements	
10.1 Has the project conducted a Stakeholder Consultation in accordance with the requirements of Gold Standard Stakeholder Consultation & Engagement Requirements ?	☒ Yes ☐ No
The answer to Q 10.1 is "No", if any of the questions below is answered as "No". The project should take the question(s) into account and address the gap when conducting supplementary stakeholder consultation to comply with GS4GG requirements. Please answer the below question with regards to the stakeholder consultation conducted to comply with CDM/other standard requirements?	
10.2 Did you conduct the stakeholder consultation before the project start date?	☒ Yes ☐ No
10.3 Did you discuss identified direct positive and negative impacts of the projects with stakeholders?	☒ Yes ☐ No

10.4 Does the invited stakeholder covers all stakeholder groups (a to g) listed in paragraph 3.1.1. of STAKEHOLDER CONSULTATION AND ENGAGEMENT REQUIREMENTS ?	☒ Yes ☐ No
10.5 Did the invitation methods solicit input from women and marginalised groups?	☒ Yes ☐ No
10.6 Were the stakeholders invited at least 30 days before the stakeholder meeting?	☒ Yes ☐ No
10.7 Did a local language version of the non-technical summary with information required as per paragraph 5.1.1. of STAKEHOLDER CONSULTATION AND ENGAGEMENT REQUIREMENTS , shared with stakeholders?	☒ Yes ☐ No
10.8 Was a physical meeting conducted?	☒ Yes ☐ No
10.9 Was a gender lens applied to assessing comments? (for example, if only men provided comments on household device project, was this taken into consideration when assessing the relevance of the comment?)	☒ Yes ☐ No
10.10 Were any serious, reasonable and proportional concerns raised and taken into account and satisfactorily addressed?	☒ Yes ☐ No
10.11 Were any points that warrant 'Mitigation measures' marked as such and monitoring plan has been designed and included in the PDD?	☐ Yes ☒ No
10.12 Is the mandatory Continuous Input / Grievance Expression Process Book's location clearly stated (and therefore usable)?	☒ Yes ☐ No
10.13 Does PDD include a summary report of the comments received from local stakeholders?	☒ Yes ☐ No

Complete the section E. Summary of Local Stakeholder Consultation below.

Requirement: Ref: Section 4.1.25 of [GS Principles and Requirements](#).

Guidelines: Project that conducted a stakeholder consultation meeting to comply with CDM/other standard requirements, should conduct, at minimum,

- one round of consultation for identified gaps i.e., gaps due to differences in stakeholder consultation requirements of GS4GG and CDM/other standard. For instance, if original consultations only involve one physical meeting, CME/PD should conduct a stakeholder feedback round covering all the identified gaps. The additional stakeholder consultations may involve a physical meeting or stakeholder feedback round, as necessary.

If COVID interim measures are applicable (currently till 30/06/2021), the physical meeting and stakeholder feedback round may be postponed, and a draft SCR shall be mandatorily submitted to cover the consultation activities carried out till date.

KEY PROJECT INFORMATION²

GS ID of Project	GS 7154
Title of Project	Chanju I Hydro Electric Project
Time of First Submission Date	
Date of Design Certification	
Version number of the PDD	04
Completion date of version	26/09/2022
Project Developer	IA Hydro Energy Private Limited ³
Project Representative	EKI Energy Services Limited
Project Participants and any communities involved	Project Participant: IA Hydro Energy Private Limited Communities Involved: Not Applicable
Host Country (ies)	India
Activity Requirements applied	☐ ☐ Community Services Activities ☒ ☐ Renewable Energy Activities ☐ ☐ Land Use and Forestry Activities/Risks & Capacities ☐ ☐ N/A
Scale of the project activity	☐ ☐ Micro scale ☐ ☐ Small Scale ☒ ☐ Large Scale
Other Requirements applied	
Methodology (ies) applied and version number	ACM0002 Version 20. Grid-connected electricity generation from renewable sources
Product Requirements applied	☒ ☐ GHG Emissions Reduction & Sequestration ☐ ☐ Renewable Energy Label ☐ ☐ N/A
Project Cycle:	☐ ☐ Regular ☒ ☐ Retroactive

² As per the guidelines mentioned in section 1, the PDD section shall be left blank as this information has been captured in GS4GG PDD version submitted earlier.

³ [The company name has been changed from I. A. Energy to IA Hydro Energy Private Limited. The mention of former name or later name represents same company.](#)

Table 2 – Estimated Sustainable Development Contributions

Sustainable Development Goals Targeted	SDG Impact (defined in B.6.)	Estimated Annual Average	Units or Products
SDG 13 Climate Action (mandatory)	Emission Reductions	142,582 tCO ₂ e	
SDG -7 :Ensure access to affordable, reliable, sustainable and modern energy for all	MWh of renewable energy generated	156,272 MWh	
SDG - 8 : Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Number of trainings and hiring through project	1 training/annum and employment to 5 persons	

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

>>

Purpose of the Project activity

Chanju-I Hydro Electric Project is a grid connected run-of-river hydropower project located in Himachal Pradesh, India is being implemented by I.A. Energy, a special purpose vehicle formed for implementation of the project by M/s Indo Arya central transport ltd. Project was initially allotted to M/s Indo Arya Central Transport Limited but as per conditions of Himachal Pradesh Hydro Power Policy, a SPV (I.A. Energy) formed for implementation of the project activity. The proposed project is located in the Northern power region and has been conceived for harnessing the power potential of Chanju Nallah, a tributary of Baira nallah and sub tributary of River Ravi. The project relates to the installation of three vertical axis Francis turbine generating units of 12 MW each to generate 36 MW of power utilizing a design head of 236.67 m and a design discharge of 16.85 m³/s. The reservoir area created by the diversion barrage would be of the order of 0.017 sq km and the power density is 2,117.64 W/m². The project is fully commissioned on 26/07/2017.

The objective of the proposed project is to generate power from harnessing the water to meet the ever increasing demand for power in India. The generated power will be exported to the NEWNE grid (Now Indian Grid) via the sub-station at Kurthala. The project is expected to produce 157,850 MWh of energy per year. The net electricity available for sale to the grid would be 156,272 MWh after an auxiliary consumption and transmission losses of 0.5% each. The project activity will displace the fossil fuel fired power generation of the grid and hence contribute to a reduction in the greenhouse gases.

Hydropower is a clean renewable source of energy and does not contribute to air or water pollution nor does it lead to the emission of greenhouse gases. The water after powering the turbines will be discharged back into the Chanju nallah through an open channel tailrace just upstream of the Bhaled intake of the downstream Baira Siul project. The baseline scenario relates to the export of electricity to the grid by the operation of grid connected power plants and by the addition of new generation sources. The baseline scenario is the same as the scenario existing prior to the start of the implementation of the project activity.

The project boundary includes the CO₂ emissions from electricity generation in the fossil fuel fired power plants that are displaced due to the project activity.

Contribution of the project activity to Sustainable Development

The project is a run-of-river hydroelectric plant hence does not involve the construction of a dam, therefore the negative impacts often associated with dams such as the relocation of communities and residents as well as transfer of waterways will not occur. Locally, the project will contribute significantly to the social and economic situation of the local residents through creation of employment opportunities during the construction of the power plant besides providing regular employment opportunities after the operation of the project.

The project activity improves the connectivity of the project area, since it will result in the construction of additional roads and other infrastructure developments by spending an amount equal to 1.5% of the final cost of the project as part of the local area development assistance.

Contribution of the project activity to the Environment

The proposed project activity utilizes available hydro sources for power generation. Hydro power plants are considered zero emission power sources. The state of Himachal Pradesh is part of the NEWNE (Now Indian Grid) regional grid system and power generation is dominated by fossil fuels. The project activity will not result in any greenhouse gas emissions and cause no negative impacts on the environment both at a local as well as at a global level. The project activity does not result in degradation of any natural resources, health standards, etc. at the project area. The project will not cause any air, water, or noise pollution.

Contribution of the project activity to Technological Well Being

The project would utilize environmentally safe and sound technologies available in the hydroelectric power generation sector. The technology is expected to be produced locally and hence no technology transfer might take place.

Estimated amount of emission reductions over the chosen crediting period:

This project activity will lead to an annual average GHG emission reduction of 142,582 tCO₂e and chosen a renewable crediting period of 5 years

This project activity is registered under the CDM mechanism and the UN reference no. is 10153⁴. The CDM project activity is registered on 27/05/2015.

A.1.1. Eligibility of the project under Gold Standard

The project activity meets the eligibility criteria as per section 3.1.1 of GS4GG Principles & Requirements, version 1.2⁵ as described below.

- (a) Project Type:** The project activity includes construction and operation of a hydro power plant to generate renewable electricity to supply the national grid. Hydro power project activity is an eligible project type according to section 2 of GS4GG Renewable energy activity requirements, version 1.3.
- (b) Project Location:** The project is located in India.
- (c) Project Area, Boundary and Scale:** The project activity follows the UNFCCC approved methodology and project Area and Boundary is defined in line with methodological requirement. The project activity is a 36 MW Hydro Energy

⁴ <https://cdm.unfccc.int/Projects/DB/TUEV-SUED1431953233.8/view>

⁵ https://globalgoals.goldstandard.org/standards/101_V1.2_PAR_Principles-Requirements.pdf

- project and thus qualifies under large scale projects (Non Micro Scale). This Renewable project estimates issuing emission reductions greater than 10,000 tCO₂e, thus the project falls under Non Microscale categories.
- (d) **Host Country Requirements:** The projects has obtained all the requirement for the commissioning of the project from India.
 - (e) **Contact Details:** The project participants include IA Hydro Energy Private Limited. Contact details of the Project Participants is presented in Appendix 1 of this GS PDD.
 - (f) **Legal ownership:** please refer section A.1.2 for the legal ownership details.
 - (g) **Other Rights:** The project owner has full legal right to control and operate the project activity.
 - (h) **Official Development Assistance (ODA) Declaration:** No public funds or ODA is involved in this project activity.

The project activity results in displacement of electricity from thermal power stations while contributing to sustainable development of India. Hence, the project contributes to the Gold Standard Vision and Mission.

As per section 1 Scope and Applicability of 202-GS4GG-Renewable-Energy-Activity-Requirements-v1.3, the project activity conforms (a) Gold Standard for the Global Goals Principles & Requirements (and associated documents) AND (b) Gold Standard Renewable Energy Activity Requirements.

As per the 202-GS4GG-Renewable-Energy-Activity-Requirements-v1.3⁶, section 2 Eligible Project Types is described below:

- As per the section 2.1.2 (a), this project is generating electricity using renewable energy sources i.e. from hydro energy.
- As per the section 2.1.2 (b), this project is electricity generation through hydro energy and supplying energy to the National grid.
- As per Section 2.1.3 is not required as the project satisfy the eligibility condition of section 2.1.2.
- Section 2.1.4 is not required as the project satisfy the eligibility condition of section 2.1.2.

Technology Specific Eligibility Criteria as per Section 1.1 of Annex A under Renewable Energy Activity Requirements V1.3

Sr No.	Description	Justification
1.1	The Gold Standard will evaluate the eligibility of hydropower activities with an installed capacity greater than 20 MW on a case-by-case basis at the time of preliminary review. This 20 MW capacity	Chanju-I Hydro Electric Project is a grid connected run-of-river hydropower project located in Himachal Pradesh, India with capacity of 36 MW.

⁶ https://globalgoals.goldstandard.org/standards/202_V1.3_AR-Renewable-Energy-Activity-Requirements.pdf

	threshold shall apply to each one of the project activities as part of a bundle, and not to the overall bundle, and to each CPA/VPA as part of a PoA. The Project Developer shall provide the following additional information as part of the documentation to be reviewed: a. A Stakeholder Consultation Report, in accordance with the relevant Stakeholder Consultation and Engagement Requirements. For project activities involving existing dams (such as dams built for irrigation purposes), the stakeholder consultation shall include a site-visit by local stakeholders taking part in the consultation. b. A Compliance Report showing that the project is in compliance with the latest World Commission on Dams (WCD) guidelines¹⁷, validated by a GS-VVB.	a. A Stakeholder Consultation Report, in accordance with the relevant Stakeholder Consultation and Engagement Requirements is provided. The project is run of river and not on existing hence, the stakeholder consultation including a site-visit by local stakeholders taking part in the consultation is not required b. The project is located in in Himachal Pradesh, India. As per the host country norms, it is not mandatory to have the compliance report showing that the project is in compliance with the latest World Commission on Dams (WCD) guidelines¹⁷. As a compliance in India, an Environmental Impact Assessment report (including Environmental Management Plan) is prepared and approved by the authority.
1.2	Hydropower projects located in High Conservation Values (HCVs)¹⁸ areas shall NOT be eligible for certification under Gold Standard for the Global Goals (GS4GG). The Project Developers must assess if the project activity is located in HCVs area. For such assessment, the Project Developer shall consult with local government authorities AND refer to existing international sources of information such as the World Database on protected	The project activity is not located in High Conservation Value (HCV) area. The link for the same has been provided to the assessment team. http://natureconservation.in/state-wise-list-of-conservation-reserves-of-india-updated/

	planets, IUCN, UNEP, the Ramsar list of wetlands, and the United Nations list of protected areas. The outcome of the assessment shall be provided with the project documentation submitted for preliminary review.	
1.3	Unless deemed by the Gold Standard as already addressed satisfactorily as part of an existing Environmental and Social Impact Assessment (ESIA), the opinion of an independent, relevant expert(s) shall be provided, at a minimum, on all of the following assessment questions (evidence must be provided to substantiate the opinion to justify the relevance or non-relevance of a given assessment question):	As a compliance an EIA report (along with EMP) is prepared and approved by the authority. It is not mandatory to provide the opinion of an independent, relevant expert, as the EIA + EMP is prepared and approved by the concerned authority. As a part of Environmental and Social Impact Assessment (ESIA), all issues are addressed satisfactorily in the EIA report. Thus separate opinion of an independent, relevant expert(s) is not required. As a part of approval process, the project has already been received clearances from following government departments, 1) Irrigation and Public health department 2) Director (Fisheries) Govt of Himachal Pradesh 3) Gram Panchayat of Baghaigarh, Tikrigarh and Lasuan 4) The inescapability and essentiality certificate for private land acquisition 5) Additional Director General of Forest - for forest land diversion
a	Are there any competing uses of water resources at the project location, of what nature and how severe are they? Convincing evidence must be provided that the hydropower project does not divert water from other current users or if it does, these users are in agreement with the shift of use.	There are no competing users of water resources at the project location.

b	What is the minimum ecological flow that shall be complied with at any point in time, accounting for the specificities of local ecosystems and seasonality? What quality assurance and control procedures shall be put in place for appropriate continuous monitoring over the crediting period?	As a part of Environmental Impact Assessment – a detailed information on release of minimum flow is covered under the report. The EIA report is approved As mentioned in the EIA report, the quality assurance and control procedures are put in place for appropriate continuous monitoring over the crediting period
c	Is the groundwater level seriously affected by the hydropower project? What quality assurance and control procedures shall be put in place for appropriate continuous monitoring over the crediting period?	The groundwater level is not affected by the hydropower project. A detailed study on the impact assessment and its evaluation with mitigation plan is provided in the EIA report. The quality assurance and control procedures are put in place for appropriate continuous monitoring over the crediting period.
d	Is the design of the fish passages and screens (water intake structure) installed in line with internationally recognised guidance? Are these measures indeed effective over the crediting period, and if not, what shall be done to improve the situation?	The design of the fish passages and screens (water intake structure) are installed in line with required standards and the details are mentioned in the EIA report. The measures installed are effective over the crediting period.
e	What sediment management plan shall be considered? Is it indeed effective over the crediting period, and if not, how shall it be improved?	The sediment management plan is provided in the EIA report. The sediment management plan suggested in the EIA report is effective over the crediting period.
f	What mitigation measures shall be put in place to prevent soil erosion? Are they effective and if not, what complementary action shall be taken?	A detailed information is provided in the EIA report for the mitigation measures to prevent the soil erosion. The mitigation measures are implemented and are effective
1.4	Besides the assessment questions listed above, the expert(s) is free to include any other issue that they identify as being relevant to the project. The Gold Standard, Project	All the regulatory requirements for the project activity are met with. The detailed EIA report is prepared for the project activity and the same is approved by the authorities.

	Representative(s) and the independent expert shall enter into a tripartite Memorandum of Understanding (MOU) within the context of the requirements prescribed in paragraph 1.1.3 (Annex A) above. The Project Developers have the opportunity to provide their views on the identified issues and their relevance as part of the report to be delivered by the expert.. For regular cycle projects, the independent expert(s) shall be invited to the Stakeholder Consultation and will identify the list of issues for which an independent expert opinion will be needed on time for validation and/or verification.	The EIA report is prepared by an independent third party which is approved by the regulatory body. All the issues identified during the EIA studies are evaluated. Further the impact assessment is done and the mitigation measures/ environment management plan is suggested. As a part of Environmental and Social Impact Assessment (ESIA), all issues are addressed satisfactorily in the EIA report. Thus separate opinion of an independent, relevant expert(s) is not required.
1.5	The list of assessment areas for potential issues are subject to approval by Gold Standard as part of the review of the stakeholder consultation report. For retroactive projects, a Detailed Preliminary Review (Pathway 2 as per Principles and Requirements) shall be conducted. Independent expert(s) shall be contracted on time to deliver, as part of the documentation submitted for preliminary review, the list of assessment areas for which an independent expert opinion will be needed on time for validation and/or verification. This list is reviewed and potentially approved by Gold Standard as part of the preliminary review.	The EIA report is prepared by an independent third party which is approved by the regulatory body. The assessment areas covered under EIA is as per the standards/ norms stipulated by the competent authority. All the issues identified during the EIA studies are evaluated. Further the impact assessment is done and the mitigation measures/ environment management plan is suggested.
1.7	Project Developer shall plan for and conduct a one-day training for the hydropower plant staff on the different issues identified by the independent expert. This training shall be included in the Monitoring & Reporting Plan.	The EIA report is prepared by an independent third party which is approved by the regulatory body. Thus separate independent expert(s) is not required. Project developer conduct a one day training for hydropower plant staff and the same is included in the monitoring and reporting plan.

The project activity meets the eligibility criteria as per section 3.1.1 of GS4GG Principles & Requirements document as described below:

- The project applies methodology ACM0002 Version 20, Sectoral Scope: 01, which is an approved methodology under Gold Standard.
- The project type is power generation using Hydro Energy which is an eligible project type as it is in accordance with 1.1.1 a) and 1.1.1 b) of the Eligible Project Types & Scope under Renewable Energy Activity Requirements.
- The project activity results in displacement of electricity from thermal power stations while contributing to sustainable development of India. Hence, the project contributes to the Gold Standard Vision and Mission.
- Hydro power is an approved project type and does not require approval from Gold Standard.
- This project activity is not associated with geo-engineering or energy generated from fossil fuel or nuclear, fossil fuel switch, nor does it enhances or prolongs such energy generation.
- As per para 1.1.2 hydro projects require some additional eligibility criteria for GS registration
- The project activity is not located in High Conservation Value (HCV) areas.
- As a part of Environmental and Social Impact Assessment (ESIA), all issues are addressed satisfactorily. Thus separate opinion of an independent, relevant expert(s) is not required. An Environmental Impact Assessment (EIA) was carried out for the proposed project activity to assess the potential impacts of the project on forest, natural habitats and wildlife, air, water and land. On the basis of EIA study, environmental impacts are not considered significant. After the completion of the construction of the project, the project was put into operation only after inspection and acceptance of Himachal Pradesh State Pollution Control Board (HP SPCB).
- The project is a run-of-river type hydro power project, therefore environmental impacts typically associated with hydro power plants such as construction of dams, inundation of large areas and change in waterways do not occur. An Environmental Impact Assessment (EIA) was carried out for the proposed project activity to assess the potential impacts of the project on forest, natural habitats and wildlife, air, water and land.

A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

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IA Hydro Energy Private Limited is the project proponent (PP) of project activity and have the legal right to control and operate the project activities.

The project ownership has been demonstrated through below supporting documents:

Commissioning certificates – The Declaration letter from IA Hydro Energy Private Limited to The Chief Engineer (Energy), Directorate of Energy, Govt. of HP, Shimla letter indicates that PP have the legal right to control and operate the project activities.

Contract with Equipment Supplier – The purchase order on the name of IA Hydro Energy Private Limited indicates that PP have the legal right to control and operate the project activities.

A.2 Location of project

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Host Country : India
Region/State/Province etc. : Himachal Pradesh, India
City/Town/Community etc. : Chamba district

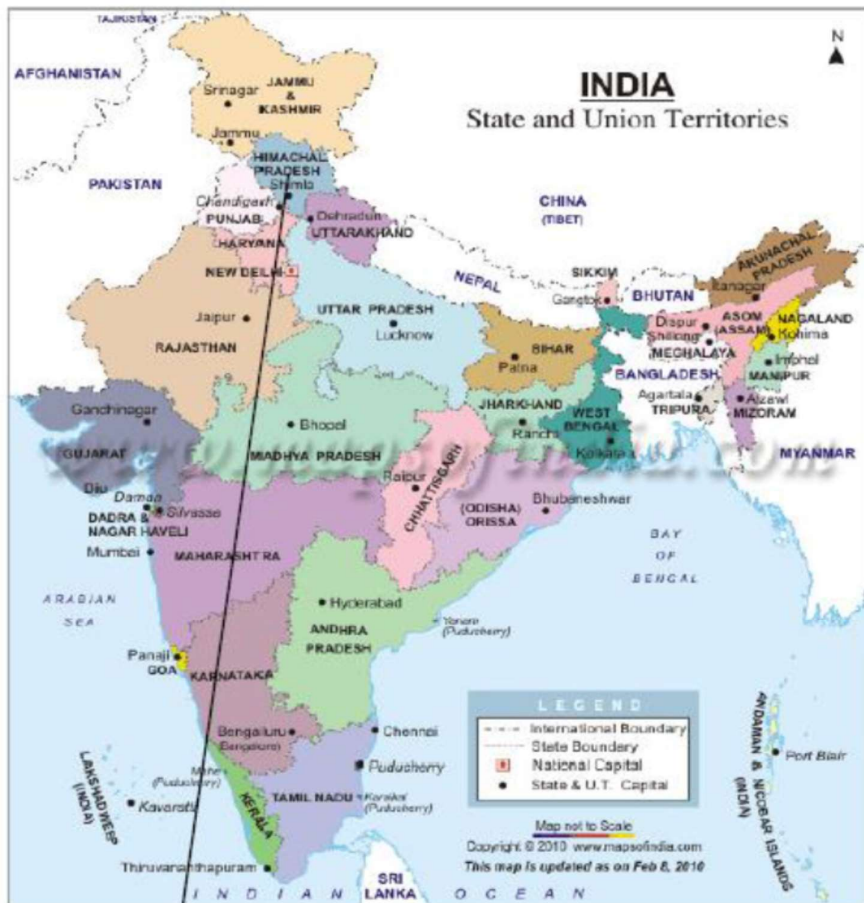
The project is located on Chanju nallah, a tributary of Baira nallah and sub-tributary of the River Ravi. The access distance of the project site from:

State Capital, Shimla : 378 km
 District headquarter, Chamba : 70 km
 Nearest railhead, Pathankot : 190 km

The geographical co-ordinates of the power plant site are:

Longitude : 76°12'06" (76.2016) E to 76°14'52" (76.2477) E
 Latitude : 32°44'14" (32.7372) N to 32°45'43" (32.7619) N

The project activity is clearly illustrated in the map below:



Project Activity

A.3 Technologies and/or measures

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Prior to the implementation of the project activity the electricity distribution system was supplied by at least one fossil fuel fired generating unit. The baseline scenario is the same as the scenario existing prior to the start of implementation of the project activity.

The proposed project is a run-of-river hydro electric power plant with a design discharge of 16.85 m³/sec and design head of 236.67 m. The hydro power plant has an installed capacity of 36 MW (3x12) and is capable of producing 157,850 MWh of power per year in a 90% dependable year with 95% machine availability and operating at a plant load factor of 50.05%. The catchment area at the diversion site is 307 km².

The salient features of the Chanju I Hydro Electric Project are:

Parameter	Value
Net Head	236.67 m
Type of power house	Surface
Design discharge per unit	5.62m ³ /sec
Type of switchgear	132kV air insulated switchgear
Speed of turbine	750 rpm
Generation voltage	11kV
Transmission voltage	132kV
GSU transformer	25/20 MVA 3 phase, 11/132 kV

The main components of the project are:

- A 54m wide gated weir
- A side intake comprising of two segments
- Twin desilting basins to provide flexibility in operation in case one is out of operation
- A 5328 m pressure flow head race tunnel
- A 140.4m long, 2.3m diameter surface penstock
- A surface power house to house three vertical axis Francis units of 12MW each
- A tail race channel with a reverse slope that will discharge into the river in the direction of the river flow
- A surface switchyard 100m x 50m which shall house the generator transformer, station transformer and the feeder bays
- 132 kV DC line from Kurthala to Bathri for evacuation of power

The project comprises of a diversion weir across Chanju nallah at about 100 m downstream of the confluence of Chanju and Bhararu nallahs, twin intakes, twin feeder/ connecting tunnels, twin desilting basins approximately 83 m long each, a headrace tunnel approximately 4580 m concrete lined and 748 m steel lined. A 528 m long construction adit, which acts as a surge gallery has been provided at Naredh nallah crossing. Tail water is proposed to be discharged into Chanju nallah through an open channel. A 132 kV switchyard is proposed on the upside of the power house. The Full Reservoir Level (FRL) and Minimum Draw Down Level are proposed to be kept at El. 1,440 m and El. 1,432.75 m respectively. The live storage works out to be 130,700 m³ which is adequate to provide two hours of peaking twice a day at full installed capacity of 36MW. The energy storage capacity of the hydro electric plant during peak period is 50.07GWh.

The turbine characteristics would be selected such that the optimum efficiency falls close to the rated output of the unit at rated head. A pumping station will be provided to supply an adequate quantity of water from the tailrace for cooling of the turbine generator bearings, generator air coolers and selected plant services.

Each synchronous generator would be vertical shaft, salient pole type, 3 phase, 50Hz directly coupled to the turbine. It would be rated for a continuous output of 25/20 MVA at a power factor of 0.85 and a rated voltage of 11kV.

The power from the proposed project activity has been planned to be injected at Nakrod by LILO arrangement in to 132 kV D/C line under construction between 132kV Kurthala sub-station and existing 132kV Bathri and 220/132kV Chamba sub-stations. The line length up to Nakrod shall be about 6 kms.

In the absence of the project activity the power in the grid would have been supplied by other grid connected power plants and addition of new power plants. The baseline scenario identified in Section B.4 corresponds to this situation.

The technology involved is environmentally safe and produced locally.

A.4 Scale of the project

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The project is a large scale (Non micro scale) project utilizing hydro energy to generate electricity. The total installed capacity of the project is 36 MW

A.5 Funding sources of project

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Development Assistance (ODA) involved in the project activity.

The project is funded by loan and equity. PP want to keep the sources of funding as confidential. Hence as per GS4GG PDD completion guidelines, these confidential information is not provided here.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

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Methodology: ACM0002, Version 20.0⁷, Sectoral Scope: 01

Tool

It has been referred from the list of approved methodologies for CDM project activities in the UNFCCC CDM website

(<http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html>)

The approved methodology also draws upon

- Tool for the demonstration and assessment of additionality - Version 7.0.0⁸
- Tool to calculate the emission factor for an electricity system - Version 7.0⁹

This GS4GG PDD has been developed using the methodology ACM0002, Version 20.0 though registered CDM PDD follows ACM0002, Version 16.0.

The latest version of methodology is ACM0002, Version 20.0 and the project activity meets the applicability and eligibility criteria of latest version of methodology also.

B.2. Applicability of methodology (ies)

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The project activity meets the applicability conditions of the approved consolidated baseline and monitoring methodology ACM0002, Version 20.0, Sectoral Scope 1, EB 105 as described below:

Applicability	Project Activity
This methodology is applicable to grid-connected renewable energy power generation project activities that: a. Install a Greenfield power plant; b. Involve a capacity addition to (an) existing plant(s); c. Involve a retrofit of (an) existing operating plants/units; d. Involve a rehabilitation of (an) existing plant(s)/unit(s); or e. Involve a replacement of (an) existing plant(s)/unit(s).	The project activity is a Renewable Energy Project i.e. run-of-river Hydro Power Project which falls under applicability criteria option 1 (a) i.e., "Install a Greenfield power plant". Hence the project activity meets the given applicability criterion.
The project activity may include renewable energy power plant/unit of one of the following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave	The project activity is an installation of a new grid connected renewable energy power plant and hence this condition is met.

⁷ <https://cdm.unfccc.int/UserManagement/FileStorage/AG07ZJO3EXD42LT5YV9HR16M8KINPO>

⁸ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf>

⁹ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.0.pdf>

Applicability	Project Activity
power plant/unit or tidal power plant/unit;	
In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	The project activity does not involve any capacity additions, retrofits or replacements and therefore this condition is not applicable.
In case of hydro power plants, one of the following conditions shall apply: a. The project activity is implemented in existing single or multiple reservoirs, with no change in the volume of any of the reservoirs; or b. The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density calculated using equation (3), is greater than 4 W/m²; or c. The project activity results in new single or multiple reservoirs and the power density, calculated using equation (3), is greater than 4 W/m². d. The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (3), is lower than or equal to 4 W/m², all of the following conditions shall apply: i. The power density calculated using the total installed capacity of the integrated project, as per equation (4), is greater than 4 W/m²; ii. Water flow between reservoirs is not used by any other hydropower unit	The project activity is the installation of a 36 MW run-of-river hydro power project and does not involve the construction of a dam. The reservoir area created by the diversion barrage is of the order of 0.017sq km and hence the power density comes out to be 2,117.64 W/m ² which is greater than 4W/m ² .

Applicability	Project Activity
which is not a part of the project activity; iii. Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be; a. Lower than or equal to 15 MW; and b. Less than 10 per cent of the total installed capacity of integrated hydro power project.	
In the case of integrated hydro power projects, project proponent shall: a. Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or b. Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum of five years prior to the implementation of the CDM project activity.	The project activity is a grid connected renewable run-of-river hydro power project. Therefore this condition is not applicable for project activity.
The methodology is not applicable to: a. Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; b. Biomass fired power plants/units.	The project activity is an installation of a new grid connected renewable energy project and does not involve switching from fossil fuel to renewable energy and hence this criterion is not relevant to the project activity.
In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most	The project activity is a new grid connected renewable Hydro power plant and not a retrofits, replacement or

Applicability	Project Activity
plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	capacity additions and therefore this criterion is not applicable to the project activity.
Applicability conditions of "Tool to calculate the emission factor for an electricity system" Version 07.0(EB 100 Annex 04)¹⁰	
This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).	The project is a grid connected Greenfield Hydro power project and thus the tool is applicable.
Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off- grid power plants. In the latter case, the conditions specified in "Appendix 2: Procedures related to off- grid power generation" should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	Steps involved in calculation of Emission Factor is included in section B.6.2 of the PDD as per the requirement of the tool
In case of CDM projects the tool is not applicable if the project electricity system	Project is located in non-Annex I country and hence the tool is applicable

¹⁰ <http://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

Applicability	Project Activity
is located partially or totally in an Annex I country.	
Under this tool, the value applied to the CO ₂ emission factor of biofuels is zero.	The project is a Hydro power project and there is no involvement of biofuels.

B.3. Project boundary

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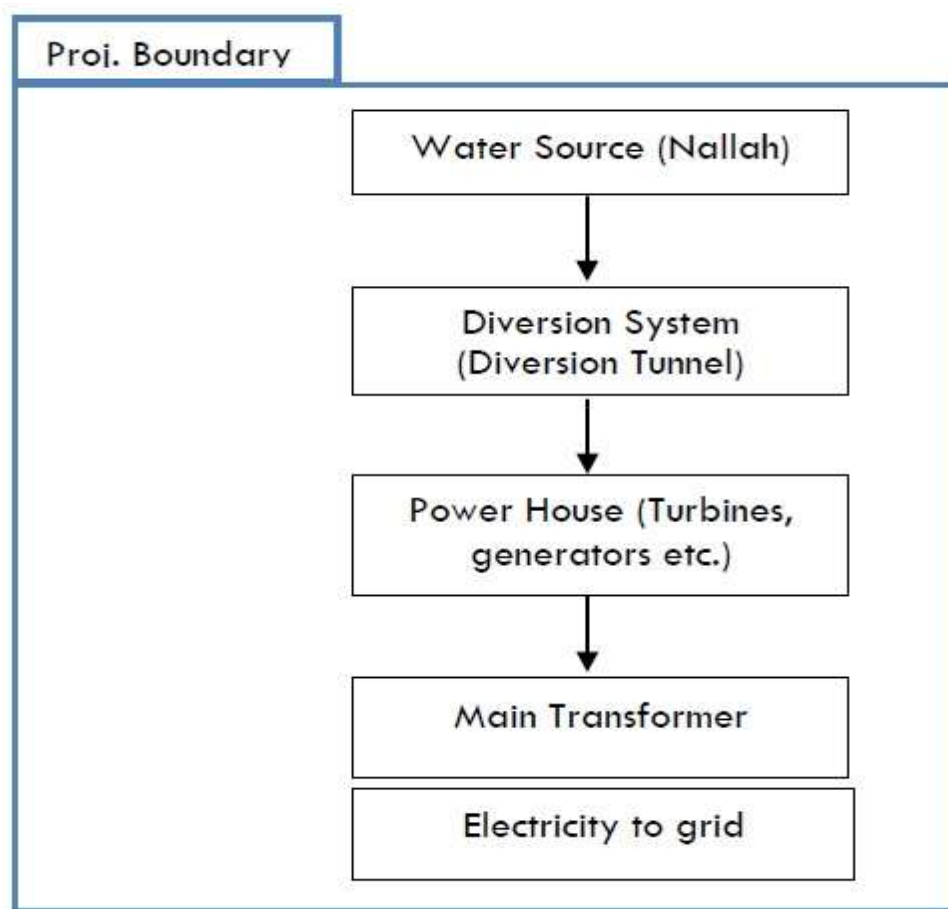
Project boundary has been ascertained using para 20 of methodology ACM0002 (Version 20, EB 105) - "The spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system that the CDM project power plant is connected to.

In case of the project activity the project boundary thus includes the project hydro power plant and all the other power plants connected to the NEWNE grid (Now Indian Grid) of India.

The electricity system is defined according to the "Tool to calculate the emission factor for an electricity system, version 07.0".

For the purpose of the project activity the relevant grid is defined by the power generating units serving the same grid as the project activity. In the case of India there are regional grids which facilitate the transfer of electricity between states and which are supplied by central sector power stations operating in the region. Himachal Pradesh is part of the northern region and we have therefore considered the NEWNE grid (Now Indian Grid).

The below flow diagram physically delineates the project activity and its relevant information:



The GHG emission sources considered for the project boundary and their explanations are as follows:

Source		GHGs	Included?	Justification/Explanation
Baseline scenario	Electricity generation from power plants Connected to Indian grid	CO ₂	Included	Main emission source
		CH ₄	Excluded	Not required as per ACM0002
		N ₂ O	Excluded	Not required as per ACM0002
Project scenario	Electricity generation from grid connected Hydro power project	CO ₂	Excluded	Electricity generation from Hydro does not lead to emissions of greenhouse gases.
		CH ₄	Excluded	Excluded for simplification.
		N ₂ O	Excluded	Excluded for simplification.

B.4. Establishment and description of baseline scenario

>>

The approved consolidated baseline methodology, ACM0002, (Version 20), has been used to determine the baseline and the estimation of emission reductions for the applicable crediting period. As referred in the methodology "Tool to calculate the

emission factor for an electricity system” (version 07.0) has been used to determine continued validity of the baseline based on combined margin (CM) calculations.

As per the approved consolidated methodology ACM0002,

If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

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, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”

The project activity involved setting up of hydro power project to produce electricity and supply to the grid. In the absence of the project activity, the equivalent amount of power would have been supplied by the state grid (part of NEWNE grid (Now Indian Grid)), which is fed mainly by fossil fuel fired plants.

In the absence of the project activity, the equivalent amount of power would have been drawn from the state grid. Hence, the baseline for the project activity is the equivalent amount of power from the NEWNE (Indian) grid.

The combined margin ($EF_{grid,CM,y}$) is the result of a weighted average of two emission factor pertaining to the electricity system: the operating margin (OM) and build margin (BM). Calculations for this combined margin must be based on data from an official source¹¹ (where available) and made publically available. The CEA database version 16 is the latest available data at the time of PD submission to DOE for validation, hence same is considered for emission factor calculations.

The combined margin of the Indian grid used for the project activity is as follows:

Parameter	Value	Nomenclature	Source
$EF_{grid,CM,y}$	0.9124 tCO ₂ /MWh	Combined margin CO ₂ emission factor for the project electricity system in year y	Calculated as the weighted average of the operating margin (0.50) & build margin (0.50) values, sourced from Baseline CO ₂ Emission Database, Version 16.0, Mar 2021 published by Central Electricity Authority (CEA), Government of India
$EF_{grid,OM,y}$	0.9568 tCO ₂ /MWh	Operating margin CO ₂ emission factor for the project electricity	Calculated as the last 3 year (2017-18, 2018-19, 2019-20) generation-weighted average, sourced from Baseline CO ₂ Emission Database, Version 16.0, Mar 2021 published by

¹¹ https://cea.nic.in/wp-content/uploads/baseline/2021/06/2019_20_CO2_database.zip

		system in year y	Central Electricity Authority (CEA), Government of India
$EF_{grid,BM,y}$	0.8682 tCO ₂ /MWh	Build margin CO ₂ emission factor for the project electricity system in year y	Baseline CO ₂ Emission Database, Version 16.0, Mar 2021 published by Central Electricity Authority (CEA), Government of India

This emission factor will remain fixed for entire crediting period.

The baseline emission calculation for the project activity is attributable to the CO₂ Emission that could have been produced by the fossil fuel based power plants in absence of the proposed project activity. Therefore the amount electricity supplied to the NEWNE grid (Now part of Indian Grid) will be multiplied by the grid emission factor to calculate the baseline emissions reduced by the proposed project activity.

$$BE_y = EG_{facility,y} \times EF_{grid,CM,y}$$

Where

- BE_y : Baseline Emissions in year y; tCO₂
 EG_{facility,y} : Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
 EF_{grid,CM,y} : CO₂ emission factor of the grid in year y; tCO₂/MWh

As per methodology, combined grid emission factor as per the “Tool to calculate the emission factor for an electricity system” version 07 is calculated as below.

CO₂ Baseline Database for the Indian Power Sector, Version 16, Mar 2021¹² published by Central Electricity Authority (CEA), Government of India has been used for the calculation of emission reduction.

As per Methodological tool: Tool to calculate the emission factor for an electricity system (Version 07.0, EB 100, Annex 4), following six steps have been followed:

- a) Step 1 : Identify the relevant electricity systems;
- b) Step 2 : Choose whether to include off-grid power plants in the project electricity system (optional);
- c) Step 3 : Select a method to determine the operating margin (OM);
- d) Step 4 : Calculate the operating margin emission factor according to the selected method;
- e) Step 5 : Calculate the build margin (BM) emission factor;

¹² https://cea.nic.in/wp-content/uploads/baseline/2021/06/2019_20_CO2_database.zip

f) Step 6 : Calculate the combined margin (CM) emission factor.

Step 1: Identify the relevant electricity systems

As described in tool “For determining the electricity emission factors, identify the relevant project electricity system. Similarly, identify any connected electricity systems”. It also 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”. Keeping this into consideration, the Central Electricity Authority (CEA), Government of India has divided the Indian Power Sector into five regional grids viz. Northern, Eastern, Western, North-eastern and Southern.

However since August 2006, however, all regional grids except the Southern Grid had been integrated and were operating in synchronous mode, i.e. at same frequency. Consequently, the Northern, Eastern, Western and North-Eastern grids were treated as a single grid named as NEWNE grid from FY 2007-08 onwards for the purpose of this CO₂ Baseline Database. As of 31 December 2013, the Southern grid has also been synchronised with the NEWNE grid, hence forming one unified Indian Grid. Since the project supplies electricity to the Indian grid, emissions generated due to the electricity generated by the Indian grid as per CM calculations will serve as the baseline for this project.

Table: Geographical Scope of Indian Electricity Grid

Northern	Eastern	Western	North-Eastern	Southern
Chandigarh	Bihar	Chhattisgarh	Arunachal Pradesh	Andhra Pradesh
Delhi	Jharkhand	Gujarat	Assam	Karnataka
Haryana	Orissa	Daman & Diu	Manipur	Kerala
Himachal Pradesh	West Bengal	Dadar & Nagar Haveli	Meghalaya	Tamil Nadu
Jammu & Kashmir	Sikkim	Madhya Pradesh	Mizoram	Telangana
Punjab	Andaman & Nicobar	Maharashtra	Nagaland	Puducherry
Rajasthan		Goa	Tripura	Lakshadweep
Uttar Pradesh				
Uttarakhand				

Step 2: Choose whether to include off-grid power plants in the project electricity system (optional)

Project participants may choose between the following two options to calculate the operating margin and build margin emission factor:

Option I: Only grid power plants are included in the calculation.

Option II: Both grid power plants and off-grid power plants are included in the calculation.

The Project Participant has chosen only grid power plants in the calculation.

Step 3: Select a method to determine the operating margin (OM)

The calculation of the operating margin emission factor ($EF_{grid,OM,y}$) is based on one of the following methods, which are described under Step 4:

- a) Simple OM; or
- b) Simple adjusted OM; or
- c) Dispatch data analysis OM; or
- d) Average OM.

The data required to calculate Simple adjusted OM and Dispatch data analysis OM is not possible due to lack of availability of data to project developers. The choice of other two options for calculating operating margin emission factor depends on generation of electricity from low-cost/ must-run sources. In the context of the methodology low cost/must run resources typically include hydro, geothermal, wind, low cost biomass, nuclear and solar generation.

Share of Must-Run (Hydro/Nuclear) (% of Net Generation)

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
India	16.8%	15.1%	14.6%	14.3%	14.5%	17.0%

Data Source: Central Electricity Authority (CEA) database Version 16, Mar 2021¹³

The above data clearly shows that the percentage of total grid generation by low-cost/ must-run plants (on the basis of average of five most recent years) for the Indian grid is less than 50 % of the total generation. Thus the Average OM method cannot be applied, as low cost/must run resources constitute less than 50% of total grid generation.

The simple OM emission factor is calculated as the generation-weighted average CO₂ emissions per unit net electricity generation (tCO₂/MWh) of all generating power plants serving the system, not including low-cost/must-run power plants/units.

For the simple OM, the simple adjusted OM and the average OM, the emissions factor can be calculated using either of the two following data vintages:

Ex-ante option: if the ex-ante option is chosen, the emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emissions factor during the crediting period is required.

OR

Ex-post option: if the ex-post option is chosen, the emission factor is determined for the year in which the project activity displaces grid electricity, requiring the emissions factor to be updated annually during monitoring.

¹³https://cea.nic.in/wp-content/uploads/baseline/2020/07/database_15.zip

PP has chosen ex-ante option for calculation of Simple OM emission factor using a 3-year generation-weighted average, based on the most recent data available at the time of submission of the PD to the DOE for validation.

OM determined at validation stage will be the same throughout the crediting period. There will be no requirement to monitor & recalculate the emission factor during the crediting period.

Step 4: Calculate the operating margin emission factor ($EF_{grid,OMSimple,y}$) according to the selected method

The operating margin emission factor has been calculated using a 3 year data vintage:

Net Generation in Operating Margin (GWH) (incl. Imports)			
	2017-18	2018-19	2019-20
Indian Grid	960,693	995,957	965,009

Simple Operating Margin (tCO ₂ /MWh) (incl. Imports) (1) (2)			
	2017-18	2018-19	2019-20
Indian Grid	0.9543	0.9603	0.9555

Weighted Generation Operating Margin	
Indian Grid	0.9568

Step 5: Calculate the build margin (BM) emission factor ($EF_{grid,BM,y}$)

As per Methodological tool: "Tool to calculate the emission factor for an electricity system" (Version 07.0, EB 100, Annex 4) para 70:

In terms of vintage of data, project participants can choose between one of the following two options:

(a) Option 1 - for the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built for sample group m at the time of PD submission to the DOE for validation. For the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used. This option does not require monitoring the emission factor during the crediting period.

(b) Option 2 - For the first crediting period, the build margin emission factor shall be updated annually, ex post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emissions factor shall be calculated ex ante, as described in Option 1 above. For the third crediting period, the build margin emission factor calculated for the second crediting period should be used.

Option 1 as described above is chosen by PP to calculate the build margin emission factor for the project activity. BM is calculated ex-ante based on the most recent

information available at the time of submission of PD and is fixed for the entire crediting period.

Build Margin (tCO ₂ /MWh) (not adjusted for imports)	
	2019-20
Indian Grid	0.8682

Step 6: Calculate the combined margin (CM) emission factor ($EF_{grid,CM,y}$)

As per Methodological tool: "Tool to calculate the emission factor for an electricity system" (Version 07.0, EB 100, Annex 4) para 79:

The calculation of the combined margin (CM) emission factor ($EF_{grid,CM,y}$) is based on one of the following methods:

- (a) Weighted average CM; or
- (b) Simplified CM.

PP has chosen option (a) i.e. weighted average CM to calculate the combined margin emission factor for the project activity.

The combined margin emissions factor is calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$$

Where

- $EF_{grid,BM,y}$ = Build margin CO₂ emission factor in year y (t CO₂/MWh)
- $EF_{grid,OM,y}$ = Operating margin CO₂ emission factor in year y (t CO₂/MWh)
- W_{OM} = Weighting of operating margin emissions factor (percent)
- W_{BM} = Weighting of build margin emissions factor (percent)

As per para 86 b) of tool, the following default values should be used for W_{OM} and W_{BM} :

All other projects: $W_{OM} = 0.5$ and $W_{BM} = 0.5$ for the first crediting period, and $W_{OM} = 0.25$ and $W_{BM} = 0.75$ for the second and third crediting period, unless otherwise specified in the approved methodology which refers to this tool.

Since project activity is of Hydro power generation, the above weightage has been considered for OM and BM.

$$\begin{aligned} \text{Therefore, } EF_{grid,CM,y} &= 0.9568 * 0.50 + 0.8682 * 0.50 \\ &= 0.9124 \text{ t CO}_2/\text{MWh} \end{aligned}$$

For the purpose of calculations, $EF_{grid,CM,y} = EF_{CO2,grid,y}$

Using the fixed carbon dioxide emissions factor determined above, this equation may be simplified to the following:

$$BE_y = EG_y * 0.9124$$

As per the methodology, for Greenfield renewable energy power plants:

$$EG_{PJ,y} = EG_{\text{facility},y}$$

Where

$EG_{PJ,y}$ = 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/yr)

$EG_{\text{facility},y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

Since the carbon dioxide emission factor has been fixed ex-ante at 0.9124 tCO₂/MWh, baseline emissions are calculated as:

$$BE_y = EG_{\text{facility},y} * 0.9124$$

Project Emissions: For most renewable power generation projects activities $PE_y = 0$. As per applied methodology only emission associated with the fossil fuel combustion, emission from operation of geo-thermal power plants due to release of non-condensable gases, emission from water reservoir of Hydro should be accounted for the project emission. Since the project activity is a Hydro power project,

The project activity results in new reservoir and as per the methodology – For hydro power project activities that result in new single or multiple reservoirs and hydro power project activities that result in the increase of single or multiple existing reservoirs, project proponents shall account for project emissions, estimated as follows:

(a) If the power density (PD) of power plant is greater than 4 W/m² and less than or equal to 10 W/m²:

$$PE_{HP,y} = \frac{EF_{Res} * TEG_y}{1000}$$

Where

$PE_{HP,y}$ = Emission from water reservoirs(tCO₂e/yr)

EF_{Res} = is the default emission factor for emissions from reservoirs of hydro power plants in year y (kgCO₂e/MWh)

TEG_y = Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (MWh).

(b) If the power density (PD) of the power plant is greater than 10 W/m²:

$$PE_{HP,y} = 0$$

The power density of the project activity is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}}$$

Where

- PD = Power density of the project activity, in W/m²
- Cap_{PJ} = Installed capacity of the hydro power plant after the implementation of the project activity (W)
- Cap_{BL} = Installed capacity of the hydro power plant before the implementation of the project activity (W)
- For New hydro power plants, this value is Zero.
- A_{PJ} = Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m²)
- A_{BL} = Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m²). For new reservoirs, this value is zero."

Hence PE_y= 0

Leakage Emissions: No Leakage emissions are considered. The main emission potentially giving rise to leakage in the context of electrical sector projects is emission arising due to activities arising such as power plant construction and upstream emission from fossil fuel use (e.g. extraction, processing, and transport). These emission sources are neglected.

Hence, LE_y= 0

Emission reduction (ER_y): The project activity mainly reduces carbon dioxide through substitution of grid electricity generation with fossil fuel fired power plant by renewable electricity. The emission reduction ER_y by the project activity during a given year y is the difference between Baseline emission and Project emission & Leakage emission.

ER_y = BE_y - PE_y

- ER_y = Emission reductions in year y (t CO₂e/yr)
- BE_y = Baseline emissions in year y (t CO₂/yr)
- PE_y = Project emissions in year y (t CO₂e/yr)

B.5. Demonstration of additionality

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Specify the methodology, activity requirement or product requirement that establishes deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).	NA
Describe how the proposed project meets the criteria for deemed additionality.	NA

Chronology of events:

Sr. No.	Activity / Actions	Date (dd/mm/yyyy)	Document
1	Decision on appointment of consultant for DPR	14/01/2008	Minute of meeting
2	Contract with Agrinergy Consultancy Pvt Ltd for the CDM project development	25/01/2008	Copy of contract
3	Investment decision based on DPR	24/06/2008	Minute of meeting
4	Letter of CDM consideration sent to Indian DNA (MOEF)	12/12/2008	Copy of the letter
5	Agreement signed with DOE for CDM Validation	15/12/2008	Copy of the agreement
6	Newspaper notice by Department of MPP & Power	14/01/2009	Copy of Newspaper
7	Stakeholder consultation to seek CDM	17/01/2009	Invitation letter and minutes of meeting
8	Global Stakeholder publication on UNFCCC website	21/01/2009	http://cdm.unfccc.int/Projects/Validation/DB/WJXZ7HP_LKXRX8MHCSSKINJUBWGH_VE0/view.html
9	Another Newspaper notice to seek CDM status	18/02/2009	Copy of Newspaper
10	NOC from village Lesui	01/03/2009	Copy of letter
11	NOC from village Bhaghiagarh	01/03/2009	Copy of letter
12	NOC from village Tikrigarh	08/03/2009	Copy of letter
13	Newspaper notice for EIA in Times of India	22/09/2010	Copy of Newspaper
14	Newspaper notice for EIA in Dainik Jagran	23/09/2010	Copy of Newspaper
15	Newspaper notice for EIA in Indian Express and Aapka Faisla	24/09/2010	Copy of Newspaper
16	Techno Economic Clearance obtained	24/04/2010	Copy of TEC
17	Environmental public hearing	27/10/2010	Copy of meeting
18	Environmental Clearance from MoEF, Govt. Of India	20/04/2011	Copy of approval
19	Forest clearance from MoEF	15/06/2011	Copy of approval
20	PO for civil work	23/07/2011	Copy of Purchase order
21	Intimation to UNFCCC expressing intent to secure CDM status for 36MW Hydro Power Project	27/09/2011	Email communication

The main reason of the delay in commissioning of our project is tabulated as under

Description	Start Date of Activity
Award of first Civil works	23-07-2011

Project completion date i.e. 42 months from award of first civil work	22-01-2015
Actual date of Commercial Operation of the Project	26/07/2017
Projects of Delay	2 years 6 months 2 days

Reasons of delay in commissioning of project is tabulated as under:

SI	Description	Date of Happening	Restoration Date	Remarks
1.	Geological reasons			
a	Sliding of rock mass at dam site	12-02-2013 and 04-04-2013	1-12-2014	PP could not do any activity for 1 year 10 months and 21 days. This has been verified by Directorate of Energy Team
b	Sliding of hill at power house site	26-03-2013	1-10-2014	1 year 6 months 5 days
c	Time taken for realignment approval of change in layout due to adverse geological surprises	03-06-2014	16-01-2015	6 month 13 days
d	Time taken for development and construction as per changed layout	16-01-2015	15-02-2017	2 years 29 days
2	Power evacuation problem for 36 MW	24-02-2017	26-07-2017	The arrangement was only for evacuation of 24 MW as pointed out by Additional SE Jassour Vide Letter No.HPSEBL/DBJSSD/Chanju-HEP/2017/18 2698-2704 dated 15-07-2017 and subsequent mail dated 15-7-2017 of AE (E) Sub-station Bathri Still work of HPPTCL line is not completed.
3	Hindrance by local residents & Labour strike			199 days

Geological adversity:

During the execution of the project unexpected sliding of the rock has been triggered at dam site on dated 12-02-2013 which was not expected at all. We proposed breast wall from the toe of the hillside to stabilize the hill-and protect the sliding earth mass. On dated 4/04/2013 with the heavy rains the hill again started sliding in-spite of the breast wall provided in the toe. After the second slide we left with no alternative except to sought the help of expert to look into the detail of the sliding of the hill and the rock, The detailed examination was carried out by the geologist and hydro experts of our

Technical consultant Entura Hydro Tasmania. After examination the various remedial suggestions were given by the geologist and experts and were taken into account such as soil nailing, wire meshing and to divert the rain water through proper drainage from the top of the sliding area.

PP had acted upon the advice of the geologists and other experts the soil nailing, wire mesh and strengthening of drainage system were done to stabilize the sliding hill. This delayed the construction of barrage works by one year and eleven months.

During the excavation of pit for housing turbine and generator floor of the power house for which excavation of the order of 1,54,000 cum was nearing completion On dated 26-3-2013 a massive land slide triggered covering the whole area of power house, service bay switchyard and TRT upto the EL of 1320 M resulting in complete ripping of middle zone protection provided in the form of cement concrete cladding/wall and washing away of the work done. To stabilize the hill slope the opinion of experts were taken and they have suggested deep rooted RCC column upto the firm rock should be provided by way of drilling. There after cladding wall in steps should be provided to hold the loose soil/over burden. The sliding delayed the power house construction by one and half year. This has been brought to the notice of the DOE inspection team during 23-05- 2014 on their site visit.

Change of Layout: After experiencing the debacle of sliding at power house as well as on the barrage site and during detailed engineering (construction stage) the proposed project layout as well as individual components were studied in depth by Entura Hydro Tasmania and recommended for further additional sub-surface exploration to precisely decipher the bed rock configuration, especially at the HRT outlet, along penstock alignment and in power house area. The study was not favorable and the complete alignment of the HRT was realigned from Adit -3 junction to power house, which includes two number vertical shafts of 120m and 90m. The excavation of the vertical shaft was quite typical and consumes more time. Two number extra adits were also provided of order of 200m 316m length which further added to the cause of abnormal delay.

Power Evacuation:

After commissioning of the two units on 18th and 23rd February 2017 it was a problem for commissioning the third unit as there was no capacity of the transmission system to evacuate 36 MW power and the third unit was not commissioned. We were constantly in touch with the HPSEBL -and-HPPTCL but they failed-to provide us the evacuation arrangement: Finally on 18th July 2017 Addl. SE Jass our allowed us for the testing when the other power houses were under shut down and we made the testing arrangement and tested third unit as well as the project. Has the evacuation line available we might have commissioned the project at the end of the February 2017.

Hindrances by the Local Resident/Labour:

A lot of time was wasted by the local residents by putting their unreasonable demands such as heavy compensations and employment. As the labours were local and joined the hands with the local residents for creating hindrances in the construction works.

The following section demonstrates that the project activity is not part of the baseline scenario by drawing on version 07.0.0 of "Tool for the demonstration and assessment of additionality".

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a: Define alternatives to the project activity:

The demonstration of the baseline scenarios (in section B4) incorporated the steps contained within this section and the plausible baseline scenarios correspond to:

1. The proposed project activity without CDM i.e. the construction of a new hydro electricity generation plant with an installed capacity of 36MW connected to the regional grid, implemented without CDM status.

Under this scenario the project will generate zero emission power and cause emission reduction by displacing equivalent power generation from fossil fuels. However, the project cannot be implemented due to the investment barrier, which is analyzed in detail under Step 2.

2. Continuation of the current situation i.e. electricity will continue to be generated by the existing generation mix operating in the grid.

Under this alternative, the increasing demand of electricity would be met by increasing the installed capacity through the possible expansion of existing power plants as well as construction of new power plants according to the current policies and regulations. This is a realistic and credible scenario.

In conclusion the feasible alternative scenario is Alternative (2).

Sub-step 1b: Consistency with mandatory laws and regulations:

In terms of the alternatives mentioned, all conform to local and national policies and are therefore credible¹⁴.

Step 2: Investment analysis

The investment analysis has been undertaken in compliance with EB62 Annex 5 - "Guidance on the Assessment of Investment Analysis, Version 05".

Sub-step 2a: Determine appropriate analysis method

Option III, benchmark analysis has been used to demonstrate additionality of the project.

Sub-step 2b: Option III. Apply benchmark analysis

¹⁴ http://sjvn.nic.in/aboutus_hydro_power.asp
<http://www2.adb.org/documents/rpps/ind/41627-ind-rrp.pdf>
<http://www.circleofblue.org/waternews/wp-content/uploads/2010/11/ADB-Hydropower-Development-in-India.pdf>

The benchmark has been derived from paragraph 30(b) of the tool –

“(6) Discount rates and benchmarks shall be derived from:

(b) Estimates of the cost of financing and required return on capital (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on bankers views and private equity investors/funds’ required return on comparable projects.”

The project will be financed with a mix of debt and equity at a ratio of 70:30. Given the subjectivity of the return on equity and the variation across companies, we have provided the cost of commercial lending in India as a benchmark. The cost of commercial lending will be typically below the cost of equity as there is less risk associated with debt versus equity. The cost of commercial lending is reported on the website of State Bank of India through the prime lending rate which is quoted at 12.25¹⁵. Therefore the post tax benchmark is derived as 12.25% for the project activity. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III):

These financial calculations include all relevant revenues and costs associated with the project. The revenues include the sale of electricity from the power plant using the levelized tariff, assuming escalation as nil. The major costs to be incurred are the operation and maintenance of the equipments and the interest the project owners have to pay on the working capital.

All the assumptions have been taken from the Detailed Project Report prepared for the project activity. The IRR analysis was carried out in accordance with the Guidance on the Assessment of Investment Analysis Version 05.

Since I. A. Energy has chosen a renewable crediting period and the technical lifetime of the project activity is 40 years, the period of assessment was considered as 20 years. This is in accordance with the clarification on applicability of the “Guidelines on the assessment of investment analysis” (CDM-EB73-A08). The closing book value of the assets at the end of the 20 year assessment period was considered as a fair value of the assets.

The IRR of the project activity without taking into account CER revenues is 9.14%. Analyzing the rate of return without taking into account the CDM revenues, the project activity is found to be financially unattractive.

The financials have been done for 20 years and a tax exemption of 10 years taken into account as per the renewable energy policy of the host country. The data and assumptions for the calculation of project IRR have been mentioned below:

¹⁵ <https://www.sbi.co.in/portal/web/interest-rates/benchmark-prime-lending-rate-historical-data>

Parameters	Input Value	Data Source
Installed Capacity (MW)	36	DPR Volume 1, Chapter 2, Page 1
Operating Days	365	
Operating Hours	24	
Plant Load Factor	0.50054	DPR Volume 1, Chapter 2, Page 7
Gross Annual generation (million units)	157.850294	DPR Volume 2, Chapter 4, Page 8
Auxillary consumption + transmission losses	1.00%	DPR Volume 2, Chapter 4, Page 8
Net annual energy after Aux. consumption (million units)	156.271791	Calculated
Free Power for Local Area Development	1.00%	http://www.aegcl.co.in/Amendment_Tariff_Policy%2031_03_2008.pdf
Royalty (Free Power to utility) (First 12 Years)	12.00%	http://ireeed.gov.in/policydetails?id=74# (DPR Volume 2, Chapter 4 & Hydro Power Policy 2006)
Royalty (Free Power to utility)(Next 18 years)	18.00%	http://ireeed.gov.in/policydetails?id=74# (DPR Volume 2, Chapter 4 & Hydro Power Policy 2006)
Royalty (Free Power to utility) (Beyond 30 Years)	30.00%	http://ireeed.gov.in/policydetails?id=74# (DPR Volume 2, Chapter 4 & Hydro Power Policy 2006)
Tariff (Rs/ kWh)	3.3265	DPR Volume 2, Chapter 4
Project cost (Rs. million)	3040.8	DPR Vol 2, Chap 1, Pg 3
Financing pattern – Equity capital (Rs. million)	912.24	DPR Vol 2, Chap 1, Pg 3
- Debt (Rs. million)	2128.56	DPR Vol 2, Chap 1, Pg 3
O & M costs including insurance (On Project Cost)	1.50%	DPR Volume 2, Chapter 4, Page 8
Yearly Escalation on O&M cost	4.00%	DPR Volume 2, Chapter 4, Page 8
Interest Rate on loan	10.00%	DPR Volume 2, Chapter 4
Loan Repayment period (in Years)	10	DPR Volume 2, Chapter 4
Moratorium / Years (from COD)	0	
Interest rate on Working capital	12.25%	https://www.sbi.co.in/portal/web/interest-rates/benchmark-prime-lending-rate-historical-data
Depreciation rate (WDV)	3.40%	http://www.incometaxindia.gov.in/Rules/Income-Tax%20Rules/2008/103120000000007567.htm
Income Tax Rate	33.99%	https://indiantaxguide.wordpress.com/2009/01/30/income-tax-rates-applicable-for-ay-2009-10/

Sub-step 2d: Sensitivity analysis

The sensitivity analysis has been done in accordance with EB 62, Annex 5 'Guidelines on the Assessment of Investment Analysis' paragraph 20 and 21. The following parameters are expected to have a significant impact on the financial internal rate of return of the project and hence sensitivity analysis has been conducted for these:

1. Project cost
2. Plant load factor
3. Electricity tariff
4. O & M cost

The investment cost is unlikely to decrease due to time over runs related to large hydroelectric projects. However the parameter has been given a variation of +10% as per investment guidance and the results highlight the importance of CDM revenues for the setting up of the project activity.

Initial Investment Cost

	-10%	Base Case	10%
IRR without CDM	10.66%	9.14%	7.81%

We can conclude that the project IRR goes to 7.81% only in case the project cost is decreased by 10% and therefore remains below the benchmark. The project IRR only reaches the benchmark on reducing the project cost by 19.01%. However the investment cost is unlikely to decrease to such a high degree due to time over runs related to large hydroelectric projects.

The plant load factor (PLF) affects the IRR of the project activity as increase in the PLF would lead to an increase in exports and as a result the revenues associated with the project activity. The PLF was given a variation of +10% and the results are tabulated below:

PLF

	-10%	Base Case	10%
IRR without CDM	7.67%	9.14%	10.51%

We can conclude that the project IRR goes up to a maximum of 10.51% even with an increase of 10% in the PLF and is still below the benchmark. The project IRR reaches the benchmark if the PLF increases by 23.47% which is a highly unrealistic scenario as the water availability analysis has been calculated based on historical data.

The only revenues associated with the project activity are from the export of electricity. Sensitivity has been done by $\pm 10\%$ on the tariff as below:

	-10%	Base Case	10%
IRR without CDM	7.67%	9.14%	10.51%

The project IRR reaches the benchmark if the tariff increases by 23.47% which is highly unlikely scenario because the tariff in Himachal Pradesh is regulated by the government.

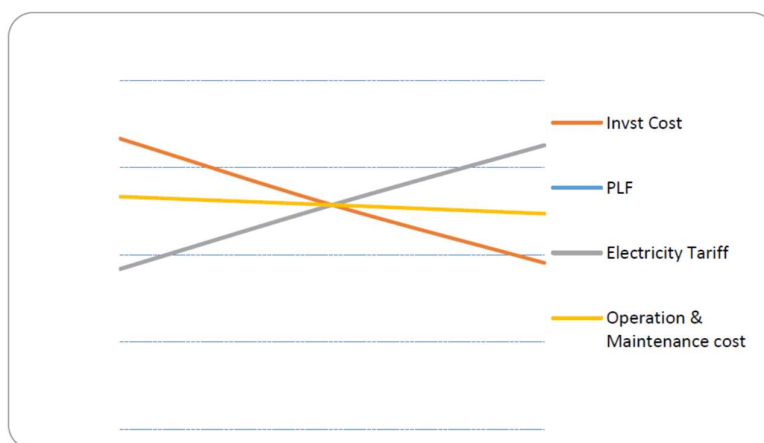
The O & M costs associated with the project have a major impact on the financial returns of the project and thus has been escalated as shown below:

	-10%	Base Case	10%
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IRR without CDM	9.33%	9.14%	8.94%
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The project IRR reaches the benchmark if the O & M cost decreases by 176.1% which is highly unlikely scenario.

The above results have been shown graphically below and it is evident that the project is not financially viable without the CDM revenues. The registration of the project activity as a CDM project and obtaining carbon finance helps mitigate these risks and CDM is thus a deciding factor in proceeding with the project.



Step 3: Barrier analysis

Investment analysis has been undertaken.

Step 4: Common practice analysis

Identify and discuss the existing common practice through the following Sub-steps:

Since the project activity is a measure that involves use of renewable energy in the applicable geographical area of India, as per paragraph 57 of the methodological tool "Demonstration and assessment of additionality" version 07.0.0, we proceed to sub-step 4a.

Sub-step 4a: The proposed CDM project activity(ies) applies measure(s) that are listed in the definitions section above

As per paragraph 58 of the tool, the "Guidelines on common practice" Version 02.0 has been applied as below:

Step 1: Calculate applicable output range as +/-50% of the design output or capacity of the proposed activity

The proposed project activity has a capacity of 36 MW. Hence, the applicable output range for the analysis of +/-50% for the proposed project activity is from 18 MW to 54 MW.

Step 2: Identify similar projects (both CDM and non-CDM) which fulfil all of the following conditions:

- The projects are located in the applicable geographical area;
- The projects apply the same measure as the proposed project activity;
- The projects use the same energy source/fuel and feedstock as the proposed project activity, if a technology switch measure is implemented by the proposed project activity;
- The plants in which the projects are implemented produce goods or services with comparable quality, properties and applications areas (e.g. clinker) as the proposed project plant;
- The capacity or output of the projects is within the applicable capacity or output range calculated in Step 1;
- The projects started commercial operation before the project design document (CDM-PDD) is published for global stakeholder consultation or before the start date of proposed project activity, whichever is earlier for the proposed project activity

The Central Electricity Authority (CEA) publishes the "Baseline Carbon Dioxide Emission from Power Sector Database" regularly that contains data on all power plants operational in the country. As per the applicable version of the Baseline Carbon Dioxide Emission Database (Version 3.0) the power plants that are operational in the country and lie in the capacity range of 18 to 54 MW are as follows:

Name	Date of commissioning	Capacity mw as on 31/03/2007	Sector	System	Type
KOSI	01-Mar-70	20	State	BSEB	Hydro
JALDHAKA I&II	03-Mar-67	35	State	WBSEB	Hydro
RAMMAM	05-Sep-95	50	State	WBSEB	Hydro
LEIMAKHONG DG	01-Apr-85	36	State	MPDC	Thermal
BARAMURA	27-Nov-02	21	State	TRIPURA	Thermal
DLF	01-Jul-97	24.5	Pvt	ASEB	Thermal
MOBILE GAS T-G	22-Mar-81	21	State	ASEB	Thermal
KHANDONG	07-Mar-84	50	Center	NEEPCO	Hydro
LIKIM RO	30-Nov-01	24	State	NAGALAND	Hydro
GHANVI	30-Jul-00	22.5	State	HPSEB	Hydro
CHENANI I&III	01-Sep-71	30.8	State	JKEB	Hydro
MATATILLA	28-Feb-65	30.6	State	UPHPC	Hydro
DHAKRANI	15-Nov-65	33.75	State	USEB	Hydro
DHALIPUR	10-Dec-65	51.00	State	USEB	Hydro
KULHAL	11-Apr-75	30.00	State	USEB	Hydro
PATHRI	25-Jul-55	20.40	State	USEB	Hydro
KHATIMA	30-Apr-55	41.40	State	USEB	Hydro
LVS POWER DG	18-Oct-01	36.8	Pvt	LVS POWER	Thermal
BELLARY DG	20-Sep-00	25.2	Pvt	BELLARY	Thermal
KASARGODE DG	06-Jun-99	21.9	Pvt	RPG	Thermal
KARAIKAL	02-Jul-99	32.5	State	PPCL	Thermal
NELLORE	22-Apr-65	30	State	APGENCO	Thermal
DONKARAYI	04-Oct-83	25	State	APGENCO	Hydro
POCHAMPAD	12-Jul-87	27	State	APGENCO	Hydro
PENNA AHOBELAM	10-Jan-94	20	State	APGENCO	Hydro
BHADRA	28-Nov-62	39.2	State	KPCL	Hydro
GHAT PRABHA	08-Oct-92	32	State	KPCL	Hydro
SIVASAMUNDRUM	12-Dec-22	42	State	VVNL	Hydro

Name	Date of commissioning	Capacity mw as on 31/03/2007	Sector	System	Type
MUNIRABAD	19-Jan-62	28.3	State	VVNL	Hydro
SHIVAPURA	25-Nov-92	18	Pvt	BHORUKA	Hydro
KAKKAD	22-Jul-99	50	State	KSEB	Hydro
SHOLAYAR	09-May-56	54	State	KSEB	Hydro
SENGULAM	30-May-54	48	State	KSEB	Hydro
NARIMANGLAM	27-Jan-61	45	State	KSEB	Hydro
PALLIVASAL	31-May-48	37.5	State	KSEB	Hydro
PORINGALKUTTU	06-Mar-57	32	State	KSEB	Hydro
PANNIAR	19-Dec-63	30	State	KSEB	Hydro
KUTHUNGAL	01-Jun-01	21	Pvt	INDSIL	Hydro
PARSEN_S VALLE	29-Mar-00	30	State	TNEB	Hydro
SARKARPATHY	14-Aug-66	30	State	TNEB	Hydro
PAPANASAM	08-Apr-44	28	State	TNEB	Hydro
MOYAR	10-Apr-52	36	State	TNEB	Hydro
SURULIYAR	27-Aug-78	35	State	TNEB	Hydro
SERVALAR	23-Mar-86	20	State	TNEB	Hydro
BHAWANI KATTALAI BARRAGE	01-Aug-06	30	State	TNEB	Hydro
BANSAGAR (II)	18-Feb-02	30	State	MPGPCL	Hydro
BIRSINGHPUR	01-Nov-91	20	State	MPGPCL	Hydro
RAJGHAT (MP)	29-Sep-99	45	State	MPGPCL	Hydro
ELDARI	20-Mar-68	22.5	State	MAHAGENCO	Hydro
BHANDARDHARA	27-Mar-86	44	State	MAHAGENCO	Hydro
DUDH GANGA	27-Feb-00	24	State	MAHAGENCO	Hydro
MADHIKHEDA	28-Aug-06	40	State	MPGPCL	Hydro
BANSAGAR (IV)	20-Aug-06	20	State	MPGPCL	Hydro

All the 53 plants identified above have a capacity within the applicable range of 18 to 54 MW. Among these power plants, 9 are thermal power plants that use a different energy source/fuel such as diesel, gas and oil.

Step 3: Within the projects identified in Step 2, identify those that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation. Note their number Nall.

All the projects identified in step 2 are neither registered nor submitted for registration nor undergoing validation under CDM. Therefore, the total number of plants identified, Nall is 44.

Step 4: Within similar projects identified in Step 3, identify those that apply technologies that are different to the technology applied in the proposed project activity. Note their number Ndiff.

A new Electricity Act came into effect in the country on 10 June 2003. This was a landmark policy document that provided the first legislative framework to revamp the legal and regulatory framework governing the power sector. It signalled a new openness to reform and a desire to accelerate sector reform in an effort to harmonise the operations of various agencies in the sector. Before this act, the power sector in India could best be described as characterised by policy stasis between 1947 and the mid 1980s. Even the decision to invite IPPs to set up power plants in India was done on ad-hoc and case by case basis and was not part of any comprehensive policy shift.

The new act introduced a uniform regulation determination of tariff for generation and sale of power¹⁶. Thus the projects that were implemented before the introduction of the Electricity Act 2003 had a very different investment climate in terms of legal regulations compared to the projects that were implemented after the introduction of the new act.

Among the list of 44 projects identified under step 3, only Bansagar (IV), Madhikheda and Bhawani Kattalai Barrage were commissioned after the new Electricity Act came into effect. These were however already under construction or in advanced stages of implementation at the time of introduction of the Electricity Act¹⁷.

Therefore, it can be observed that all of these 44 projects started implementation before the new Electricity Act came into effect and as per paragraph 9 (d) of the tool, they were implemented in a different investment climate in terms of the legal regulations and are considered to be using different technologies.

Therefore, the projects that apply technologies different that the technology applied in the proposed project activity, Ndiff is 44.

Calculate factor $F = 1 - N_{diff}/N_{all}$ representing the share of plants using technology similar to the technology used in the proposed project activity in all plants that deliver the same output or capacity as the proposed project activity.

The proposed project activity is a "common practice" within a sector in the applicable geographical area if both the following conditions are fulfilled:

- (a) the factor F is greater than 0.2, and
- (b) $N_{all} - N_{diff}$ is greater than 3.

Therefore, the factor F

$$\begin{aligned}
 &= 1 - (44/44) \\
 &= 1 - 1 \\
 &= 0
 \end{aligned}$$

Since the factor F is less than 0.2 and $N_{all} - N_{diff}$ is less than 3, the proposed project activity is not a common practice within the power sector in the country.

As per para 59 of the tool, we proceed directly to the outcome of Step 4.

Since the outcome of Step 4 is that the proposed project activity is not regarded as "common practice", the proposed project activity is additional.

¹⁶ http://www.realinstitutoelcano.org/wps/portal/rielcano_eng/Content?WCM_GLOBAL_CONTEXT=/elcano/elcano_in/zonas_in/ari6-2010

¹⁷ Bansagar (IV) was a part of the Bansagar Multipurpose Project of 425 MW capacity that started construction in 1978 (<http://bcb.nic.in/images/publication.pdf>) and Bhawani Kattalai Barrage started construction in July 1997 (http://saiindia.gov.in/english/home/Our_Products/Audit_report/Government_Wise/state_audit/recent_reports/Tamil_Nadu/2006/Commercial/com_chap_3.pdf) and Madhikheda started construction in October 2000 # 1.8 (<http://www.mperc.nic.in/031112-Madhikheda-HPS-Final-Tariff-59-12.pdf>)

B.5.1 Prior Consideration

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Since the start date of the project activity is after 2nd August 2008, the project proponents have notified the Designated National Authority (DNA) of India and the UNFCCC within 6 months of the start date (23/07/2011) about their intention to seek CDM status as per 'guidelines on the demonstration and assessment of prior consideration of the CDM, Annex 13, EB 62'. Supporting communication with Host country DNA & UNFCCC has been provided to the DoE for validation.

B.5.2 Ongoing Financial Need

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As the proposed project meets the criteria for deemed additionality, Hence not applicable

B.6. Sustainable Development Goals (SDG) outcomes

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Relevant Target/Indicator for each of the three SDGs

Sustainable Development Goals Targeted	Most relevant SDG Target	SDG Impact
		Indicator (Proposed or SDG Indicator)
SDG -13 :Take urgent action to combat climate change and its impacts	Target 13.2: Integrate climate change measures into national policies, strategies and planning	Impact- Low greenhouse gas Emission
SDG -7 :Ensure access to affordable, reliable, sustainable and modern energy for all	Target 7.2 : By 2030, increase substantially the share of renewable energy in the global energy mix	Impact- Electricity produced and supplied to the grid Indicator 7.2.1- Renewable energy share in the total final energy consumption
SDG -8 : Promote sustained, inclusive and sustainable economic growth, full and	Target 8.5: By 2030, achieve full and productive employment and decent work for all women and men, including for young people and	Impact- Employment generated through project

productive employment and decent work for all	persons with disabilities, and equal pay for work of equal value	Indicator 8.5.1 – Average hourly earnings of female and male employees, by occupation, age and persons with disabilities Impact- Number of trainings Indicator 8.6.1 – Proportion of youth (aged 15-24 years) not in education, employment or training.
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B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact

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Sustainable Development Goals Targeted	Methodological choices/approaches for estimating the SDG outcome
SDG -7 :Ensure access to affordable, reliable, sustainable and modern energy for all	Measurement Method: - Electricity produced and supplied to the grid is monitored through energy meter. Net electricity will be calculated by state electricity board and PP on monthly basis and provided in the share certificate/monthly report or equivalent. The other parameters used for net electricity supplied to grid are mentioned in monitoring plan. QA/QC Process: This parameter is monitored monthly and value of parameter will be cross checked with invoices. The meters will be calibrated on regular frequency.
SDG - 8 : Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Measurement Method: - Training and employment generations monitored through training records, staff register or letter from O&M contractor for training and employment details or HSE/HR records. QA/QC Process: This parameter is based on records, data and no any QA/QC procedure required. The DOE can confirm this parameter with interview with PP or Site incharge or employees for training and employment generation.
SDG -13 :Take urgent action to combat climate change and its impacts	Measurement Method: - The emission reduction parameter is calculated as product of net electricity supplied to grid and grid emission factor. The grid emission factor is ex-ante parameter and determined based on data obtained from "CO₂ Baseline Database for

Indian Power Sector" version 16, published by the Central Electricity Authority, Ministry of Power, Government of India. This is in line with "Tool to calculate the emission factor for an electricity system, version 7". The emission reductions are calculated as per registered PDD and as per methodology requirement.

QA/QC Process: This parameter is calculated, and no any QA/QC procedure required.

B.6.2 Data and parameters fixed ex ante

Relevant SDG Indicator	SDG 13 (Indicators 13.2.1)
Data/parameter	EF_{grid,OM,y}
Unit	tCO ₂ /MWh
Description	Operating Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 16, Mar 2021 ¹⁸
Value(s) applied	0.9568
Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" as per the latest data available for the most three recent years 2017-18, 2018-19 and 2019-20. The data is obtained from "CO ₂ Baseline Database for Indian Power Sector" version 16, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the Calculation of the Baseline Emission
Additional comment	This data will be archived for 2 years beyond the crediting period.

Relevant SDG Indicator	SDG 13 (Indicators 13.2.1)
Data/parameter	EF_{grid,BM,y}
Unit	tCO ₂ /MWh
Description	Build Margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 16, Mar 2021
Value(s) applied	0.8682

¹⁸ https://cea.nic.in/wp-content/uploads/baseline/2021/06/2019_20_CO2_database.zip

Choice of data or Measurement methods and procedures	Calculated as per "Tool to calculate the emission factor for an electricity system, version 07" as per the latest data available for the most recent year 2019-20. The data is obtained from "CO ₂ Baseline Database for Indian Power Sector" version 16, published by the Central Electricity Authority, Ministry of Power, Government of India.
Purpose of data	For the Calculation of the Baseline Emission
Additional comment	This data will be archived for 2 years beyond the crediting period.

Relevant SDG Indicator	SDG 13 (Indicators 13.2.1)
Data/parameter	EF_{grid,CM,y}
Unit	tCO ₂ /MWh
Description	Combined margin CO ₂ emission factor in year y
Source of data	Calculated from CEA database, Version 16, Mar 2021
Value(s) applied	0.9124
Choice of data or Measurement methods and procedures	The combined margin emissions factor is calculated as follows: $EF_{grid,CM,y} = EF_{grid,OM,y} * W_{OM} + EF_{grid,BM,y} * W_{BM}$ Where EF_{grid,BM,y} = Build margin CO₂ emission factor in year y (t CO₂/MWh) EF_{grid,OM,y} = Operating margin CO₂ emission factor in year y (t CO₂/MWh) W_{OM}= Weighting of operating margin emissions factor (50%) W_{BM}= Weighting of build margin emissions factor (50%)
Purpose of data	Calculation of Baseline Emission
Additional comment	This data will be archived for 2 years beyond the crediting period.

B.6.3 Ex ante estimation of SDG Impact

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SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

The project activity generates 156,272 MWh of affordable and clean energy per year.

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project provides employment of at least 5 persons.

Also, project activity improves the quality of employment by giving training to employee.

SDG 13 – Take urgent action to combat climate change and its impacts

The baseline emissions are the product of electrical energy baseline $EG_{\text{facility},y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.

As per para 44 of methodology, being Greenfield project,

$$EG_{PJ,y} = EG_{\text{facility},y}$$

$$BE_y = EG_{\text{facility},y} * EF_{\text{grid},CM,y}$$

Where,

$EG_{\text{facility},y}$ = Total quantity of net electricity delivered to the grid

Project Investors' Name	Capacity	PLF (%)	Net Losses	Generated Power (MWh) p.a.	Baseline Emission Factor (tCO ₂ /MWh)	Baseline emissions (tCO ₂ /year)
IA Hydro Energy Private Limited	36 MW	50.05 %	1%	156,272	0.9124	142,582

$$EF_{\text{grid},CM,y} = \text{Baseline emission factor} \\ = 0.9124 \text{ tCO}_2/\text{MWh}$$

$$BE_y = 156,272 * 0.9124 \\ = 142,582 \text{ tCO}_2$$

As per Section B.4: $PE_y = 0$

Thus

$$ER_y = BE_y - PE_y$$

$$ER_y = BE_y - 0$$

$$ER_y = BE_y$$

Therefore

$$ER_y = BE_y = 142,582 \text{ tCO}_2$$

B.6.4 Summary of ex ante estimates of each SDG Impact

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SDG 7 – Ensure access to affordable, reliable, sustainable and modern energy for all

Net electricity supplied to national grid (MWh)

Year	Baseline estimate	Project estimate	Net benefit
Year 1	0	156,272	156,272
Year 2	0	156,272	156,272
Year 3	0	156,272	156,272
Year 4	0	156,272	156,272
Year 5	0	156,272	156,272
Total		781,360	781,360
Total number of crediting years	5		
Annual average over the crediting period	0	156,272	156,272

Note -The first year start date is from 2 years back from GS registration date and vintage specific dates will be fixed after GS registration date.

Since project activity is renewable electricity generation, the quantity of Affordable and Clean Energy is mentioned under project estimate. In baseline, no any renewable energy generation, hence mentioned as zero.

SDG 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

The project leads to employment opportunities which would not have been possible in the baseline scenario. The project provides employment of at least 5 persons.

SDG 13 – Take urgent action to combat climate change and its impacts

The baseline emissions are the product of electrical energy baseline $EG_{P,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.

Year	Baseline estimate	Project estimate	Net benefit
Year 1	142,582	0	142,582
Year 2	142,582	0	142,582
Year 3	142,582	0	142,582
Year 4	142,582	0	142,582
Year 5	142,582	0	142,582
Total	712,910	0	712,910
Total number of crediting years	5		
Annual average over the crediting period	142,582	0	142,582

Note -The first year start date is from 2 years back from GS registration date and vintage specific dates will be fixed after GS registration date.

B.7. Monitoring plan

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B.7.1 Data and parameters to be monitored

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Relevant SDG Indicator	SDG 7 (Indicators 7.2.1)
Data / Parameter	EG_{facility,y} or EG_{PJ,y}
Unit	MWh/yr
Description	Net Quantity of Electricity supplied to grid
Source of data	Calculated from difference of Gross electricity generation and Auxiliary consumption by the project activity
Value(s) applied	156,272 MWh/yr
Measurement methods and procedures	Net electricity generated will be calculated from the readings of Gross electricity generation and Auxiliary consumption by the project activity.
Monitoring frequency	Continuous measurement and at least monthly recording
QA/QC procedures	This is cross-checked against the import/export meter installed by state electricity board. The generation and auxiliary energy meter will be calibrated annually by an independent accredited third party.
Purpose of data	The Data/Parameter is required to calculate the baseline emission
Additional comment	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

Relevant SDG Indicator	SDG 7 (Indicators 7.2.1)
Data / Parameter	EG_{Gross}
Unit	MWh
Description	Gross electricity generation by the project activity
Source of data	Energy meter readings from plant records
Value(s) applied	157,850
Measurement methods and procedures	The data will be measured/metered continuously and a logbook will be maintained on site to record hourly readings from the energy meter. The readings will be taken by the shift Engineer. This hourly data will be signed off at the end of every 8 hour shift by the engineer in charge of the shift and again at the end of each day by the power plant manager.
Monitoring frequency	Continuous measurement and Monthly recording
QA/QC procedures	The generation energy meter will be calibrated annually by an independent accredited third party.

Purpose of data	The Data/Parameter is required to calculate the baseline emission
Additional comment	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

Relevant SDG Indicator	SDG 7 (Indicators 7.2.1)
Data / Parameter	EG_{y Aux}
Unit	MWh
Description	Auxiliary consumption by the project activity
Source of data	Energy meter readings from Plant records
Value(s) applied	789.25
Measurement methods and procedures	The data will be measured/metered continuously and a logbook will be maintained on site to record on daily basis from the auxiliary meter. The readings will be taken by the shift Engineer. This daily data will be signed off by the engineer in charge of the shift and by the power plant manager.
Monitoring frequency	Continuous measurement and Monthly recording
QA/QC procedures	The auxiliary meter will be calibrated annually by an independent accredited third party.
Purpose of data	The Data/Parameter is required to calculate the baseline emission
Additional comment	The data will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

Relevant SDG Indicator	SDG 13 (Indicators 13.2.1)
Data / Parameter	ER_y
Unit	tCO ₂ e/year
Description	Emission reductions achieved per year
Source of data	As per Estimated ER sheet. During the verification, the results shall be obtained from the Actual ER sheet.
Value(s) applied	142,582 (estimated)
Measurement methods and procedures	The baseline emissions are the product of electrical energy baseline EG _{PJ,y} expressed in MWh of electricity produced by the renewable generating unit multiplied by an emission factor.
Monitoring frequency	As per monitoring period
QA/QC procedures	Not Applicable
Purpose of data	To Monitor the SDG 13 Indicator

Additional comment	Data will be archived in paper & electronic form for two years after the end of crediting period or of the last issuance of GS credits for this project activity, whichever occurs later
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Relevant SDG Indicator	SDG 8 (Indicators 8.5.1)
Data / Parameter	Number of employment generation
Unit	Number
Description	Number of people employed directly due to the project activity
Source of data	Plant records or The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc The staff register/ HR records for income generation of staff/ HR Policies regarding health insurance/social security will be checked for staff income generation and company policy benefits.
Value(s) applied	5
Measurement methods and procedures	The total number of persons working in the plant would be calculated based on the daily log available at site. This parameter also monitor number of men/women employed by the project activity. The project activity ensures that "equal pay for work of equal value" for both men and women and there is no any discrimination against women. This parameter also monitors the income generation of the staff and company policy benefits like health insurance/social security etc. "The employment covers number of men and number of women employed by the project activity. The job is of type temporary/permanent or skilled/unskilled, etc. Also it is ensued that peoples will get equal payment for equal work. The payment will be based on work and no any gender inequality for payment for work of equal value.
Monitoring frequency	Monthly monitoring and annual compilation
QA/QC procedures	The number of persons employed would be mentioned in the plant register, which can be crossed checked with attendance register. The information required for this parameter can be checked by VVB during site visit through interview with people or through relevant supporting documents.
Purpose of data	To Monitor the SDG 8 Indicator
Additional comment	-

Relevant SDG Indicator	SDG 8 (Indicators 8.6.1)
------------------------	--------------------------

Data / Parameter	Quality of employment
Unit	-
Description	Training of Staff
Source of data	Plant records or The training records for all the employees/Letter from O&M contractor for employment generation/ DOE interview with employees, local stakeholders etc
Value(s) applied	1 training per year
Measurement methods and procedures	Together with the technology supplier, the Project organise training for the staff on the technology and the monitoring of the plant operation, and the emergency and safety procedures.
Monitoring frequency	Annual
QA/QC procedures	The training records for all the employees
Purpose of data	To Monitor the SDG 8 Indicator
Additional comment	-

It is to be noted that the registered CDM PDD mentioned parameters like Cap_{PJ} (Installed capacity of the hydro power plant after the implementation of the project Activity) and A_{PJ} (Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full). These parameters are not directly used in emission reduction calculations. These parameters are used to confirm capacity and area of reservoir. Hence these two parameters are not mentioned in above monitoring plan.

B.7.2 Sampling plan

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Not Applicable

B.7.3 Other elements of monitoring plan

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In accordance with the methodology all the data collected during the crediting period will be archived electronically and kept for at least two years after the end of crediting period. 100% of the data will be monitored and the meters owned by project owners will be calibrated annually to ensure low uncertainty in the monitored data.

Monitoring procedures

Monitoring shall consist of metering the gross generation and auxiliary consumption of electricity in the project activity. There will be three 8 hour shifts and the readings of gross generation from meters will be taken on an hourly basis by the shift Engineer and recorded in logbooks. For auxiliary consumption, the daily data will be recorded in log books. This hourly data will be signed off at the end of every shift by the engineer in charge of the shift and again at the end of each day by the power plant manager. The power plant manager will analyze the data every month and report to the head office.

Period of archiving

The data will be archived electronically every month and will be maintained.

Calibration of equipments

The calibration of energy meters will be done once in a year by an independent accredited third party. The calibration certificates will be made available at the time of verification.

Internal Audit

An internal audit will be carried out every year at the power plant to ensure that the parameters are being monitored in accordance with the PDD. Periodic training of employees would ensure that there are no discrepancies in transferring of the data from logbooks to soft copy. The audit reports will be provided to the DOE undertaking periodic verification.

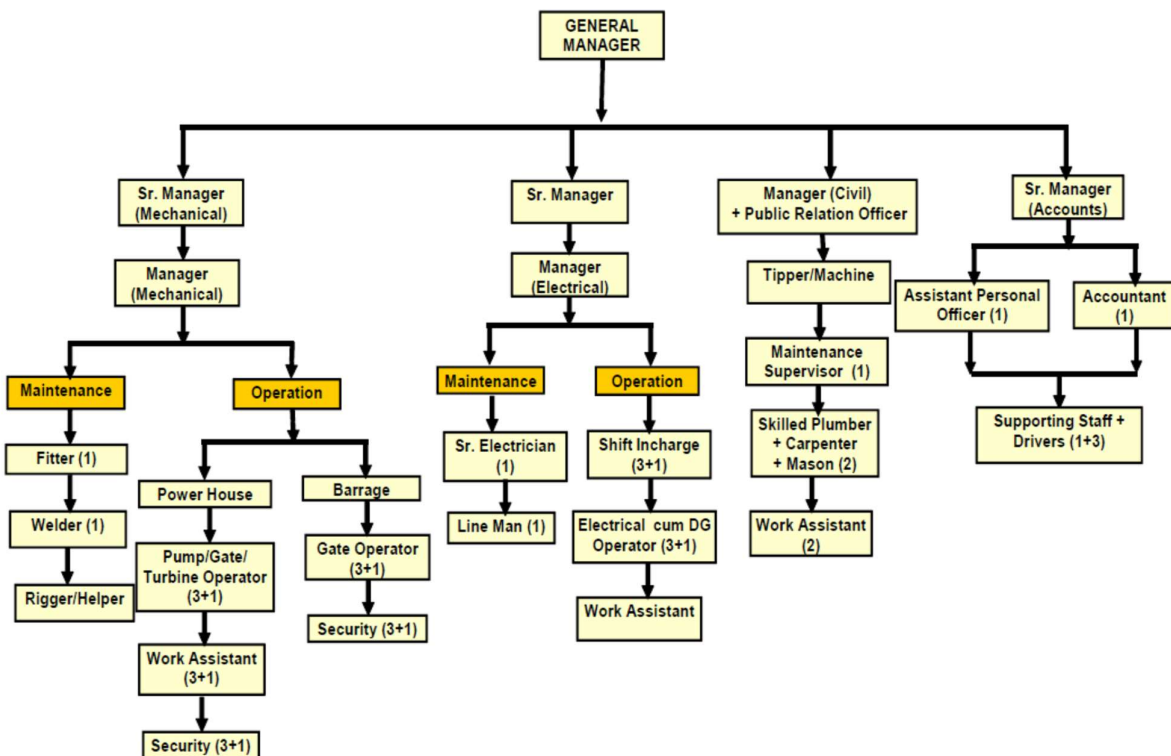
Training requirements

The suppliers of the equipments will train the staff in- charge during erection, to operate and maintain the equipments efficiently. Apart from this, the equipment supplier will provide complete manuals and documentation providing details for the maintenance schedule and the required activities associated with it.

Emergency Preparedness

The project will employ highly skilled workers and periodic training of employees would ensure that they are well equipped to handle emergency situations.

The following organization structure will be used to monitor the project activity as per procedures



The monitored data will be reported on a monthly basis for the calculation and estimation of emission reductions. This data will be checked against initial estimates and a summary report will be provided quarterly. . If the project is not performing as expected or if there are any negative impacts on the volume of emission reductions obtained, on the basis of the monthly data being monitored, a report will be prepared outlining where the project is deviating in its generation of emission reductions and the immediate measures which need to be undertaken to maintain the expected generation of emission reductions from the operation of this project. Should there be significant changes to the set-up or operation of the plant, these will be notified and amendments to the PDD will be requested through a DOE.

For each verification period I. A. Energy will prepare a monitoring report that will be submitted to a DOE for verification. I. A. Energy ensures that the procedures and monitoring plan are being followed. All data will be kept for a minimum of 2 years following issuance of certified emission reductions or the end of the crediting period, whichever is later, and the storage of this data will be the responsibility of the project developers.

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

>>

C.1.1 Start date of project

>>

23/07/2011 (Date of Purchase order for civil work)

C.1.2 Expected operational lifetime of project

>>

40 Years 00 Months

C.2. Crediting period of project

C.2.1 Start date of crediting period

>>

26/07/2017 (this is commissioning date of full 36 MW capacity and is within two years back from expected GS registration)¹⁹

The project is registered with UNFCCC with reference no CDM 10153. The crediting period for the project activity under UNFCCC is 7 years and renewable twice. The 1st crediting period is from 26/07/2017 to 25/07/2024 followed by 2nd from 26/07/2024 to 25/07/31 and 3rd from 26/07/2031 to 25/07/2038. The 1st crediting period under GS4GG will start from 2 years retroactive from the date of registration with GS till 25/07/2024.

C.2.2 Total length of crediting period

>>

7 Years 00 Months (First crediting period).

7 years Renewable cycle is adopted for project activity which can be renewed twice.

¹⁹ A deviation was sought for prior approval to submit the documents for design review and approved by GS. Deviation reference no-COVID_DEV 201

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in [Appendix 1](#). There is no continued monitoring required for the safeguarding practices.

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	As per Gold Standard Gender Policy, p. 10 "Foundational gender-sensitive requirement - This strengthens Gold Standard's 'do no harm' approach and addresses safeguards to prevent or mitigate adverse impacts on women or men and girls and boys. Such action is mandatory for all projects seeking Gold Standard certification and includes compliance with the gender 'do no harm' safeguards, gender gap analysis and gender sensitive stakeholder consultations." The project being a renewable energy project is not gender sensitive project. The project does not adversely impact women or men.
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	India is party to "Convention on the Elimination of All Forms of Discrimination against Women" and the project is aligned its labour policies which does not discriminate on gender.
Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	The Project has completed the following gender assessment questions below: 1. Is there a possibility that the Project might reduce or put at risk women's access to or control of resources, entitlements and benefits? - No, the Project being a Hydro Power project does not reduce access to or control of resources for women. 2. Is there a possibility that the Project can adversely affect men and women in marginalised or vulnerable communities (e.g., potential increased burden on women or social isolation of men)? - No, the Project beneficiaries in terms of employment and social upliftment of the area are common for both the gender. Further the project has carried out

various CSR activities leading to welfare of community at large.

3. Is there a possibility that the Project might not take into account gender roles and the abilities of women or men to participate in the decisions/designs of the project's activities (such as lack of time, child care duties, low literacy or educational levels, or societal discrimination)?

- No, the CSR activities carried out by the project proponent/O&M contractor are discussed with the community consisting both the genders.

4. Does the Project take into account gender roles and the abilities of women or men to benefit from the Project's activities (e.g., Does the project criteria ensure that it includes minority groups or landless peoples)?

- Yes the project takes into account gender roles and abilities of women/men. Job profile is allocated based on the type of work to be carried out.

5. Does the Project design contribute to an increase in women's workload that adds to their care responsibilities or that prevents them from engaging in other activities?

- No, on the contrary the project leads to increased availability of electricity in the regional grid thereby uplifting the living standards.

6. Would the Project potentially reproduce or further deepen discrimination against women based on gender, for instance, regarding their full participation in design and implementation or access to opportunities and benefits?

- No, since the project is a renewable electricity generation project, thus it will not have discriminated against women.

7. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and priorities of women and men in accessing and managing environmental goods and services?

- No, in fact, the project leads to improved electricity in the regional grid thereby leading to less usage of fuel for lighting.

	8. Is there a likelihood that the proposed Project would expose women and girls to further risks or hazards? - No, in fact, due to improved electricity availability the usage of fuel for lighting would be reduced as well as indoor air quality would be improved.
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	Expert was not required to assist with Gender issues at the stakeholder consultation. As per para 4.4 of the Gender Policy, The project is currently a CDM project applying for retroactive GS CER registration. The LSC conducted as part of the CDM project including relevant stakeholders. Since the project is applying retroactively for GS registration, a Stakeholder Feedback round would be carried out.

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

The below is a summary of the 2 step GS4GG Consultation for monitoring purposes. Please refer to the separate Stakeholder Consultation Report for a complete report on the initial consultation and stakeholder feedback round.

E.1 Summary of stakeholder mitigation measures

>>

The local population is considered the major stakeholder for the proposed project activity. A notice was published on 14/01/2009 for seeking EIA clearance and carbon credits in three local newspapers – Dainik Jagran, The Tribune and Dainik Tribune followed by stakeholder meeting on 17/01/2009.

The Government of Himachal Pradesh state had made it mandatory for all hydroelectric projects proposed in the region to undertake a public consultation before the start of the implementation of work. The project data must be made publicly available in national and local dailies and invite comments for a period of 60 days. Based on the comments received during the public consultation period and the feedback from the project participants on how the public comments are addressed, the Government of Himachal Pradesh decides whether to sanction the project. A stakeholder consultation meeting was held on 27/10/2010 for EIA clearance and carbon credits, which discussed the company's intention to apply for carbon credits.

Another stakeholder meeting was held at barrage site of project area of Chanju on 18/05/2013. The meeting opened with a welcome note from Mr. S.B Lalit (Vice President) I.A Energy who explained the purpose of the meeting. He further provided brief information on CDM, its development and benefits.

He notified the stakeholders on the various social, economic and technological well being from the project. He requested the stakeholders present to provide their honest suggestions and comments on the upcoming project in the region.

Another major stakeholder is the Himachal Pradesh State Electricity Board (HPSEB) and the project owners have received the Techno Economic Clearance (TEC) for the project activity. The Office of Principal Secretary (Power) to Government of Himachal Pradesh also made public announcement in local dailies for public comments on the project before according techno economic clearance to the project.

The proposed project activity has obtained no objection certificates from the gram panchayat – Baghaigarh, Tikrigarh and Leiusin and the Himachal Pradesh Fisheries Department. The project has also taken clearance from the Irrigation and Public Health Department, Government of Himachal Pradesh for utilizing the water resources in the Himachal Pradesh state.

Summary of comments received

The stakeholder meeting for EIA and CDM was conducted at "VIII Bhaghaigarh, Tehsil Churah, Dist Chamba on 17 January 2009. The meeting was attended by the local people, the body of gram panchayat and the representative of I. A. ENERGY. Concerns

and responses were recorded during the meeting at the project site. No comments were received in response to the newspaper notices.

Common queries and responses are listed below: (meeting 1 dated 17/01/2009)

S.No.	Queries Raised	IACITL Reply
	To whom the employment will be given in construction of project?	The preference will be given to the local villagers only, so that maximum people can get employment opportunities due to this project. Depending upon the capability & education qualification of the people, employment will be given in the form of Skilled & Unskilled.
	Will this project spoil the soil of surrounding area?	Unlike the coal based power plant project, will affect the surrounding environment but in our project since water will use as renewable source for power generation which is clean and environment friendly hence there is no chances of spoil of surrounding area.
	Local transport vehicles will use for construction of project	Management has decided to use local transport vehicles so as to get indirect work from company rather than outside agency during the construction of project.
	How this project will help in development of local area?	As per CSR activity we will incur expenditure @ 2% of the net profit in development of local area in the form of pakka road, borewell, samuhik bhawan, health medical checkup camps, vocational training, skill development etc.

Another stakeholder meeting for EIA and CDM was conducted on 27/10/2010 at "Rajkiya Prathamik Vidyalaya" and was attended by the local people, the body of gram panchayat and the representative of I. A. ENERGY. Concerns and responses were recorded during the meeting at the project site.

Common queries and responses are listed below: (meeting 2 dated 27/10/2010)

S.No.	Question	Answer
1	Whether the company will provide employment opportunity especially to the project affected area?	The employment preference will be given to the project affected families followed by the project affected Panchayats & local area people.
2	Whether the company will give the opportunity to the local people in construction works to the project affected area?	The company will provide small works/contracts depending on the skill level to the local people.
3	Whether the development activities to be undertaken in the project affected villages by the project proponent during the construction and operation stage?	The representative has informed that 1.5% of the project cost has already been earmarked in EIA/EMP for the development of villages. In addition to this the company will also undertake development works under its Corporate Social Responsibility Programme. The representative of the project activity also informed that 1% of the revenue generated will be deposited in the local area development fund for the development of the affected villages.

S.No.	Question	Answer
4	What steps to be taken for the upliftment of the education and health?	The representative of the project activity informed that they have kept the provision for the strengthening of existing educational institutes in the project area and providing the ambulance & free medicines to the local people.

Another stakeholder meeting for EIA and CDM was conducted on 18/05/2013. The meeting was attended by the local people, the body of gram panchayat and the representative of I. A. ENERGY. Concerns and responses were recorded during the meeting at the project site.

Common queries and responses are listed below: (meeting 2 dated 18/05/2013)

1) We have heard that apart from river water, power can be generated from other sources of nature – such as wind, sun, etc. What is the difference between all these powers? Why does the government not invest equally in renewable energy projects to source all the power that it needs?

PP Response: The government is investing in all type of renewable energy projects like wind power, solar power and hydel power. The Bhakra Nangal Dam over Satluj river, the Pong Dam in the state of Himachal are all prime examples of government investment to harness power from renewable energy in the form of hydro power. The government has also made a long term plan to use renewable sources of energy for generating power, wherein the Prime Minister himself is involved (National Action Plan on Climate Change). This has a lot of focus on solar energy (energy generated from the Sun).

But these technologies also have a few areas of concern. These have to be harnessed only from the source where these gifts of nature are available. This brings up certain logistical and regulatory problems as well. The amount of investment required for these technologies too is very high. And the per unit generation cost in long run is cheaper for hydel projects.

Also, as against the power generated from the fossil fuels, the reliability in these renewable energy technologies is a little uncertain as this depends entirely on the forces of nature. This can be in the case of hydro power where the input depends upon the amount of rainfall in the monsoons – most of you being farmers understand this much better than others. There is a similar case while generating energy by wind and solar.

Despite all this, the government has recognized the problem of 'Global Warming' and the consequences in the change in the climate. The government has therefore very strongly focused on renewable energy technologies by bringing out its National Action Plan on Climate Change which will strive to limit or reduce the effect of Global Warming. Though power may not be sourced entirely from renewable energy, but as a result of these all – round initiatives and the heightened awareness, in the future we expect more and more focus and investment in renewable energy technologies.

2) How much more employment opportunities or improve economic development of area will be created?

PP Response: As you know that project construction activity has created enough employment opportunity at the village level. Lot of villagers have got employment – skilled and non skilled

Apart from this, petty contracts for civil work especially protection work of road etc. have been given to local villagers, which has created indirect employment.

The local people of the area are also benefitted indirectly by deploying their passenger vehicles and transport vehicles and machinery on hire with company and the contractors. Others are benefitted by rental income of their accommodation given on rent to the company and contractors. The local shopkeepers are benefitted due to additional customers created due to project in the form of labour from outside and other staff including engineers. Hence these kind of projects not only help in generating employment for local but also result in skill development for the locals which can help them making earnings in the future.

3) What are the impacts of the project on environmental and aesthetic value of the surrounding area?

PP Response: Water is a clean energy source and does not emit greenhouse gases or carbon dioxide. Since there is no pollution, the surrounding land, water, and air is preserved. Yes, during the construction period as you all know some negative impacts are there which are being mitigated as far as possible by applying suitable measures. But these negative impacts are very meager against the long term benefits of the project. You have already noticed these benefits in the case of Baira Suil (196 MW) Project in your near vicinity commissioned in nineteen eighties and where you can see that area has been reclaimed very effectively and area converted more green due to plantation carried out in the area by project authorities.

All the stakeholders were happy in knowing that the proposed hydro project activity in their locality will be contributing to a global cause and they commended the I. A. ENERGY for their initiatives in the areas of climate change and sustainable development. In particular, the stakeholders appreciated the project promoter for the environment friendly hydro power generation project.

Report on consideration of comments received

No comments were received

Stakeholder feedback Round:

The SFR have been planned for 60 days after listing project with GS. The email was sent on 02/02/2019 to relevant stakeholders like NGOs, DNA officials, Gold Standard officials along with project documents

The process for the SFR is as follows;

- E mail and Invitations sent to relevant stakeholders
- The non technical summary of project activity along with Registered PDD, web link of UNFCCC web page for the same registered project in CDM, draft GS4GG PDD submission to relevant stakeholders, GS Public view section web link.
- Grievance Mechanism Feedback/Questions from Stakeholders
- Answers for questions received from stakeholders during online SFR process.

Identification of Stakeholders:

The Stakeholder feedback round was conducted to consider and receive feedback from the possible stakeholders to the project, i.e. NGOs. Apart from these, the stakeholders as identified by Gold standard Board, i.e. Gold standard partnered NGOs in India and DNA of India (MoEF).

Invitations to Stakeholders:

The Stakeholder feedback round was done by online method. Email invitations were sent to GS partnered NGO's and MoEF. The relevant documents of project activity like GS passport, project Technical summary were made available during Stakeholder feedback round.

As per GS toolkit, for SFR process physical meeting is not mandatory. Thus online e mail was sent to NGOs, Govt officials, GS personnel etc.

For local stakeholders, public notice has been put at project site. Also SFR process are mainly to cover the issues raised during local stakeholder consultation and there were no any negative comments raised during initial physical local stakeholder consultation.

Thus public notice put at project site village and requested the feedback for this project activity as a part of SFR was sufficient and meets the requirement as per GS4GG. This public notice covers all local stakeholders for feedback during SFR process. The public notice has mentioned different feedback methods like the grievance register, telephone access, internet access so that local stakeholders can give their feedback for the project activity.

The national/international NGO Supporters were identified for stakeholder feedback round and e mails were sent for their feedback. The C and D category stakeholders are invited through online SFR. For category A and B, the public notice has been put at project site.

Question/Comments session:

No major comments were received from the stakeholders.

E.2 Final continuous input / grievance mechanism

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.
	Grievance Register to be maintained at office of PP and O&M site office at Project location.
Continuous Input / Grievance Expression Process Book (mandatory)	The project activity site office is appropriate publicly accessible location at which local stakeholders can provide their feedback on the project. This location is also conducive to continuous and regular checks for stakeholder comments.

	Also Grievance Register has been kept at PP office so that any stakeholder can give their comments to PP.
GS Contact (mandatory)	help@goldstandard.org
	Mr. Manish Dabkara, representative of Project Participant is responsible and his mobile number +91 9907534900 shall be available for any stakeholder to comment.
Telephone access	For those who are unable to travel to site or are not literate, they may contact the Project Implementer via telephone. Persons dialing this telephone number will have access to a Project representative who speaks both English and the national language, Hindi.
Internet/email access	PP representative: manish@enkingint.org commercial.bjr@goelgroup.co.in Gold Standard: info@goldstandard.org
	The email id of the project Implementer has been provided for continuous input / grievance for the convenience of stakeholders with internet access.
Nominated Independent Mediator (optional)	No Independent mediator is assigned. However, Mr. Manish Dabkara, representative of Project Participant has been assigned as the point of contact for all the local issues.

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

>> Fill this section

Complete the Assessment below and copy all Mitigation Measures for each Principle into [SECTION D](#) above. Please refer to the instructions in the [Guide to Completing](#) this Form.

Assessment Questions/ Requirements	Justification of Relevance (Yes/potentially/no)	How Project will achieve Requirements through design, management or risk mitigation.	Mitigation Measures added to the Monitoring Plan (if required)
Principle 1. Human Rights			
1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights	No	India ratified "International Convention on the Elimination of all Form of Racial Discrimination" on 03/12/1968 ²⁰ ; "International Covenant on Civil and Political Rights" and "International Covenant on Economic, Social and Cultural Rights" on 24/09/1982 ²¹ ;	Not Applicable

²⁰ https://tbinternet.ohchr.org/_layouts/15/TreatyBodyExternal/Treaty.aspx?CountryID=79&Lang=EN

²¹ https://tbinternet.ohchr.org/_layouts/15/TreatyBodyExternal/Treaty.aspx?CountryID=79&Lang=EN

2. The Project shall not discriminate with regards to participation and inclusion		"Convention on the Elimination of all Forms of Discrimination against Women" on 09/07/1993²². Therefore, the project developer and the project do respect nationally and internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind Also project will not discriminate with regards to participation and inclusion.	
Principle 2. Gender Equality			
1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women a. Sexual harassment and/or any forms of violence	No	1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women for a. Sexual harassment and/or any forms of violence	Not Applicable

²² https://tbinternet.ohchr.org/_layouts/15/TreatyBodyExternal/Treaty.aspx?CountryID=79&Lang=EN

against women – address the multiple risks of gender-based violence, including sexual exploitation or human trafficking. b. Slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls. c. Restriction of women’s rights or access to resources (natural or economic). d. Recognise women’s ownership rights regardless of marital status – adopt project measures where possible to support to women’s access to inherit and own land, homes, and other assets or natural resources. 2. Projects shall apply the principles of nondiscrimination, equal treatment, and equal pay for equal work		against women – address the multiple risks of gender-based violence, including sexual exploitation or human trafficking. b. Slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls. c. Restriction of women’s rights or access to resources (natural or economic). d. Recognise women’s ownership rights regardless of marital status – adopt project measures where possible to support to women’s access to inherit and own land, homes, and other assets or natural resources. 2. The project has applied the principles of non-discrimination and equal treatment, pay & work as follows:	
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a. Where appropriate for the implementation of a Project, paid, volunteer work or community contributions will be organised to provide the conditions for equitable participation of men and women in the identified tasks/activities. b. Introduce conditions that ensure the participation of women or men in Project activities and benefits based on pregnancy, maternity/paternity leave, or marital status. c. Ensure that these conditions do not limit the access of women or men, as the case may be, to Project participation and benefits. 3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks (where required) Summary of opinions and		a. Yes, the Project has equal opportunity for women and men to contribute both in volunteer and working positions. b. The project activity ensures the participation of women or men in Project activities and they are getting benefits based on pregnancy, maternity / paternity leave, or marital status c. These conditions does not limit the access of women or men, as the case may be, to Project participation and benefits. 3. The project activity follows country's national gender strategy or equivalent national commitment to aid in assessing gender risks.	
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recommendations of an Expert Stakeholder(s)			
Principle 3. Community Health, Safety and Working Conditions			
1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community	No	The project is renewable energy technology (Hydro Power) and does not have exposure to increased health risks and shall not adversely affect the health of the workers and the community. The project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments” - PP ensures safe access and planned prevention to avoid any kind of accident. The HSE (Health and Safety Executive) states that best practice when installing and operation of Hydro Power project requires trained, dedicated working at height maintenance teams to access risks and select appropriate equipment before any work is carried out. All the safety and hygiene measures are being ensured in	Not Applicable

		order maintain a safe and healthy environment for the workers at site. In case of any emergency, the site incharge will ensure to take adequate action and preventive measures to avoid any miss happening. Necessary health and safety measures will be taken during construction and operation phase, relevant staff will be trained to be able to work with safety. The project is in compliance with all relevant local and national laws also follows the National Policy on Safety, Health and Environment²³ at work published by Ministry of Labour and Employment Government of India.	
Principle 4.1 Sites of Cultural and Historical Heritage			

²³ <https://labour.gov.in/sites/default/files/SafetyHealthandEnvironmentatWorkPlace.pdf>

Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture?	No	No cultural heritage is observed on the project site, thus no harm observed. Compliance with India's commitment to International Covenant on Economic, Social and Cultural Rights 10.04.79 will ensure no damage to critical cultural heritage. As per the list of cultural heritage sites in India ²⁴ by UNESCO, it is clear that the project site is not a cultural heritage site	Not Applicable
>>			
Principle 4.2 Forced Eviction and Displacement			
Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	No	The project has received the necessary approvals from the local authorities and does not lead to any resettlement. India (the Ministry of Rural development have the "The National Rehabilitation and Resettlement Policy, 2007" ²⁵	Not Applicable
>>			

²⁴ <http://whc.unesco.org/en/statesparties/in>

²⁵ <https://dolr.gov.in/sites/default/files/National%20Rehabilitation%20%26%20Resettlement%20Policy%2C%202007.pdf>

Principle 4.3 Land Tenure and Other Rights			
Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership?	No	No Expropriation has been conducted on any private land involved in project activity. Land has been utilised by PP directly from the owner of the land through direct negotiation of commercial terms. There has not been involvement of any government agency in the acquiring the land. The land is acquired on mutual consent between private land owner and PP, thus there are no any issues of dissatisfaction of private land owner. The Project Developer hold uncontested land title for the entire Project Boundary to complete Project Design Certification. The land rights are with project developers.	Not Applicable
>>			
Principle 4.4 - Indigenous people			
Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	No	The project is located at site where there are no any peoples residing. The project is located at barren land.	Not Applicable
>>			

Principle 5. Corruption			
1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	No	The project is renewable energy technology and does not contribute to or reinforce corruption of any kind. Indulgence in corruption is an illegal activity in the host country and the local labor compliance takes into account of the same. The project abides by the United Nations Convention Against Corruption. India ratification²⁶ is made on 09.05.11	Not Applicable
Principle 6.1 Labour Rights			
1. The Project Developer shall ensure that all employment is in compliance with national labour occupational	No	1. All the employment in the project activity is in compliance with national labour and health and safety ²⁷ .	Not Applicable

²⁶ <http://www.unodc.org/unodc/en/treaties/CAC/signatories.html>

²⁷ <https://labour.gov.in/sites/default/files/SafetyHealthandEnvironmentatWorkPlace.pdf>

health and safety laws and with the principles and standards embodied in the ILO fundamental conventions. Where these are contradictory and a breach of one or other cannot be avoided, then guidance shall be sought from Gold Standard. It requires that; 2. Workers shall be able to establish and join labour organisations 3. Working agreements with all individual workers shall be documented and implemented and include:		Forced labour is an illegal activity in the host country and the local labour compliance takes into account of the same. Further, India is a party to ILO and forced labour is illegal in India. The India have laws in place prohibiting forced and compulsory labor²⁸ 2. The project respects fundamental right of employee. There is law in India since 1926 by The Trade Unions Act, 1926²⁹ which protects rights of industrial trade unions and their members. Hence, Workers are able to establish and join labour organisations	
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²⁸ [Privacy error \(labour.nic.in\)](#)

²⁹ <http://ncw.nic.in/acts/TheTradeUnionsAct1926.pdf>

a) Working hours (must not exceed 48 hours per week on a regular basis), AND b) Duties and tasks, AND c) Remuneration (must include provision for payment of overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. 4. No child labour is allowed (Exceptions for children working on their families' property		3. The working agreements are in place with all individual workers are documented. The project prefers the local employment and culture is maintained at project site. 4. The country have strict prohibition for child labour³⁰. Thus project does	
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³⁰ http://www.indianchild.com/child_labour_law_in_india.htm

requires an <u>Expert Stakeholder</u> opinion) Child labour, as defined by the ILO Minimum Age Convention 11 is not allowed. The Project Developer shall use adequate and verifiable mechanisms for age verification in recruitment procedures. Exceptions are children for work on their families' property as long as: (a) Their compulsory schooling (minimum of 6 schooling years) is not hindered, AND (b) The tasks they perform do not harm their physical and mental development, AND (c) The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the project design. 5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and		not involve child labour during construction and operation of project activity. 5. The project follows the health, safety and	
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reporting of accidents and incidents, and emergency preparedness and response measures		environment guidelines at project site. The project ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures.	
Principle 6.2 Negative Economic Consequences			
1. Does the project cause negative economic consequences during and after project implementation?	No	No potential risks to the local economy. The financial sustainability of the Projects implemented, also including those that will occur beyond the Project Certification period. The financial sustainability is demonstrated in registered PDD and these calculations are for entire lifetime of project activity. The project does not involve any negative impacts and no any potential risk to local economy.	Not Applicable
The Project Developer shall demonstrate the financial sustainability of the Projects implemented, also including those that will occur beyond the Project Certification period. The Projects shall consider economic impacts and demonstrate a consideration of potential risks to the local economy and how these have been taken into account in project design,			

implementation, operation and after the Project. Particular focus shall be given to vulnerable and marginalised social groups in targeted communities and that benefits are socially-inclusive and sustainable.			
Principle 7.1 Emissions			
Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No	The project is renewable energy technology and does not lead any increase in greenhouse gas emissions over the Baseline Scenario.	Not Applicable
Principle 7.2 Energy Supply			
Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No	The project activity supplies energy to national grid and project activity displaces equivalent quantity of electricity which would have been generated by fossil fuel dominated grid connected power plants.	Not Applicable
Principle 8.1 Impact on Natural Water Patterns/Flows			
Will the Project affect the natural or pre-existing pattern of watercourses, ground-water and/or the watershed(s) such	No	The project is renewable energy technology and does not affect the natural or pre-existing pattern of water	Not Applicable

as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?		courses, ground-water and/or the watershed(s).	
Principle 8.2 Erosion and/or Water Body Instability			
Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion?	No	The project is renewable energy technology and does not affect Erosion and/or water body stability.	Not Applicable
Principle 9.1 Landscape Modification and Soil			
Does the Project involve the use of land and soil for production of crops or other products?	No	The project proponent has implemented Environment Health Safety and Social guideline which takes into account the same. The project activity involves barren land and does not involve use of land and soil for production of crops or other products.	Not Applicable
Principle 9.2 Vulnerability to Natural Disaster			
Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence,	No	The project is renewable energy technology. Thus this section is Not Applicable.	Not Applicable

landslides, erosion, flooding, drought or other extreme climatic conditions?			
Principle 9.3 Genetic Resources			
Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	No	The project is renewable energy technology. Thus this section is Not Applicable	Not Applicable
Principle 9.4 Release of pollutants			
Could the Project potentially result in the release of pollutants to the environment?	No	The project has received environmental clearance from the State Pollution control Board. Further the EHSS guidelines takes into account the same. The project does not lead to release of any hazardous substances that pose threat to the environment. Rather it aims at reducing the air pollution that is prevalent due to use of fossil fuel power	Not Applicable

		plants. The project promotes environmental protection through the use of cleaner technology. The project abides by the stipulations of the Indian Environment Protection Act 1986 ³¹ .	
Principle 9.5 Hazardous and Non-hazardous Waste			
Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	No	The project is renewable energy technology. The project does not involve generation of Hazardous and Non-hazardous Waste. Standard procedure is followed at site during operation and maintenance.	Not Applicable
Principle 9.6 Pesticides & Fertilisers			
Will the Project involve the application of pesticides and/or fertilisers?	No	The project is renewable energy technology. Thus this principle is Not Applicable.	Not Applicable
Principle 9.7 Harvesting of Forests			

³¹ <http://envfor.nic.in/legis/env/env1.html>

Will the Project involve the harvesting of forests?	No	The project is renewable energy technology. Thus this principle is Not Applicable.	Not Applicable
Principle 9.8 Food			
Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	No	The project is renewable energy technology. Thus this principle is Not Applicable	Not Applicable
Principle 9.9 Animal husbandry			
Will the Project involve animal husbandry?	No	The Project does not involve animal husbandry. Thus Not Applicable	Not Applicable
Principle 9.10 High Conservation Value Areas and Critical Habitats			
Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	No	The Project does not affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified ³² .	Not Applicable

³² <http://natureconservation.in/state-wise-list-of-conservation-reserves-of-india-updated/>

Principle 9.11 Endangered Species			
Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? AND/OR Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	No	1. There are no endangered species identified as potentially being present within the Project boundary. 2. The Project does not impact other areas where endangered species may be present through transboundary affects.	Not Applicable

APPENDIX 2- CONTACT INFORMATION OF PROJECT PARTICIPANTS

>> Fill this section

Organization name	IA Hydro Energy Private Limited
Registration number with relevant authority	-
Street/P.O. Box	C/o Shri Bajrang Power & Ispat Ltd,
Building	Village Borjhara, Urla-Guma Road,
City	Raipur,
State/Region	Chhattisgarh,
Postcode	493221
Country	India
Telephone	+91-771 4288019
E-mail	commercial.bjr@goelgroup.co.in
Website	-
Contact person	
Title	-
Salutation	Mr
Last name	Goyal
Middle name	Kumar
First name	Shravan
Department	-
Mobile	-
Direct tel.	-
Personal e-mail	skgoyal@goelgroup.co.in

APPENDIX 3- LUF ADDITIONAL INFORMATION

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Not Applicable as this project is generating electricity by using Hydro energy.

APPENDIX 4-SUMMARY OF APPROVED DESIGN CHANGES

Not Applicable

Revision History

Version	Date	Remarks
1.0	10 July 2017	Initial adoption