



VALIDATION REPORT SATLUJ JAL VIDYUT NIGAM LIMITED

VALIDATION OF THE HYDRO ELECTRIC POWER PROJECT BY SJVNL IN HIMACHAL PRADESH

REPORT No. INDIA-val/230.49/2010
REVISION No. 2.0

BUREAU VERITAS CERTIFICATION

Great Guildford House, 30 Great Guildford Street
SE1 0ES - London – United Kingdom



Report No: INDIA-val/230.49/2010 rev. 2.0

VALIDATION REPORT

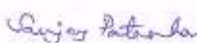
Date of first issue: 16/08/2010	Organizational unit: Bureau Veritas Certification Holding SAS
Client: International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2	Client ref.: Ms. Joelle Chassard

Summary:
Bureau Veritas Certification has made the validation of the Hydro electric power project by SJVNL in Himachal Pradesh project of Satluj Jal Vidyut Nigam Limited located in Village Bael, Rampur, District Shimla & Kullu, Himachal Pradesh, India on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology ACM 0002 version 12.1.0 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Report No.: INDIA-val/230.49/2010	Subject Group: CDM
Project title: Hydro electric power project by SJVNL in Himachal Pradesh	
Work carried out by: Mr H.B.Muralidhar – Team Leader Mr Naresh Badhwar – Team Member Sushil Budhia Associates – Financial expert	
Internal Technical Review carried out by:  Sanjay Patankar – Internal Technical Reviewer	
Date of this revision: 01/03/2011	Rev. No.: 2.0
Number of pages: 171	

Indexing terms

Work approved by:



Mr. Flavio Gomes, Global Product Manager

☒ No distribution without permission from the Client or responsible organizational unit

☐ Limited distribution

☐ Unrestricted distribution



Abbreviations

CAR	Corrective Action Request
CEA	Central Electricity Authority
CCEA	Cabinet Committee on Economic Affairs
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
DOE	Designated Operational Entity
GHG	Green House Gas(es)
I	Interview
IETA	International Emissions Trading Association
MoP	Ministry of Power
MoV	Means of Verification
NGO	Non Government Organization
NJHPP	Naptha Jhakri Hydro Power Project
PCF	Prototype Carbon Fund
PDD	Project Design Document
PIB	Public Investment Board
RHEP	Rampur Hydroelectric Project
UNFCCC	United Nations Framework Convention for Climate Change
VVM	Validation and Verification Manual
SJVNL	Satluj Jal Vidyut Nigam Ltd



Table of Contents	Page
1 INTRODUCTION	5
1.1 Objective	5
1.2 Scope	5
1.3 Validation team	5
2 METHODOLOGY	6
2.1 Review of Documents	6
2.2 Follow-up Interviews	7
2.3 Resolution of Clarification and Corrective Action Requests	8
2.4 Internal Technical Review	8
3 VALIDATION CONCLUSIONS	9
3.1 Approval (49-50)	10
3.2 Participation (54)	11
3.3 Project design document (57)	12
3.4 Changes in the Project Activity	13
3.5 Project description (64)	13
3.6 Baseline and monitoring methodology	16
3.6.1 General requirement (76-77)	16
3.6.2 Project boundary (80)	17
3.6.3 Baseline identification (87-88)	19
3.6.4 Algorithms and/or formulae used to determine emission reductions (92-93)	21
3.7 Additionality of a project activity (97)	23
3.7.1 Prior consideration of the clean development mechanism (104)	24
3.7.1.1 Historical information on project timeline	26
3.7.2 Identification of alternatives (107)	27
3.7.3 Investment analysis (114)	28
3.7.4 Barrier analysis (118)	38
3.7.5 Common practice analysis (121)	38
3.8 Monitoring plan (124)	41
3.9 Sustainable development (127)	43
3.10 Local stakeholder consultation (130)	43
3.11 Environmental impacts (133)	46
4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS	47
5 VALIDATION OPINION	47



6	REFERENCES.....	49
7	CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS	53
	APPENDIX A: COMPANY CDM PROJECT VALIDATION PROTOCOL.....	54
	APPENDIX B: EXPLANATION OF HOW DUE ACCOUNT OF COMMENTS WAS TAKEN BY THE VALIDATION TEAM.....	149



1 INTRODUCTION

International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2 has commissioned Bureau Veritas Certification to validate its CDM project Hydro electric power project by SJVNL in Himachal Pradesh (hereafter called “the project”) at Village Bael, Rampur, District Shimla & Kullu, Himachal Pradesh, India.

This report summarizes the findings of the validation of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The validation serves as project design verification and is a requirement of all projects. The validation is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

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

1.3 Validation team

The validation team consists of the following personnel:



FUNCTION	NAME	CODE HOLDER*	TASK PERFORMED
Lead Verifier	H.B.Muralidhar	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input type="checkbox"/> RI
Verifier	Naresh Badhwar	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input type="checkbox"/> RI
Technical Specialist	-	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
Financial Specialist	Sushil Budhia Associates	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
Internal Technical Reviewer (ITR)	Sanjay Patankar	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
Specialist supporting ITR	-	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI
Report Approval	Flavio Gomes	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DR <input type="checkbox"/> SV <input checked="" type="checkbox"/> RI

*DR = Document Review; SV = Site Visit; RI = Report issuance

2 METHODOLOGY

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the version 01.2 of the Clean Development Mechanism Validation and Verification Manual, issued by the Executive Board at its 55th meeting on 30/07/2010. The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The completed validation protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Project Design Document (PDD) submitted by project participant and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Project Design Document (CDM-PDD), Approved methodology, Kyoto Protocol, Clarifications on Validation Requirements to be Checked by a Designated Operational Entity were reviewed.



To address Bureau Veritas Certification corrective action and clarification requests, project participant revised the PDD and resubmitted it on February 2011.

The validation findings presented in this report relate to the project as described in the PDD version 07.

2.2 Follow-up Interviews

From 8th to 10th July 2009 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Satluj Jal Vidyut Nigam Limited, International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2, Emergent Ventures India Pvt Ltd (consultant) and local stakeholders were interviewed (see References). A visit was also made from 15th to 16th Feb 2010 to the office of Satluj Jal Vidyut Nigam Limited and discussions were held with Satluj Jal Vidyut Nigam Limited and Emergent Ventures India Pvt Ltd. The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Satluj Jal Vidyut Nigam Limited	<ul style="list-style-type: none"> ➤ CDM consideration ➤ Methodology application ➤ Benchmark analysis ➤ Additionality ➤ Local stakeholder consultation and resolution of their concerns ➤ Supporting data, evidences and documentation ➤ Resolution of CARs and CLs ➤ Monitoring system ➤ Metering system
International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2	<ul style="list-style-type: none"> ➤ CDM consideration ➤ Methodology application ➤ Benchmark analysis ➤ Additionality ➤ Supporting data, evidences and documentation ➤ Resolution of CARs and CLs



Interviewed organization	Interview topics
Emergent Ventures India Pvt Ltd (consultant)	<ul style="list-style-type: none"> ➤ Methodology application ➤ Baseline determination and emission factor ➤ Benchmark analysis ➤ Additionality ➤ Resolution of CARs and CLs
Local Stakeholders	<ul style="list-style-type: none"> ➤ Views and concerns about the project activity ➤ Confirmation of local stakeholder consultation by project participant

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

Corrective Action Requests (CAR) is issued, where:

- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- (b) The CDM requirements have not been met;
- (c) There is a risk that emission reductions cannot be monitored or calculated.

The validation team may also use the term Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

2.4 Internal Technical Review

The validation report underwent a Internal Technical Review (ITR) before requesting registration of the project activity.

The ITR is an independent process performed to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as internal Bureau Veritas Certification procedures.



The Lead Verifier provides a copy of the validation report to the reviewer, including any necessary validation documentation. The reviewer reviews the submitted documentation for conformance with the validation scheme. This will be a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the reviewer ensures that:

The validation activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.

The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the validation exercise, review of sample documents.

The reviewer compiles clarification questions for the Lead Verifier and Validation Team and discusses these matters with Lead Verifier.

After the agreement of the responses on the 'Clarification Request' from the Lead Verifier as well as the PP(s) the finalized validation report is accepted for further processing such as uploading on the UNFCCC webpage.

3 VALIDATION CONCLUSIONS

In the following sections, the conclusions of the validation are stated.

The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Validation Protocol in Appendix A.

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the Project resulted in 30 Corrective Action Requests (CARs) and 8 Clarification Requests (CLs).

The CARs and CLs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

The number between brackets at the end of each section correspond to the VVM paragraph



3.1 Approval (49-50)

India and Sweden are the parties involved in this project activity and India is the host party. The project participant Satluj Jal Vidyut Nigam Limited (SJVNL) has obtained approval (Ref 10) from DNA of India and have provided copy of this letter (Letter No: 4/12/2009-CCC dated 17th Feb 2010) to the validation team and does not doubt its authenticity. The validation team has verified the authenticity of the approval from the website of DNA of India*. The website confirms approval by DNA under project ID no. 1585-09. The letter of approval of DNA of India for SJVNL was provided by project participant to the validation team. The letter of approval for SJVNL clearly states that India has ratified the Kyoto Protocol and the approval is for voluntary participation in CDM project activity. Also, the letter of approval of DNA of India states and confirms that project activity contributes to sustainable development in India. The letter of approval of DNA of India states the precise proposed CDM project activity title in the PDD being submitted for registration. The letter of DNA of India is unconditional with respect to party to the Kyoto Protocol, voluntary participation, contribution to sustainable development and title of project activity. The validation team confirms that this letter of DNA of India is in accordance with paragraphs 45 – 48 of VVM version 1.2.

The project participant 'International Bank for Reconstruction and Development' as the Trustee for the Umbrella Carbon Fund Tranche2' provided letter of approval (Letter dated 24th Feb 2011) of Swedish Energy Agency to the validation team and validation team does not doubt its authenticity. The validation team checked its authenticity by corresponding via e-mail with the Swedish Energy Agency. The validation team wrote an e-mail to Swedish Energy Agency on 1st March 2011 enquiring whether the letter of approval was issued by them. Swedish Energy Agency confirmed vide their e-mail dated 1st March 2011 that letter of approval for the project activity was issued by them. Swedish Energy Agency is the DNA for Sweden as stated on UNFCCC website. The letter of Approval dated 24th Feb 2011 refers to same project activity title as stated in PDD being submitted for request for registration. The letter of approval clearly states that Sweden has ratified the Kyoto Protocol. The letter of approval confirms that participation in the project is voluntary. The letter of DNA of Sweden is unconditional with respect to party to the Kyoto Protocol, voluntary participation, and title of project activity.

The letter for host country approval was not provided initially by the project participant and. CL 1 was raised. The party in webhosted PDD was

* http://cdmindia.nic.in/cdm_india.htm



Spain and in revised PDD, party was changed to Sweden. The project participant in webhosted PDD was International Bank for Reconstruction and Development (“World Bank”) as Trustee of the Spanish Carbon Fund and in revised PDD, the project participant was stated as International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2’. These were raised as a part of CL 1. The project participant clarified that International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2 signed a letter of Intent with Satluj Jal Vidyut Nigam Ltd and since International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2 is an entity in Sweden so Letter of Approval of Sweden was taken and party in revised PDD was stated as Sweden. It was further clarified that project participant remains same and since International Bank for Reconstruction and Development is working under different capacities in different countries and in Sweden it is working as trustees of Umbrella carbon fund Tranche2 so project participant name in revised PDD is stated as International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2. The same was accepted by the validation team and CL 1 was closed.s

Bureau Veritas Certification considers the letter of DNA of India and Sweden is in accordance with paragraphs 45 - 48 of the VVM.

3.2 Participation (54)

The participation for each project participant has been approved by a Party of the Kyoto Protocol.

The participation of Satluj Jal Vidyut Nigam Ltd has been approved by a Party of the Kyoto Protocol as detailed below.

The parties for this project are India and Sweden and India is host party.. India has ratified the Kyoto Protocol on 26th Aug 2002. This has been confirmed from UNFCCC website <http://maindb.unfccc.int/public/country.pl?country=IN>. Sweden has ratified the Kyoto Protocol on 31st May 2002. This has been confirmed from UNFCCC website <http://maindb.unfccc.int/public/country.pl?country=SE>.

Bureau Veritas Certification published the project documents on the UNFCCC CDM website (<http://cdm.unfccc.int>) on 23/05/2009 and invited comments within 21/06/2009 by Parties, stakeholders and non-governmental organizations. Comments were received from one person. The project participant provided response to these comments. Validation



team took due account of these comments and the respective responses while making the validation opinion. The details of the comments received, responses by the project participant/s and the explanation of how due account of these is taken by the validation team are attached as Appendix B with this validation report.

The participation of Satluj Jal Vidyut Nigam Limited is approved by DNA approval letter (Letter No: 4/12/2009-CCC dated 17th Feb 2010) and is accepted. The participation for project participant (SJVNL) has been approved by a Party of the Kyoto Protocol. The validation team confirmed the authenticity of the approval from the website of DNA of India. The website confirms approval by DNA under project ID no. 1585-09. The letter of approval clearly states that India has ratified the Kyoto Protocol and the approval is for voluntary participation in CDM project activity. Also, the letter of approval of DNA of India mentions that project contributes to sustainable development in India.

The project participant 'International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2' provided letter of approval (Letter dated 24th Feb 2011) of Swedish Energy Agency to the validation team and validation team does not doubt its authenticity. The validation team checked its authenticity by corresponding via e-mail with the Swedish Energy Agency. The validation team wrote an e-mail to Swedish Energy Agency on 1st March 2011 enquiring whether the letter of approval was issued by them. Swedish Energy Agency confirmed vide their e-mail dated 1st March 2011 that letter of approval for the project activity was issued by them. The letter of approval clearly states that Sweden authorizes Swedish Energy Agency and International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2 to participate in the project activity. The letter of approval clearly states that Sweden has ratified the Kyoto Protocol. The letter of approval confirms that participation in the project is voluntary. The letter of DNA of Sweden is unconditional with respect to party to the Kyoto Protocol, voluntary participation, and title of project activity.

3.3 Project design document (57)

During the validation process it was found that the explanation related to technological well being was not detailed in Section A.2 of the webhosted PDD and therefore CAR 2 was raised. The project participant described technological well being in detail and accordingly CAR 2 has been closed. CAR 3 was raised as complete latitude and longitude were not stated in webhosted PDD. The project participant provided the complete latitude and longitude and accordingly CAR 3 was closed. Complete name of category was provided in response to CAR 4. Details as required by



Guidelines for completing PDD were provided in section A4.3 in response to CAR 5. Complete details were not provided in Annex I of webhosted PDD and CAR 15 was raised. CAR 15 was closed after complete details were provided in Annex 15.

The validation team confirms that the PDD complies with the latest forms and guidance documents for completion of PDD. The PDD is as per Guidelines for Completing the Project Design Document (CDM-PDD) (EB 41 Annex 12).

3.4 Changes in the Project Activity

The project is still under construction and has not been commissioned. The generation of power is expected to start in 2012. There are no changes observed in the implementation of project under the present circumstances.

The PDD Version 7 has following major changes in comparison to Version 1 which was webhosted

1. Latest version of methodology is used
2. CER estimates revised
3. Chronology of events further detailed
4. Benchmark revised
5. IRR revised (all parameters used in the computation of the financials have been explained in greater detail).
6. Barrier analysis has been removed
7. Common practice analysis revised
8. Monitoring parameters and monitoring plan revised.
9. Stakeholder comments further detailed.
10. The description of the project and delineation of the project boundary has been modified.

3.5 Project description (64)

The Rampur Hydroelectric Project (RHEP) is a run-of-river project located in Village Bael, Rampur in Himachal Pradesh. The total installed capacity is 412 MW. The project is located on the River Satluj and it will use the de-silted waters of the existing Naptha Jhakri Hydro power project (NJHPP). RHEP is located downstream of NJHPP. The water available from the tail race of NJHPP is used as the intake into RHEP. The water (from the tail race) of NJHPP is channelized through a tunnel and



ultimately reaches the RHEP facility. The design thus ensures that the same de-silted water reaches the RHEP facility.. Therefore,,investment requirement in further de-silting of the water downstream of the NJHPP facility has been completely eliminated. There is also a provision to divert water from the tail race of NJHPP to Sutlej River, instead of being diverted to RHEP. This indicates that the generation at RHEP depends upon the operation of NJHPP for its requirements of water intake only, .however the converse is not true. For instance, if NJHPP is shut down, or has reduced generation, RHEP will have zero or reduced generation as a consequence. However, if there is a shutdown of the RHEP facility, it would have no effect on the NJHPP's generation, as the water coming from NJHPP could be diverted to the river without entering into the tunnel to RHEP. Other operational and management aspects are independent of each other. The operation of NJHPP is thus independent of the operation of the RHEP. In this sense both RHEP and NJHPP are two independent projects. The NJHPP project has been already in operation since 2003, while the RHEP project is likely to be commissioned in 2012.

The project design have been validated during the site visit .The documents related to project design and other documents referred to in the different section of the Validation Report (such as DPR , Memorandum presented to PIB for cost approval, technical approvals and design drawings of the projects) has been reviewed to confirm this fact .

The purpose of the project activity is generation of electricity using the hydro energy potential available in the River Satluj. The RHEP project will consist of six turbine generators, each having a rated capacity of 68.67 MW. The project is designed to use de-silted water from the Nathpa Jhakri power project through a tunnel to a surface power station at Village Bael. The project is under construction and is expected to be commissioned by 2012. The project activity has a capacity of generating approximately 1,770 GWh in a ninety percent hydrological dependable year as stated in the Minutes of Meeting of PIB (Ref 4) which amounts to a PLF of 49.04%.

During the validation exercise it was observed that the justification for Plant Load Factor (PLF) was not detailed and other details regarding measurement of electricity such as the layout of the metering system were not provided in webhosted PDD and therefore CAR 1 was raised. It was closed after explanation on the PLF was justified and complete details were provided in revised PDD. Details on the purpose, baseline and scenario existing prior to project activity were also not detailed in section A 4.3 of the webhosted PDD and CAR 6 was raised. CAR 6 was closed after these details were incorporated in revised PDD. Value of emission reduction calculations in section A4.4 were corrected in response to CAR 9



Bureau Veritas Certification recognizes that the Hydro electric power project of Satluj Jal Vidyut Nigam Limited is helping country fulfill its goals of promoting sustainable development. The project is expected to be in line with host-country specific CDM requirements because it –

- is approved for voluntary participation by DNA of India
- provides direct and indirect employment to the local people
- provides electricity to the deficient electricity grid of NEWNE
- leads to reduced fossil fuel consumption
- does not release pollutants like SPM, CO₂, CO, etc.

Initially the design energy considered was 1970 GWh. However during the PIB meeting, the issue of siltation in River Satluj was deliberated as evident from the minutes of PIB meeting (Ref 4). Since the Rampur Hydro electric power projects uses water of Naptha Jakhri hydroelectric project so any generation loss in Naptha Jakhri hydroelectric project will have an effect on Rampur Hydro electric project. Naptha Jakhri project had experienced floods leading to heavy siltation and consequent loss in generation. The generation in Naptha Jakhri hydroelectric project had come to a standstill on account of flushing of the reservoir In view of this, the design energy of the Rampur Hydroelectric project was revised downwards from 1970 GWh to 1770 GWh keeping in view of the operation of the upstream Naptha Jakhri Hydroelectric power project. This design energy was approved and recommended by the Public Investment Board.

The PIB minutes of meeting (Ref 4) also record that cost of the project was revised to Rs 20470.3 million at March 2006 price levels. This cost was finally approved by Cabinet Committee of Economic Affairs communicated by letter of Ministry of Power, Government of India. The life time of the project activity is 35 years.

The Site visit was conducted from 8th to 10th July 2009 .and the project site located at Village Bael, Rampur, District Shimla, Himachal Pradesh, India and the corporate office of Satluj Jal Vidyut Nigam Limited located at Shimla (Himachal Pradesh) were visited. The documents regarding Cabinet Committee of Economic Affairs (CCEA) approval, Public Investment Board (PIB) approval and other documents were reviewed. It is confirmed that the starting date of the project activity is 1st Feb 2007 which is the date of acceptance of civil works. This is as per CDM



Glossary of Terms. The project participant has selected a fixed crediting period of ten years.

Based on site visits and document review, the validation team hereby confirms that the project description in PDD (Ref 2) is accurate and complete in all respects and that there are no changes to the project activity/design or boundary as compared to the webhosted PDD.

3.6 Baseline and monitoring methodology

3.6.1 General requirement (76-77)

The steps taken to assess the relevant information contained in the PDD against each applicability condition are described below.

The proposed Project Activity “Hydro electric power project by SJVNL in Himachal Pradesh” uses the approved methodology ACM 0002 ver 12.1.0. The project activity meets the applicability conditions as shown below

1. The project activity is installation of a new grid connected run-of-the river hydro power project. This is verified from minutes of meeting of Public Investment Board (Ref 4) which recommended the project.
2. The project is a green-field project and does not involve capacity additions, retrofits or replacements. The project shall use desilted water of the existing Naptha Jakhri hydroelectric project to generate electrical energy and thus it does not involve capacity additions, retrofits or replacements.
3. This is a run of the river hydro power project which does not involve construction of any reservoir. The PIB minutes of meeting (Ref 4) record that project shall use desilted water of the existing Naptha Jakhri hydroelectric project to generate electrical energy.
4. Since the project activity involves installation of a new grid connected run-of-the river hydro power project, it does not involve switching from fossil fuel to renewable energy.
5. This is not a biomass plant and it is a run of the river hydro power project.

The validation team therefore confirms that the project activity meets all the applicability conditions of the selected approved methodology ACM 0002, version 12.1.0. Conditions under which methodology is not applicable were not mentioned in webhosted PDD and CAR 10 was raised. CAR 10 was closed after these conditions were included and addressed in the revised PDD.

The validation team hereby confirms that the selected baseline and monitoring methodology, The ‘Tool to calculate the emission factor for an



electricity system' and the 'Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion' have been previously approved by the CDM Executive Board, and is applicable to the project activity, which, complies with all the applicability conditions therein.

The validation hereby confirms that, as a result of the implementation of the proposed CDM project activity, there are no greenhouse gas emissions occurring within the proposed CDM project activity boundary, which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

3.6.2 Project boundary (80)

As per ACM 0002 ver 12.1.0, the spatial extent of the project boundary includes the project site and all power plants connected physically to the electricity system that the CDM project power plant is connected to.

The spatial extent of the project boundary is assessed through the description in the PDD and the grid structure in India as known from the official data available from the Central Electricity Authority, CEA. The project activity boundary therefore includes the CDM project and all power plants connected physically to the NEWNE grid of India that the CDM project plant is connected to.

The consideration of only CO₂ gas for the baseline emissions is conservative and in line with the methodology and hence appropriate. The project is run-of-the river project and does not include a reservoir hence no methane emissions are considered. Further, no leakage emissions are considered in line with ACM 0002 ver 12.1.0.

The project design is sound and the geographical [Village Bael, Rampur, District Shimla, Himachal Pradesh, India] and temporal (35 years) boundaries of the project are clearly defined. Life of the project activity is 35 years. Project boundary was revised in response to CAR 11.

The validation team confirms that the only greenhouse gas relevant to the project activity is CO₂. This gas is addressed by the applied methodology.

Based on the above assessment, the validation team hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.



As explained in the beginning, RHEP, would use water from the tailrace of Nathpa Jhakri project built upstream and depends on NJHPP's operation for the water released but is otherwise independent in its implementation and operation. RHEP's project boundary begins with the tunnel which starts from the Nathpa Jhakri tail race.

RHEP is a run-of-river project operated as a cascade station to NJHPP. As mentioned earlier, the RHEP will use the water exiting from the NJHPP tailrace; and thus its construction and operation neither require a dam nor any new reservoir capacity or additional land inundation. No additional de-silting chambers are required, because the water already would be de-silted to the extent practically possible in the NJHPP de-silting chambers situated between the dam at Nathpa and its 27 km long headrace tunnel. The RHEP intake, which in effect is the NJHPP tailrace, acts as a breaking cistern in the water conduction between the two stations.

From the Rampur intake, a 15 km long and 10.5 meter diameter headrace tunnel will transfer the de-silted water, at the rate of about 384 cubic meters per second to the head of three above-ground, surface-mounted steel penstocks, with diameters of 5.4 meters, which branch to six penstocks measuring about 3.8 meters in diameter. The penstocks will deliver the water to drive the six turbines to be installed in a surface powerhouse on the left bank of the River Sutlej near Bael village. RHEP will not extract any water from the river since it takes the water directly from the tailrace of the Nathpa Jhakri scheme.

Subsequent to its utilization in the RHEP, the water would be returned to the River Sutlej.

The project does not divert any additional water downstream of the Nathpa dam, and will not require any new dam*. The 412 MW power output of the RHEP is a direct product of the 139 meter pressure head and this flow of water. The powerhouse structure will also house the six generator transformers, which will step up the 11 kV generation voltage to the 400 kV ground surface gas insulated switchgear yard, for transmission into the northern electricity grid.

The project has been depicted pictorially in the PDD.

* <http://sjvn.nic.in/projects/rampurpdf/final-executive-summary.pdf> (page 4)



At present the water released from NJHPP re-enters river Satluj through tail race vertical lift slide outfall gates. In the final configuration with RHEP, these gates will normally remain closed and will only be manually open in the event of serious problems with Rampur, necessitating that NJHPP again operate as a single station. It is also being proposed to upgrade the control mechanism of these gates to permit set point control for the opening of the gates. This will enable differential operation of Nathpa Jhakri and RHEP in case situation demands. For example, if a RHEP unit trips, it should be possible to operate without reducing the generation from NJHPP. This will be possible as in the present condition (Pre commissioning of RHEP) discharge from NJHPP is allowed to escape from the tail race tunnel outfall gates in to the river. Since RHEP is dependent on exiting water from NJHPP project, RHEP can only generate when Nathpa Jhakri is operating but not the other way round. The boundary of the RHEP therefore does not include the NJHPP as its generation is not affected by the operation of the RHEP.

In summary, RHEP project does not involve construction of any reservoir, and it does not affect the storage capacity and generation at NJHPP. Operation of RHEP thus does not lead to any additional greenhouse gas emissions. All emissions due to RHEP have been taken into account and the same has been validated by BVCH in accordance with para 79 of VVM 1.2.

The validation team validated the project boundary in line with para 79 of VVM ver 1.2 by reviewing approval documents for the project such as approval of Central Electricity Authority, minutes of meeting of Public Investment Board. Minutes of meeting of Public Investment Board clearly records that project is located on River Satluj in Himachal Pradesh and power house is located on right bank of River Satluj near Village Bael. The same was also confirmed during the site visit. The validation team visited the power house which was under construction. Based on the above assessment, the validation team hereby confirms that the identified boundary and the selected sources and gases are justified for the project activity.

3.6.3 Baseline identification (87-88)

The steps taken to assess the requirement given in paragraph 81 and 82 of the VVM are described below:

Validation team assessed the baseline identification using the provisions of the applicable methodology.



Project participant has provided the details on the baseline scenario in section B.4 of the PDD. In the para 105 of the VVM manual ver 1.2, it is stated that the PDD shall identify credible alternatives to the project activity in order to determine the most realistic baseline scenario, unless the approved methodology that is selected by the proposed CDM project activity prescribes the baseline scenario and no further analysis is required. ACM 0002 ver 12.1.0 prescribes the baseline scenario for installation of a new grid-connected renewable power plant/unit as follows

“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”.

Accordingly, project participant identified two possible alternatives to the project activity, viz., implementation of the project activity without CDM benefits and continuation of power generation in existing and new grid connected thermal power stations i.e. continuation of current situation.

Through additionality, the project participants have established that project activity without CDM would not have been implemented through a comprehensive explanation of additionality. Therefore, the baseline scenario applicable to the project activity is – ‘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”. This is in line with the methodology. Since the methodology already specifies the baseline, no further analysis is required.

The project participant has used the official published data on operating and build margin emission factors. The version of the data used is as available on the date of validation. This data is published by Central Electricity Authority, CEA who is the sole authority for the publication of such data in India. This data is based on the emission factor tool approved by UNFCCC. Project participant has applied weight factors for the OM and BM [50% & 50% respectively] as specified in the tool to arrive at the emission factor for the combined margin. Accordingly, the combined margin emission factors is 0.8033 tCO₂/MWh for NEWNE Grid.



The validation team agrees to this emission factor since it is based on the official data published by CEA. The validation team further notes that the emission factors are not provided by DNA but by the competent authority.

It is noted that the selected baseline scenario is in line with the selected approved methodology. National Hydro Power Policy 2008, Government of India and Hydro Power Policy 2006 for Government of Himachal Pradesh are discussed in brief in Annex 5 of PDD.

Based on the above assessment, the validation team hereby confirms that:

- (a) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- (d) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

3.6.4 Algorithms and/or formulae used to determine emission reductions (92-93)

The steps taken to assess the requirement outlined in paragraph 89 of the VVM are described below:

The project participant has used the algorithm and formulae in line with the Emission Factor tool. The detailed algorithm and formulae used are provided in section B6.1 and calculations are detailed in section B.6.3 of the PDD.

As per ACM0002, the baseline emission sources considered are CO₂ emissions from electricity generation in fossil fuel fired power plants that is displaced due to the project activity.

As required under ACM0002, project participant has calculated the baseline emissions by multiplication of the net electricity supplied by the project activity and the grid emission factor. The detailed algorithms are described later under sections B.6.1 of the PDD and calculations are shown in section B6.3 of PDD.



The project activity is electricity generation by run-of-the river hydro plant. DG sets will be installed as a back-up for in-house power requirements and these will result in project emissions. Section B 6.1 of PDD provides formulae to calculate project emission emissions as per Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion. The project also involves installation of Gas insulated transmissions lines from step up transformer to Switch yard SF₆ will be used as insulating media. At the project site the SF₆ stored in the gas handling machine will be used to top up the circuit breaker compartments in case of any pressure drop. Project participant would monitor the quantity of SF₆ filled into the circuit breaker compartments from the gas handling machine during monitoring period and would account for project emissions on account of SF₆. At present in the PDD, project emissions due to DG sets and SF₆ are not specified as the project is not yet implemented, however it is stated in PDD that these emissions will be calculated and deducted from baseline emissions during verification. These emissions will be calculated based on actual data as per formulaes specified in section B6.1 of PDD.. With reference to this methodology, project does not lead to any leakage.

The validation team assessed the calculations of estimated CERs as provided by project participant in a spreadsheet (Ref 46). The assumptions in this spreadsheet were validated as follows -

Parameter, Value	Source information of	Validation justification
Project Capacity, MW 412	Cabinet Committee on Economic Affairs approval communicated by letter of Ministry of Power, Government of India dated 25/01/2007 (Ref 3)	Capacity is as approved by Cabinet Committee on Economic Affairs communicated by letter of Ministry of Power, Govt of India. The same capacity of generator is stated as per contract to Bharat Heavy Electricals Ltd by SJVNL
Design energy, 1770 GWh (amounting to PLF of 49.04%)	Design energy is as approved by Public Investment Board (PIB) as per minutes of meeting of PIB dated 25/07/2006 (Ref 4)	Design energy approved by Public Investment Board was 1770 GWh which amounts to PLF of 49.04%. Public Investment Board is a Government of India body. As per EB 48 Annex 11, PLF can be taken as PLF provided to Government while applying the project activity for implementation approval. The project was approved and recommended by PIB, Government of India for implementation approval. Thus PLF is in line with EB 48 Annex 11.
Baseline EF, 0.8033 for	CEA database ver 4	CEA database is an official source of data and hence acceptable. EF is



VALIDATION REPORT

NEWNE Grid		determined ex-ante. CEA database version 4 is used which is applicable at the time of submitting PDD for validation. This is in line with Tools to calculate emission factor for an electricity system.
Auxiliary consumption, 0.5%	CERC tariff regulations (2004-09) (Ref 34)	The CERC tariff regulations are official source of information and they were available at the time of decision making and hence it is considered reasonable. This is also in line with para 6 of EB 51 Annex 58.
Transformation losses, 0.5%	CERC tariff regulations (2004-09) (Ref 34)	The CERC tariff regulations are official source of information and they were available at the time of decision making and hence it is considered reasonable. This is also in line with para 6 of EB 51 Annex 58.

The estimated annual average of approximately 1,407,658 tCO₂e over the crediting period of emission reduction represents a reasonable estimation using the assumptions given by the project participant. Complete steps for calculating emission factor was not detailed in webhosted PDD and CAR 18 was raised. It was closed after all the steps for emission factor were provided as per tools to calculate emission factor for an electricity system. All the assumptions for this estimate either come from the assumptions used for investment analysis or grid emission factor as taken from CEA website. These are already validated in Section 3.7.3 of this report. It also can be verified using the spreadsheet for calculations of CERs.

Based on the above assessment, the validation team hereby confirms that:

- (a) All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- (c) All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;
- (d) The baseline methodology has been applied correctly to calculate emission reductions;
- (e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

3.7 Additionality of a project activity (97)

The steps taken and sources of information used, to cross-check the information contained in the PDD on this matter are described below:



The project participant has demonstrated additionality in accordance with Additionality tool. The approach adopted by the Validation Team, the documents, and sources of information used, to cross-check/verify the information contained in the PDD on all aspects related to additionality are described in detail below:

3.7.1 Prior consideration of the clean development mechanism (104)

As per Glossary of CDM terms, the starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins. The project activity is not yet commissioned and it is under construction. The project participant had invited bids for execution of the project and the bid of Ms Patel Gammon Joint Venture was accepted for execution of the project. The project participant had issued a 'letter of acceptance' to M/s Patel Gammon Joint Venture on 01/02/2007. Copy of the letter of acceptance was provided by project participant (Ref 13). There cannot be any real action before the letter of acceptance so the validation team has accepted this letter for confirming the start date of project activity. In fact, the start date was not correctly mentioned in webhosted PDD and CAR 14 was raised. CAR 14 was closed after start date was corrected in the revised PDD and it is in line with Glossary of CDM terms.

In accordance with rules and regulations of the Government India, the approval of the project has been accorded by three agencies namely Central Electricity Authority (CEA), Public Investment Board (PIB) and Cabinet Committee on Economic Affairs (CCEA) of Government of India. The Central Electricity Authority accorded the 'Techno Economic clearance' to the project (at March 2005 price levels). A copy of letter of Central Electricity Authority (Ref 5) that gives concurrence to the project activity has been provided by the project participant (SJVNL). Following this, the memorandum for the Public Investment Board (PIB) has been prepared by Ministry of Power, Government of India. The Public Investment Board (PIB) recommended the project cost (revised at March 2006 price levels) to Cabinet Committee on Economic Affairs (CCEA). The 'Minutes of meeting' of Public Investment Board (Ref 4) held on 25/07/2006 were provided by project participant (SJVNL). The Public Investment Board has recommended the project cost for CCEA approval. The final approval of the project has been accorded by Cabinet Committee on Economic Affairs, Government of India which was communicated by a letter of Ministry of Power, Government of India on 25/01/2007. This letter of Ministry of Power, Govt of India (Ref 3) conveying the approval of CCEA has also been provided by project participant (SJVNL). The CCEA approval is considered as the investment decision date for the project as



the real action on project can be started by project participant once it is approved by CCEA.

The project participant was aware of CDM prior to project activity start date as they had been discussing CDM with the World Bank prior to the investment decision date (i.e. CCEA approval). Copies of letters written to The World Bank by project participant regarding availing carbon credits were provided by the project participant. The World Bank had written a letter to Ministry of Power, Government of India on 22nd Feb 2006 wherein it was indicated that Satluj Jal Vidyut Nigam Ltd had indicated their interest in exploring possibility for carbon revenues for the project. This indicates that project participant was aware of CDM prior to project start date which is in line with EB 49, Annex 22.

The project participant has provided Memorandum for the Public Investment Board (Ref 6) which clearly records that 'Satluj Jal Vidyut Nigam Ltd has been exploring the possibility of obtaining carbon credits' and accordingly revenues from carbon credit would form part of cash flows. The guidelines on Public investment/expenditure, Government of India states that only projects with IRR exceeding 12% should be presented to the Public Investment Board (PIB) for consideration. The Memorandum for Public Investment Board (PIB) states the IRR as 11.83% (without considering free power to state) which is less than 12%. However, the project was still approved and recommended by Public Investment Board and it was stated in the memorandum for PIB that Satluj Jal Vidyut Nigam Ltd is exploring the possibilities of obtaining carbon credits and accordingly carbon revenues shall also form part of cash flows. As per the implementation agreement of SJVNL with Himachal Pradesh State Government, 12% of the power will be provided free of cost to the state government. The IRR calculated in Memorandum of PIB considers revenues for the entire power generated. However, in reality, the project participant (SJVNL) will not get any revenues for the free power given to State Government. The project participant has calculated IRR considering 12% free power and it works out to be 10.14% as detailed in section 3.7.3 below. The IRR of 10.14% (with free power) is much below the benchmark of 12%. The draft CCEA note (Ref 42) given by project participant to Ministry of Power on 17th August 2006 also states that Satluj Jal Vidyut Nigam Ltd is exploring the possibility of obtaining carbon revenues and accordingly revenues from carbon credit shall form part of cash flows.

In the 152nd meeting of Board of Directors of Satluj Jal Vidyut Nigam Ltd held on 2nd August 2006, the Board accorded approval for obtaining carbon credits in respect of Rampur Hydroelectric project under Clean Development Mechanism. The validation team physically checked the original Board register and observed that the extract provided was verbatim same as that recorded Board minutes on page 1125 of original



Board register. Validation team also met Chairman and Managing Director of Satluj Jal Vidyut Nigam Ltd to discuss regarding prior consideration of CDM. It was informed that carbon revenues were discussed in the CCEA meeting as the Chairman and Managing Director was present in the CCEA meeting. A written declaration was also provided by the Chairman and Managing Director (Ref 16) wherein it is stated that project was approved by PIB despite IRR being less than 12% only after considering possibility of carbon revenues. The declaration further states that CCEA also considered same IRR and associated carbon benefits for approving the project. The project has been approved despite IRR without CDM revenues less than 12% and from all the discussions above, it is seen that carbon revenues were a decisive factor in the decision to proceed with the project activity which is in line with EB 49 Annex 22.

The project participant signed a letter of Intent with The World Bank (Ref 11) regarding selling of carbon credits on 13th March 2007. CDM consultant was appointed on 13th August 2007. The time gap between investment decision date (25th Jan 2007) and signing of letter of Intent (13th March 2007 and appointment of CDM consultant (13th August 2007) is less than two years. Contract with DOE was signed on 8th April 2009. The time gap between appointment of CDM consultant and contract with DOE is less than 2 years. The project is under construction and it is yet to be commissioned. Since the time gap between documented evidence is less than 2 years, it can be concluded that real and continuing actions were taken to secure CDM status in line with EB 49 Annex 22.

CAR 20 was raised as it was not clear initially from the webhosted PDD and documents provided initially that CDM was a decisive factor in decision making. CAR 20 was closed after documents like memorandum for PIB, draft CCEA note etc were provided and it was determined that CDM was a decisive factor as also described above.

Based on the above assessment, the validation team hereby confirms that the proposed CDM project activity complies with the requirements of Annex 22 of EB 49.

3.7.1.1 Historical information on project timeline

There is no historical information on project timeline applicable to the project activity with respect to any real action prior to start date of project activity. Initially an implementation agreement was signed between project participant and Himachal Pradesh state Electricity Board on 20th Oct 2004. The project participant then prepared DPR and sought approval for the project. Approval of the project is accorded by Central Electricity Authority, Public Investment Board and Cabinet Committee on Economic



Affairs of Government of India. Central Electricity Authority accorded Techno Economic clearance to the project (at March 2005 price levels). Public Investment Board (PIB) recommended the project cost (revised at March 2006 price levels) to Cabinet Committee on Economic Affairs (CCEA). The final approval of the project was accorded by Cabinet Committee on Economic Affairs, Government of India on 25/01/2007. After CCEA approval, the project participant issued a letter of acceptance to M/s Patel Gammon Joint Venture on 01/02/2007 for execution of the project.

Based on the above assessment, the validation team hereby confirms that the proposed CDM project activity complies with the requirements of EB49 Annex 22.

3.7.2 Identification of alternatives (107)

Project participant has provided the steps for identification of the alternative scenario in section B.5 of the PDD. It is stated in para 105 of VVM manual ver 1.2, that the PDD shall identify credible alternatives to the project activity in order to determine the most realistic baseline scenario, unless the approved methodology that is selected by the proposed CDM project activity prescribes the baseline scenario and no further analysis is required. ACM 0002 ver 12.1.0 prescribes the baseline scenario for installation of a new grid-connected renewable power plant/unit as follows

“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”.

Accordingly, project participant identified 2 possible alternatives to the project activity, viz., project activity without CDM benefits and Continuation of power generation in existing and new grid connected thermal power stations.

The methodology ACM 0002 ver 12.1.0 prescribes the baseline scenario and as per para 105 of VVM ver 1.2 no further analysis is required. The project participant considered two alternatives as described above. The validation team is of the opinion that requirement of identification of alternatives is met as per VVM ver 1.2. The validation team considers the list of alternatives credible and complete.



3.7.3 Investment analysis (114)

Project participant has shown additionality using the investment analysis. The input values for investment analysis have been validated as follows:

Parameter, Value	Source of information	Validation justification
Cost of project INR 20470.3 Million	Cabinet Committee on Economic Affairs approval communicated by letter of Ministry of Power, Government of India dated 25/01/2007 (Ref 3)	Cost is as approved by Cabinet Committee on Economic Affairs communicated by letter of Ministry of Power, Govt of India. This cost is applicable at the time of decision making which is in line with para 6 of EB 51 Annex 58.
Project Capacity, MW 412 MW	Cabinet Committee on Economic Affairs approval communicated by letter of Ministry of Power, Government of India dated 25/01/2007 (Ref 3)	Capacity is as approved by Cabinet Committee on Economic Affairs communicated by letter of Ministry of Power, Govt of India. This is in line with para 6 of EB 51 Annex 58. The same capacity of generator is stated as per contract to Bharat Heavy Electricals Ltd by SJVNL (Ref 14)
Design energy, 1770 GWh (amounting to PLF of 49.04%)	Design energy is as approved by Public Investment Board (PIB) as per minutes of meeting of PIB dated 25/07/2006 (Ref 4)	Design energy approved by Public Investment Board was 1770 GWh which amounts to PLF of 49.04%. Public Investment Board is a Government of India body. As per EB 48 Annex 11, PLF can be taken as PLF provided to Government while applying the project activity for implementation approval. The project was approved and recommended by PIB, Government of India for implementation approval. Thus PLF is in line with EB 48 Annex 11.
O&M cost, 1.5% of capital cost	CERC tariff regulations (2004-09) (Ref 34)	The CERC tariff regulations (2004-09) are official source of information and they are applicable at the time of decision making and hence it is considered reasonable. This is also in line with para 6 of EB 51 Annex 58.
Escalation in O&M cost, 4% per year.	CERC tariff regulations (2004-09) (Ref 34)	The CERC tariff regulations (2004-09) are official source of information and they are applicable at the time of decision making and hence it is considered reasonable. This is also in line with para 6 of EB 51 Annex 58.



Parameter, Value	Source of information	Validation justification
Tariff, (calculated as per CERC tariff regulations) INR 2.39/Kwh for first year and calculated as per CERC tariff regulations for rest of years	Tariff is calculated as per CERC tariff regulations (2004-09). It is as mentioned in Memorandum for PIB dated May 2006 (Ref 6)	Tariff is calculated as per CERC Tariff regulations (2004-09) which are applicable at the time of decision making. Tariff is as mentioned in Memorandum for the PIB dated May 2006. Tariff is based on CERC Tariff Regulations (2004-09) which are official source of information and it is applicable at the time of decision making which is in line with para 6 of EB 51 annex 58. The project participant will be filing application for tariff every year after commissioning of project. Accordingly sensitivity on tariff is carried out.
Debt: equity ratio, 70: 30	Cabinet Committee on Economic Affairs approval communicated by letter of Ministry of Power, Government of India dated 25/01/2007 (Ref 3)	Debt equity ratio is as approved by Cabinet Committee on Economic Affairs communicated by letter of Ministry of Power, Govt of India. This debt equity ratio is applicable at the time of decision making which is in line with para 6 of EB 51 Annex 58.
Interest on term loan, 7.25%	The World Bank letter to Satluj Jal Vidyut Nigam Ltd dated 20/12/2005 and as mentioned in Memorandum for PIB dated May 2006	<p>The World Bank had communicated to Satluj Jal Vidyut Nigam Ltd about the interest rate. 6-month LIBOR was 5.63%, variable spread of 0.17%, commitment fees of 0.25%, Guaranteed fees charged by Govt of India of 1.2%. Total interest rate works out to be 7.25%.</p> <p>Satluj Jal Vidyut Nigam Ltd has not availed any loan in three years period prior to decision date.</p> <p>The same interest rate of 7.25% is stated in Memorandum for PIB. This is applicable at the time of decision making and it is in line with para 6 of EB 51 Annex 58.</p>
Interest rate on Working capital, 9.5%	Interest rate is as mentioned in Memorandum for PIB dated May 2006 (Ref 6)	Interest rate on working capital is as mentioned in Memorandum for PIB. This is applicable at the time of decision making and it is in line with para 6 of EB 51 Annex 58.



Parameter, Value	Source of information	Validation justification
Free power to Himachal Pradesh Government, 12%	Implementation agreement with Himachal Pradesh State Government dated October 20th 2004 (Ref 7)	As per the implementation agreement of the project participant with Himachal Pradesh Government dated 20 th Oct 2004, 12% of the power will be given free to the state government. The validation accepted this as it is as per agreement with state government and it is applicable at the time of decision making which is in line with para 6 of EB 51 annex 58.
Auxiliary consumption, 0.5%	CERC tariff regulations (2004-09) (Ref 34)	The CERC tariff regulations are official source of information and they are applicable at the time of decision making and hence it is considered reasonable. This is also in line with para 6 of EB 51 Annex 58.
Transformation losses, 0.5%	CERC tariff regulations (2004-09) (Ref 34)	The CERC tariff regulations are official source of information and they are applicable at the time of decision making and hence it is considered reasonable. This is also in line with para 6 of EB 51 Annex 58.
Baseline EF, 0.8033 tCO ₂ /MWh for NEWNE Grid	CEA database ver 4	CEA database is an official source of data and hence acceptable. EF is determined ex-ante. CEA database version 4 is used which is applicable at the time of submitting PDD for validation. This is in line with Tools to calculate emission factor for an electricity system.

There is no financial support from Government of India for this project. The entire equity is met by SJVNL internal resources.

In the estimation of the power generation of RHEP all technical parameters such as the head, flow available for RHEP considering normal operation of NJHPP including its scheduled shutdowns, have been considered .

Para 3.7.3 of the validation report starting from page 25 has already discussed in detail about all the input values available at the time of decision making and used for investment analysis of the project activity including project cost and estimation of annual power generation values, which in effect considers operational hours as well.

The data values are discussed and elaborated further as below:



Project cost:

Source of project cost information:

Investment analysis has considered project cost as INR 20470.3 million as approved by the Cabinet Committee on Economic Affairs (CCEA*). CCEA approves the project cost based on the recommendations of the Public Investment Board (PIB) †. CCEA approval of the project cost was communicated to the Project Entity by a letter from Ministry of Power, Government of India Ref 3/†.. This approved cost, which was available at the time of decision making, has been used in the investment analysis. BVC has reviewed all the documents mentioned above and have concluded the source of data used for investment analysis is authentic and was available at the time of decision making which is in accordance with EB 51, Annex 58, para 6).

Basis of project cost estimates:

The project costs has been estimated in accordance to “The Bureau of Indian Standards IS: 4877-1968 entitled “Guidelines for preparation of project estimates for river valley projects” by Government of India, Central Water Commission, March 1997§**. The project cost of RHEP is estimated considering operation of upstream Nathpa Jhakri Hydro Power Project (NJHPP). The Rampur hydropower project will use the water exiting from the Nathpa Jhakri tailrace; and thus its construction and operation neither requires a dam nor any new reservoir capacity or additional land inundation. No additional de-silting chambers is required, because the water would already be de-silted to the extent practically possible in the Nathpa Jhakri de-silting chambers situated between the dam at Nathpa and its 27 km long headrace tunnel. Accordingly due to nature and characteristics of upstream project, RHEP project costs do not include the costs of construction of dam and desilting chamber in its total project cost estimates, which are already accounted for in the NJPH project.

Further, BVC has validated the project cost by comparing the cost/MW of RHEP project with other Run of River projects in Himachal Pradesh of comparable scale, as given below

* CCEA, as the name implies, is a committee comprising of ministries including Ministry of Power chaired by Prime Minister of India. Proposals of the Central Government ministries with regard to their Public Sector Undertakings (PSUs) involving an investment cost of over Rs. 500 million require approval of the CCEA.

† PIB is a body under Government of India which examines the investment plans put forward by the individual ministries under Government of India on behalf of their respective public sector undertakings (PSUs). PIB meeting is chaired by Secretary (Expenditure), Govt. of India, with members from Planning Commission, Ministry of Finance and from other important ministries of Govt. of India.

‡ Please refer to Annexure I- Letter from Ministry of Power Government of India to project participant (SJVNL) dated 25/1/2007 regarding approval of the project (communicating CCEA approval

§ Please refer Annex 3 *Guidelines for preparation of project estimates for river valley projects*

** This is the guideline available at the time of Detailed Project Report preparation. Guideline is provided to DOE.



Project	Capacity (MW)	Total Cost (INR million)	Cost/MW (INR million)	Completed cost as on year
Chamera I	540	21140. 2	39.1	1994*
Chamera II	300	19295. 7	64.1	2003 [†]
Baspa	300	16673. 4	55.6	2003 [‡]
RHEP	412	20470.3	49.6	Estimated cost at the time of decision making in 2006.

As is evident from above, RHEP's project cost per MW is less than that of other projects which are implemented in recent past. Only Chamera-I has less per MW cost but that project was more than a decade old at the time of decision in 2006 and can't be compared with RHEP, this cost would have become comparable if is adjusted to present terms. It may be noted that the RHEP project cost is likely to further escalate since the project is experiencing delays due to poor geological conditions and is now expected to be commissioned only by September 2013 while it was planned to be commissioned by March 2012 (reference for this can be found in the Power ministry's annual budget allocation§ and also in the company's recent annual report**).

Other sources to cross check the project cost:

Further in accordance with VVM 111 b) BVC also cross checked the project cost considered in the investment analysis with the following publicly available sources:

- Annual report of MoP 2008-09 (refer to page 168 and page 146) documents the project cost of RHEP to be INR 20470.3 million.
http://www.powermin.nic.in/funds_for_power_sector/pdf/OUTCOME_BUDGET_2011-12.pdf
- The daily national news article in a reputed newspaper publication, "The Hindu" reports the project cost of RHEP to be INR 20470.3 Million.
<http://www.hinduonnet.com/2007/01/12/stories/2007011217861400.htm>
- Audited annual reports of SJVNL, point no 5.2, page 18 also reports the project cost to be INR 20470.3 Million. <http://sjvn.nic.in/pdf/AnnualReport2007-08.pdf>

* http://www.nhpcindia.com/Projects/english/Scripts/Prj_Features.aspx?Vid=63

†

http://docs.google.com/viewer?a=v&q=cache:vKwZRd85S_OJ:www.nhpcindia.com/writereaddata/Hindi/PDF/5321_1.pdf+Rs.1929.57+crores+chamera+II&hl=en&gl=in&pid=bl&srcid=ADGEEShfwD8s6SpmB3LJcxAgcJkcXAv48AiHgUHMvRW0HHAzTvz1QHJEUeJhEwhVkzU9a4L8JcDnIB1XFbQHq6hBrMmCbgfE44GdVqouVK779lFxlRpgYA04FB-IzCucl_QpLiTY_L4&sig=AHIEtbSB7dboV3oSSjdb53fMjRdmH6CaeQ

‡ <http://www.jppowerventures.com/tariff/BaspaIHEP-MYTAApplication201214.pdf>

§ http://www.powermin.nic.in/funds_for_power_sector/pdf/OUTCOME_BUDGET_2011-12.pdf

** http://sjvn.nic.in/pdf/SJVN_Annual_Report_9_10.pdf, pg 5



Hence in accordance with para 111(a) and 111(b) for the VVM version 1.2, the parameters of total project cost are found to be accurate, suitable and properly cross checked.

Considering the above references and cross checking, project cost adopted is justified. It is also worthwhile to note that, PP also carried out sensitivity analysis with respect to project cost. Even with 10% decrease in project cost from INR 20470.3 million i.e. Rs. 18828.60 million, project IRR works out to be 10.26% which is less than benchmark of 12% and thus remains additional.

Operational hours and annual power generation:

Source of annual generation information:

In the validation report on page 26, it is reported that the design energy is 1770 GWh for project capacity of 412 MW operating for 8760 hours per annum minus 16 stoppage days to account for plant shut down during desilting and flushing activities at upstream Nathpa Jhakri power plant. This is approved by Public Investment Board (PIB) as per minutes of meeting of PIB dated 25/07/2006 /Ref 4/. As the estimated annual generation is approved by PIB, which is a Government body, it is in line with EB 48, annex 11, Para 3 a). It may also be noted that the same estimated annual generation is provided to the lending bank* (World Bank in this case) for project-debt financing complying again to the requirements of EB 48, annex 11, Para 3.

Basis of annual generation estimate:

As explained above, the Rampur hydropower project is a run-of-river project and will use only the water exiting from the Nathpa Jhakri tailrace. The Rampur hydropower project will have a gross head of 138.7 meters /Ref/6†/. The powerhouse will house six 68.7 MW Francis turbine generators. These will be designed to operate with a net head (gross head less headrace tunnel and penstock friction effects at full water flow) of 119 meters, which is also verified from the CCEA Note. Since the water available from the tailrace of Nathpa Jhakri power plant only will be used in the RHEP, the same discharge /Ref/ 6‡/has been used to study the power generation potential at RHEP. The rated discharge from Nathpa Jhakri Power House is 383.88 Cumecs. This information is also available

* <http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,,contentMDK:21471216~menuPK:64282138~pagePK:41367~piPK:279616~theSitePK:40941,00.html>

† Please refer to Annexure 2- Memorandum for Public Investment Board on cost estimate of the project-Page 2/Para 1 and Annexure 7 Draft CCEA note from Ministry of Power dated August 18,2006

‡ Please refer to Annexure II- Memorandum for Public Investment Board on cost estimate of the project-Page 2/Para 1 and and Annexure 7 Draft CCEA note from Ministry of Power dated August 18,2006



in Annexure 2-RHEP PIB Memo (refer page 2 -1st paragraph of the document).

Based on the above parameters* and as verified from the various documents especially the Memorandum for Public Investment Board on Cost Estimate of the project, generation potential is estimated as below:

Installed capacity: 412 MW

Gross head: 138.7 m

Net head: 119 m

Design discharge: 383.88 Cumecs

Station availability: 95%†

Minimum flow downstream of diversion structure: 7.13 Cumecs (15% of minimum flow observed at Nathpa Jhakri i.e. 47.50 Cumecs‡§)(Ref/35/)

No of days operational per annum: 365 days

This information has been verified are available in Annex 2

No of operational hours for a day: 24 hours

Annual Energy Generation: 1919.87 GWh**

The above generation figure has been further adjusted to account for loss in generation that would be experienced during the period in which the upstream NJHPP will be shut down mainly due to silt concentration. The design energy generation of RHEP has thus been estimated by considering a shut down period of 16 days, which is approved by CEA†††‡ for Nathpa Jakhri power plant. The design energy of REHP works out to be 1770 GWh/year as explained below§§:

Per day generation considering discharge flows during silting period (July/August): 9.39 GWh/day***

* The above mentioned parameters is also specified in http://sjvn.nic.in/projects/projects_rampur_features.asp

† http://sjvn.nic.in/projects/projects_rampur_features.asp

‡ Please refer to Annexure 4- NOC from HP State Environment Protection and Pollution Control Board of the project-Page 3/Para 19)

§ As Consent to establish for Himachal Pradesh State Environment Protection & Pollution Control Board specifies regarding releasing and maintaining minimum flow immediately downstream of diversion structure of Hydel projects throughout the year at a threshold value of not less than 15% of the minimum inflow observed in the lean seasons into the main river/ water body as per direction of the State Government vide notification No. PC F (2)-1/2005 dated 16-07-2005 as amended vide notification No PC.F(2) 1/2005 dated 09-09-2205

** (Please refer to Annexure 5- Energy Generation Sheet of RHEP

†† Central Electricity Authority (CEA) has communicated to Ministry of Power vide letter no CEA/HP&I/HEDP/36/2006/75 dated 17/01/2006 allowing 11 days closure during monsoon and 5 days during non-monsoon for silt flushing for Nathpa Jhakri power plant.

‡‡ Please refer to Annexure 6- Signing of MoU between Ministry of Power and SJVNL for 2006-07 letter dated 17/01/2006)

§§ Referring to PIB information Memorandum dated 22nd May 2006. Further to have enhanced reading on Nathpa Jhakri shut down due to silt concentration, please go through article on "Nathpa Jhakri remains shut down due to high silt level in Himachal, given in footnote no 2.

*** This is the maximum energy generation per day during peak season i.e. July/August which is estimated based on design discharge of 383.88 Cumecs, capacity 412 MW and plant availability 95%.



Loss due to 16 days shut down: $9.39 \text{ GWh/day} \times 16 \text{ days} = 150.30 \text{ GWh}$
Hence design energy after considering shut down days = $1919.87 - 150.30$
= 1770 GWh^*

The reduction in design energy of RHEP on account of higher silt concentration in NJPH is recorded in PIB minutes of meeting and detailed in section 3.5 of validation report.

The project participant also carried out sensitivity on annual generation for a 10% increase in annual generation over a base value of 1770 GWh. This works out to be 1947 GWh and more than the design energy of 1919.87 GWh without shutdown days. Even at 1947 GWh generation, project IRR works out to be 11.39% and less than the benchmark value of 12% and remains additional.

In line with para 111(b) of VVM ver 1.2, validation team also cross checked with the potential power generation value from the Annual report 2008-09† (page no 168) of Ministry of Power, Government of India, which confirms the generation value used in the investment analysis.

Hence the design energy has been validated as per para 111(a) and 111(b) of VVM version 1.2.

Other sources to cross check the power generation:

BVC has also cross checked with the potential power generation value from the Annual report 2008-09‡ (page no 168) of Ministry of Power, Government of India, which confirms the generation value used in the investment analysis.

Hence in accordance with para 111(a) and 111(b) for the VVM version 1.2, this parameter is taken as accurate, suitable and cross checked.

The project activity is under implementation and it has not been commissioned, hence actual values of various parameters are not available. The input values for investment analysis have been validated as per Paragraphs 111 of VVM (ver 1.2) and they are in line with the Guidelines for Assessment of Investment Analysis (EB 51 annex 58) as detailed below.

Cost is as approved by Cabinet Committee on Economic Affairs communicated by letter of Ministry of Power, Govt of India. This cost is applicable at the time of decision making which is in line with para 6 of

* CCEA Approved PLF calculation considering operation of Nathpa Jhakri is submitted to DOE.

† http://www.cea.nic.in/reports/yearly/annual_rep/2008-09/ar_08_09.pdf

‡ http://www.cea.nic.in/reports/yearly/annual_rep/2008-09/ar_08_09.pdf



Guidelines for Assessment of Investment Analysis (EB 51 Annex 58) which states that 'Input values used in all investment analysis should be valid and applicable at the time of the investment decision taken by the project participant'. Sensitivity has been carried out on project cost as explained in following paragraphs.

Design energy approved by Public Investment Board was 1770 GWh which amounts to PLF of 49.04%. Public Investment Board is a Government of India body. As per EB 48 Annex 11, PLF can be taken as PLF provided to Government while applying the project activity for implementation approval. The project was approved and recommended by PIB, Government of India for implementation approval. Thus PLF is in line with EB 48 Annex 11. Sensitivity has been carried out on generation (PLF). O&M cost and escalation in O&M cost is taken from CERC tariff order (2004-09) which is applicable at the time of decision making. This is in line with para 6 of Guidelines for Assessment of Investment Analysis (EB 51 Annex 58). Sensitivity has been carried out on O&M cost.

Debt equity ratio is as approved by Cabinet Committee on Economic Affairs communicated by letter of Ministry of Power, Govt of India. This debt equity ratio is applicable at the time of decision making which is in line with para 6 of EB 51 Annex 58. Interest on term loan is taken as 7.25% which is as per letter communicated by The World Bank to project participant. This is applicable at the time of decision making which is in line with para 6 of EB 51 Annex 58. Project participant has not availed any loan in 3 years period prior to decision making. Auxilliary consumption is taken as 0.5% and transformation losses are taken as 0.5%. These are as per CERC Tariff regulations (2004-09) which is applicable at the decision making and hence are as per para 6 of EB 51 Annex 58. CERC tariff regulations are official source of data and hence acceptable.

CER price is taken as 9.25 Euros and exchange rate was taken as 1 Euro = Rs 57.85. The validation team validated the assumptions as above and observed that they are correct. The financial expert verified the IRR calculations and observed them to be correct. The input values and IRR calculations have been checked in line with para 111 of VVM ver 1.2. The financial expert and the validation team hereby confirm that project participant has calculated IRR correctly.

The benchmark used was for the project activity is 12%. Compendium of Important Orders/Circulars regarding formulation, appraisal, and approval of Plan schemes/projects provides Minimum rate of returns for the projects to be considered by Public Investment Board (PIB). (O.M.No.1(4)/PF.II/84 dt. 27th Jan., 1993). It states that only those projects with a financial rate of return exceeding 12% should be posed to



the PIB for their consideration. Guidelines for formulation, appraisal and approval of Government Plan funded projects/schemes to be made effective over the duration of XI plan Ref no 1(3)/PF.II/2001 dated 15/11/2007 also states that only projects with IRR exceeding 12% should be posed to Public Investment Board (PIB) for consideration. Thus the benchmark of 12% applicable in 1993 is also valid in 2007. As per sub-step 2b Option III, para 6d of Tool for the Demonstration and Assessment of Additionality ver 5.2, benchmark shall be derived from:

‘Government/official approved benchmark where such benchmarks are used for investment decisions’

In this project, the benchmark of 12% was used by Public Investment Board for approving and recommending the project. Thus the benchmark for the project is taken as 12% which is in line with Tool for Demonstration and Assessment of Additionality, ver 5.2.

The project IRR works out to be 10.14% without CDM revenues which is less than the benchmark of 12%. This shows that project without CDM revenues is not financially viable. The project IRR with CDM revenues works out to be 12.47% which is higher than the benchmark of 12%. The validation team, based on the assessment result by the financial expert engaged, hereby confirms that the underlying assumptions are appropriate and the financial calculations are correct.

Sensitivity was carried out on project cost, power generation, tariff, and operation and maintenance cost. The validation team agrees with these parameters are in line with para 17 of EB 51 annex 58. The results are summarized below.

Parameter	Project IRR values (%)	
	+10%	-10%
Project cost	10.03	10.26
Tariff	11.39	8.84
Generation	11.39	8.84
O&M cost	10.00	10.29



Documents in support for IRR assumptions were not provided earlier and CAR 23 was raised. CAR 23 was closed after supporting documents were provided and IRR was revised. In the webhosted PDD, WACC was shown as benchmark and CAR 22 and CAR 25 was raised. CAR 22 and CAR 25 were closed when WACC was removed as benchmark and actual benchmark which was used by PIB for approving and recommending the project was incorporated in revised PDD.

The project IRR is less than the benchmark. It can be observed that even with increased generation, increased tariff, decreased project cost and decreased operation and maintenance cost the project IRR is below the benchmark of 12%. However with CDM revenues the project IRR works out to be 12.47% which is more than the benchmark. The validation team, based on the assessment result by the financial expert engaged, hereby confirms that the underlying assumptions are appropriate and the financial calculations are correct. Thus the project without CDM revenues is not financially viable.

3.7.4 Barrier analysis (118)

In the webhosted PDD, project participants had demonstrated investment barrier, institutional and regulatory barriers and technological barriers to demonstrate additionality. The validation team was of the opinion that these barriers are not prohibitive and accordingly CAR 27 was raised. The project participants removed investment barrier, institutional and regulatory barriers and technological barriers from the revised PDD and CAR 27 was closed.

3.7.5 Common practice analysis (121)

The region selected for common practice analysis is Himachal Pradesh state. The project activity is located in Himachal Pradesh, and different states have different regulatory regimes in terms of clearances and approvals so projects implemented only in the state of Himachal Pradesh is considered for common practice analysis. Consent to establish for hydro projects is given by respective Pollution Control Boards of the states. Consent to establish for Himachal Pradesh State Environment Protection & Pollution Control Board specifies regarding releasing and maintaining minimum flow immediately downstream of diversion structure of Hydel projects throughout the year at a threshold value of not less than 15% of the minimum inflow observed in the lean seasons into the main river/ water body whereas such requirement is not there for Sikkim state. The validation team agrees with this as Tools for demonstration for assessment of additionality states that projects are considered similar if they take place in comparable environment with respect to regulatory



framework etc. Thus the projects implemented only in the state of Himachal Pradesh is considered for common practice analysis.

Project participants has provided the following key information for common practice analysis –

1. Only run-of-river projects have been considered as the project activity is run-of-the river. Dam based projects reduce the risk of unavailability of water and serve as storage areas, thereby ensuring a continuous supply of water to generate power, hence are not similar to run-of-river hydro power projects which face a higher hydrological risk. This ensures that the comparison is done with projects of similar scale and nature.
2. A comparison is made to similar run-of-the river projects with capacity range varying from -50% of the project capacity and above. There is no cap on the upper limit on capacity. The validation team considers this range as appropriate as it also mentioned in one of the review questions of EB (similar projects assuming a capacity range of $\pm 50\%$) as given in the link provided in PDD (<http://cdm.unfccc.int/Projects/DB/DNV-CUK1218186379.41/Review/3TJH2TJ7RN4X5NST0Q7FFB1EQVMEKT/display>). Also validation team is of the opinion that a range of -50% and above can be considered similar to the project activity.
3. Projects which are under the CDM pipeline are excluded.
4. Projects implemented post the start date of project activity have not been considered.
5. Projects commissioned during the period 2003 and before are excluded from analysis and only project commissioned after 2003 are considered in common practice analysis. Electricity Act came in India in 2003 and CERC tariff regulations were published in 2004. The project participant has defined regulatory regime 2003 and before and after 2003. In the period 2003 and before, tariffs were considered on project to project basis and later on when CERC tariff regulations came into force in 2004, it detailed procedure to compute tariff based on capital cost, plant load factor, depreciation etc. The validation team agrees with this because, the regulatory and tariff policies in India for hydro electric projects vary from state to state and also the regulatory and tariff policy has undergone change after 2003 Therefore, the regulatory environment would be comparable only at the state level



and for investment in the same regulatory regimes (i.e. excluding projects commissioned in 2003 and before).

In the webhosted PDD, region for common practice was not defined and analysis of similar projects was not carried out and CAR 28 was raised. CAR 28 was closed after common practice analysis was revised and region was defined. The similar projects were also analysed in revised PDD.

The project participants identified list of hydroelectric power projects operating in Himachal Pradesh from the website of Himachal Pradesh State Electricity Board. The validation team verified the list from the website of Himachal Pradesh State Electricity Board and found to be correct. The validation team considered the list as appropriate as it from website of Government of Himachal Pradesh body and hence authentic. Total seven projects are stated in the list. Dam based projects like Bhakra project, Naptha Jakhri hydropower project, Dehar (BSL), Pong Dam were excluded from analysis as Dam based projects reduce the risk of unavailability of water and serve as storage areas, thereby ensuring a continuous supply of water to generate power, hence are not similar to run-of-river hydro power projects which face a higher hydrological risk. Chamera I and Chamera II are run-of-the river projects but they also have storage dam. Chamera I was commissioned in 1994 and Chamera II was commissioned in 2003 and thus belong to a different regulatory regime and therefore excluded from analysis. BASPA-II project was also commissioned in 2003 and thus belong to a different regulatory regime. BASPA II is also seeking carbon revues under VCS. Thus BASPA II was also excluded from analysis as it was commissioned in 2003. Thus, there are no projects which are similar to project activity. From the above discussions, it is concluded that similar activities are not widely observed and commonly carried out and hence not a common practice in the region.

The validation team hereby confirms that the proposed CDM project activity is not common practice.



This in line with the additionality tool, the project participants has demonstrated additionality by investment analysis and common practice analysis. The project IRR without CDM revenues is less than the benchmark. It can be observed that even with increased generation, increased tariff, decreased project cost and decreased operation and maintenance cost the project IRR is below the benchmark of 12%. However with CDM revenues the project IRR works out to be 12.47% which is more than the benchmark. Thus, the project without CDM revenues is not financially viable. Also as demonstrated above, the project is not a common practice in the region. Thus, the validation team is of the opinion that the project is additional.

The validation team therefore is of the opinion that the project activity is proven to be additional.

3.8 Monitoring plan (124)

The Project uses the approved consolidated monitoring methodology ACM0002 ver 12.1.0 (Ref 51). Refer discussions on the applicability of the methodology at section 3.6.1 above.

Validation team considers the monitoring plan to be complying with the requirements of the methodology. The reasons are as follows –

1. In line with the methodology, project participant has included monitoring of $EG_{facility,y}$, which is the net electricity supplied by project activity to grid. Project participant has also included monitoring of TEG_y which is the Total electricity produced by the project activity, which includes electricity supplied to the grid and the electricity supplied to internal loads. Net electricity refers to total electricity produced minus electricity supplied for internal loads.
2. $EF_{grid,CM,y}$ is fixed ex-ante which is in line with Tools to calculate emission factor for an electricity system.
3. Project participant has provided for electronic archiving of all the monitored data. There will be 100% data capture by meters. This is stated in the PDD.
4. Project participant has provided for keeping the data for 2 years after the end of the last crediting period or the last issuance of CER whichever is later.
5. Project participant has included monitoring of total diesel consumed in DG sets for calculating project emissions. NCV diesel and EF_{CO_2} diesel will be taken from IPCC default values which is in line with Tools to calculate project or leakage CO_2 emissions from fossil fuel combustion.



6. Quantity of SF₆ loss during the year will be measured. SF₆ will be stored in Gas handling system at the project site and will be used to top up the circuit breaker compartments in event of pressure drop inside. The quantity of SF₆ thus filled into the system shall be digital measured in the gas handling system.
7. The monitoring plan includes requirements for calibration. The main meter, check meter and auxiliary meters will be calibrated annually.
8. The net electricity exported to grid will be cross-checked with records of sold electricity as required by methodology.
9. The monitoring frequency for EG_{facility, y} and TEG_y matches with that of the methodology, viz. continuous measurement and monthly recording.
10. Under section B.7.2 of the PDD, project participant has provided additional procedures to deal with data uncertainty etc. In case of failure of main meter, readings will be taken from check meters.

The project activity is under construction. During the site visit, the validation team interacted with the concerned officials at the site and the monitoring system proposed to be implemented was explained by concerned officials of project participant (SJVNL). The electricity generated will be monitored by each of the energy meters installed at the six turbine generators. This will record the gross energy. Four transmission lines from the outgoing feeder will supply power to the substation at Nalagarh. A main meter and check meter will be installed on each of the four transmission lines. The power from the substation will be supplied to National Regional Load Despatch Centre (NRLDC) and finally to the NEWNE Grid. The reading at the meters on the transmission lines will record the electricity exported to the grid and these readings will be used to calculate emission reductions.

Monitoring plan was not correctly described in the PDD and it was not complete. Accordingly CAR 29 was raised. Monitoring plan was revised and complete details were added and CAR 29 was then closed. Validation team confirms that the description now correctly represents the metering system available at the project activity sites.

Based on the interactions with project participant during the site visit regarding monitoring aspects, the validation team therefore is of the opinion that the project participant (SJVNL) is capable of implementing the monitoring plan in the context of the project activity. The project participant is also operating Naptha Jakhri Hydroelectric project which also supplies electricity to NEWNE grid.



The validation team hereby confirms that the project participants will be able to implement the monitoring plan. The validation team hereby confirms that the monitoring plan complies with the requirements of the methodology.

3.9 Sustainable development (127)

The project participant has described contribution to sustainable developed as per four indicators of sustainable development stipulated by Ministry of Environment & Forests (DNA for India). The validation team is of the opinion that the description is adequate as the project will lead to sustainable development through employment generation, generation of clean energy and reducing the electricity supply-demand gap. The project provides employment to local people as was confirmed by meeting with stakeholders during site visit.

The host Party's DNA (India) confirmed the contribution of the project to the sustainable development in India. Please refer to section 3.1 of this report. Project participants (SJVNL) provided copy of this letter (Letter No: 4/12/2009-CCC dated 17th Feb 2010) to the validation team. The validation team confirmed the authenticity of the approval from the website of DNA of India*. The website confirms approval by DNA under project ID no. 1585-09. The letter of approval of DNA of India was provided by project participant (SJVNL) to the validation team. The letter of approval of DNA of India clearly states that India has ratified the Kyoto Protocol and the approval is for voluntary participation in CDM project activity. Also, the letter of approval of DNA of India states and confirms that project activity contributes to sustainable development in India. The letter of approval of DNA of India states the precise proposed CDM project activity title in the PDD being submitted for registration.

3.10 Local stakeholder consultation (130)

The steps taken to assess the adequacy of the local stakeholder consultation are described below.

Local stakeholder consultation meeting to discuss stakeholder concerns on the proposed Clean Development Mechanism (CDM) project – Hydro electric power project by SJVNL in Himachal Pradesh was held on 26th Oct 2005. The meeting was public hearing carried out for the project. The stakeholder meeting was held at 11 AM on 26th Oct 2005 at Satluj Jal Vidyut Nigam Ltd Guest house in village Bael, Tehsil Nirmund, District Kullu, Himachal Pradesh and a stakeholder meeting was held at 3 PM on

* http://cdmindia.nic.in/cdm_india.htm



26th Oct 2005 near Kunni Khad Bridge in village Chatti, Tehsil Nirmund, District Kullu, Himachal Pradesh. Public notices were put in the local newspaper on 22nd Sept 2005 and letters were also sent (Ref 20, Ref 23).

The records related to the stakeholder consultation viz. list of participants, minutes of meeting were provided by the project participants. Project participant has provided sufficient and transparent information on the process of local stakeholder consultation in the PDD. The information indicates that project participant provided sufficient time [more than a month] to stakeholders for providing comments.

Validation team interviewed a few of the local stakeholders during site visit. Three concerns were raised by the stakeholders which were raised as CAR 30. The issues raised by stakeholders were that there is high level of particulate pollution due to movement of vehicles and this is resulting in damage to crops and cracks have developed in houses due to blasting activities being carried out. The stakeholders informed that water supply sources have dried up.

Project participant has provided the reply that contractors sprinkle water on the roads to minimise dust. The validation team also observed during site visit that water was being sprinkled on the roads. The project participant also provided copy of letter written to Government of Himachal Pradesh (Ref 31) which mentioned that funds (Rs 20 million) were already released to Himachal Pradesh Public Works Department for widening of existing road from Wazir Bowri to village Bael. The project participant informed that improvement in road will reduce dust. The project participant also got a study carried out by Agricultural university, Palampur to assess damage to crops. The validation team reviewed the study and observed that the study mentioned that prima facie, dust raised by construction operations did not cause damage to crops and it was reported that level of suspended particulate mater was much less than the prescribed standard at residential colony Bayal. Validation team is of the opinion that sprinkling measures taken would reduce dust and funds have been provided for widening for roads. Thus the validation team is of the opinion that the concern of stakeholders regarding dust by project activity is appropriately addressed by project participant.

Project participant got a study carried out by Central Institute of Mining and Fuel Research (Ref 32) on effects of vibrations due to blasting. The validation team reviewed the study report and observed that the study concluded that blast induced vibrations, measured at locations specifically selected by the neighbours of the project, were safe and insignificant from the point of view of structural damage. Thus the study shows that the vibration due to blasting does not cause damage to houses.



As per the letter written to Government of Himachal Pradesh (Ref 31) (copy of the same was provided to validation team), project participant has already spent Rs 7.8 million on drinking water supply scheme/restoration of dried up water resources and funds worth Rs 10 million have been provided to District Collector (DC), Kullu. The validation team is of the opinion that measures taken by project participant to address the concern of stakeholders regarding drying up of water resources are appropriate

As explained above, the validation team is of the opinion that concerns of stakeholders have been appropriately addressed by the project participant and hence CAR 30 was closed.

In addition project participant has established Project Information centre (PIC) for project affected families. The validation team visited the Public Information centre during the site visit. The project participant has also prepared Resettlement and Rehabilitation scheme for project affected families. A copy of the same was provided to the validation team. A meeting regarding this was also held with project affected families on 30th March 2007 at village Bael. A copy of the minutes of this meeting was also provided to validation team.

The project participant is also implementing community development scheme such as providing mobile health centre, sanitation facilities, street lighting, providing employment etc as detailed in Resettlement and Rehabilitation scheme.

The validation team is of the opinion that comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited. The summary of the comments received as provided in the PDD is complete and the project participants have taken due account of any comments received and have described this process in the PDD. The validation team interacted with few stakeholders during the site visit and reviewed the supporting documents such as minutes of meeting, study reports and other documents as stated above.

As explained above, the validation team is of the opinion that the project participant has appropriately addressed concerns of stakeholders and they have implemented necessary and appropriate measures. The stakeholders also confirmed the process of invitation as described in the PDD. The validation team hereby confirms that the process of local stakeholder consultation is observed to be adequate.



3.11 Environmental impacts (133)

The project participant have undertaken an analysis of environmental impacts as required by the host Party in India, and environmental impact assessment in accordance with procedures as required by the host Party in India.

According to Indian regulation, large scale hydroelectric projects require Environmental Impact Assessment (EIA) study to be carried out. The Ministry of Environment and Forests (MoEF), Government of India notification of September 2006 states that any project developer in India needs to file an application to the Ministry of Environment and Forests (including a public hearing and an EIA) in case the proposed industry or project is listed in a schedule (2006 notification). Thus project participant had got the EIA study carried out. Environmental Clearance was obtained from Ministry of Environment & Forests (Ref 25) by project participant.

The project participant obtained mainly following approvals for the project activity. Copies of these approvals were provided to the validation team by project participant.

- Environmental Clearance from the Ministry of Environment & Forests, Govt. of India
- Approval for Diversion of Forest Land accorded by Ministry of Environment & Forests, Government of India
- Consent to establish from Himachal Pradesh State Environment Protection and Pollution Control Board (HP SPCB)
- No-objection certificate from the Archaeological Survey of India, Govt of India

The project participants have undertaken analysis of environmental impacts mainly with respect to air environment, water environment, land environment and socio-economic environment. Project activity meets the EIA requirements of Ministry of Environment & Forests, Govt of India. An Environmental Management Plan (EMP) has been prepared to mitigate the identified impacts of the project activity. Environmental Management Plan includes various measures as detailed in PDD to mitigate impacts of project activity.

As explained above, the validation team is of the opinion that environmental impacts due to project activity are sufficiently addressed in Environmental Management Plan.



4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the modalities for the Validation of CDM projects, the DOE shall make publicly available the project design document and receive, within 30 days; comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available.

Bureau Veritas Certification published the project documents on the UNFCCC CDM website (<http://cdm.unfccc.int>) and invited comments by Parties, stakeholders and non-governmental organizations. The PDD using methodology ACM 0002 was webhosted on the UNFCCC for global stakeholders comments as per CDM requirements. The project was webhosted from 23 May 2009 to 21 June 2009. Comments were received from 1 person. The project participant provided response to these comments. Validation team took due account of these comments and the respective responses while making the validation opinion. The details of the comments received, responses by the project participant/s and the explanation of how due account of these is taken by the validation team are attached as Appendix B with this validation report. The comments were regarding requirement of CDM for viability of project and regarding barriers mentioned in webhosted PDD. Also comments were made regarding the revised cost and revised design energy of the project etc. All the comments are detailed in Appendix B. The project participant provided responses to these comments. CDM being a decisive factor is detailed in section 3.7.2 of the report. During the course of validation, barriers were removed from the revised PDD. The costs were revised at March 2006 price levels and design energy was revised in view of heavy siltation resulting in shut-down as detailed in section 3.5 above. The validation team is of the opinion that project participant responses to Global stakeholder comments are adequate. The detailed response of project participant and explanation of how due account is taken is detailed in Appendix B. Thus the validation team is of the opinion that the comments have been appropriately addressed.

5 VALIDATION OPINION

Bureau Veritas Certification has performed a validation of the Hydro electric power project by SJVNL in Himachal Pradesh Project in India. The validation was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.



The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides investment analysis and common practice analysis to determine that the project activity itself is not the baseline scenario.

By synthetic description of the project, the project is likely to result in reductions of GHG emissions partially. An analysis of investment analysis and common practice analysis demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation (version 7) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria. Bureau Veritas Certification thus requests registration of 'Hydro electric power project by SJVNL in Himachal Pradesh' as CDM project activity.



6 REFERENCES

Category 1 Documents:

Documents that relate directly to the GHG components of the project.

(Ref 1)	Project Design Document version 1 dated 03/12/2008
(Ref 2)	Project Design Document version 7 dated 22/02/2011
(Ref 3)	Letter from Ministry of Power Government of India to project participant(SJVNL) Ref no: 13/1/2006-H-II dated 25/1/2007 regarding approval of the project (communicating CCEA approval)
(Ref 4)	Letter from Ministry of Power Ref. No 13/1/2006-H-II dated 8/08/2006 informing minutes of meeting of PIB held on 27/07/2006
(Ref 5)	Letter from Central Electricity Authority Ref No 2/HP/27/05-PAC/1161-88 dated 16/12/2005 to SJVNL informing concurrence to the project activity
(Ref 6)	Memorandum of Public Investment Board on Cost Estimate of Rampur Hydroelectric project dated 22 nd May 2006
(Ref 7)	Agreement between Government of Himachal Pradesh and Satluj Jal Vidyut Nigam Ltd for execution of Rampur Hydroelectric project dated 20/10/2004
(Ref 8)	Extract of minutes of 152 nd Meeting of the Board of Directors of Satluj Jal Vidyut Nigam Ltd held on 2 nd August 2006
(Ref 9)	Detailed Project Report for the project activity dated May 2005
(Ref 10)	Host Country Approval letter by Ministry of Environment & Forests, Govt of India Ref no 4/12/2009-CCC dated 17/02/2010
(Ref 11)	Letter of Intent between The World Bank and Satluj Jal Vidyut Nigam Ltd dated 13/03/2007
(Ref 12)	Appointment of Emergent Ventures India Pvt Ltd as CDM consultant dated 13/08/2007 by The World Bank
(Ref 13)	Letter of Acceptance from SJVNL to M/s Patel gammon JV Ref no SJVN/Contract/04/RHEP-277-92 dated 01/02/2007
(Ref 14)	Letter by SJVNL to M/s Bharat Heavy Electricals Ltd Ref SJVN/ECD/RHEP/08-2023 dated 16/09/2008 regarding award of contracts for all services i.e. Port Handling and custom clearance of imported goods, loading, inland transportation for delivery at site etc and contract agreement with BHEL.
(Ref 15)	Declaration from Satluj Jal Vidyut Nigam Ltd regarding latest approved cost, no loan taken in previous three years etc Ref No: CC/CP/CDM/2010-3368 dated 16/02/2010
(Ref 16)	Declaration from Chairman and Managing Director regarding consideration of carbon benefits by CCEA etc dated 07/05/2010.
(Ref 17)	Letter from SJVNL to The World bank vide which Project Idea Note was provided Ref no SJVN/CC/CP/WB/2006-5903 dated 20/02/2006
(Ref 18)	Proceedings of Public Hearing held on 26/10/2005 for the project by Himachal Pradesh State Environment Protection and Pollution Control Board including list of people who attended the public hearing (stakeholder meeting)
(Ref 19)	Letter from Dept of MPP and Power to SJVNL regarding Local Area



	Development Works dated 31/0/2009
(Ref 20)	Letters sent by Himachal Pradesh State Environment Protection and Pollution Control Boards to Sub-divisional magistrate, Anni, Dist Kullu, Sub-divisional magistrate, Rampur, Dist Shimla, Tehsildar, Nirmund, Dist Kullu for invitation for the meeting dated 20/09/2005
(Ref 21)	Minutes of meeting with project affected families regarding resettlement action plan held on 30/03/2007
(Ref 22)	Resettlement and rehabilitation scheme for project affected families by Satluj Jal Vidyut Nigam Ltd
(Ref 23)	Letters sent by Himachal Pradesh State Environment Protection and Pollution Control Boards to Chairman Panchayat Samiti, Nirmund, Chairman, Panchayat Samiti, Rampur for invitation for the meeting dated 20/09/2005
(Ref 24)	Copy of Public Notice for stakeholder meeting in English and Hindi published in newspapers
(Ref 25)	Environment Clearance from Ministry of Environment & Forests Ref No J-12011/94/2005-IAI dated 31/03/2006
(Ref 26)	No Objection certificate for project activity from Archeological Survey of India Ref no 8/6/2007-EE dated 13/12/2007
(Ref 27)	OM No I(4)PF II 84 dt 27/01/1993 regarding Benchmark for approval by Public Investment Board
(Ref 28)	Guidelines for formulation, appraisal and approval of Government Plan funded projects/schemes to be made effective over the duration of XI plan Ref no 1(3)/PF.II/2001 dated 15/11/2007
(Ref 29)	Diversion of forest land approval letter by Ministry of Environment & Forests, Govt of India dated 07/04/2006
(Ref 30)	Minutes of meeting of 118 th meeting of commercial committee Ref NREB/SE(C)/118-CC/05 / dated May 2005
(Ref 31)	Letter by SJVNL to Principle Secretary (Power), Govt of Himachal Pradesh regarding exemption from Local Area Development Committee provision Ref no CCR&R/02/2009/1282-84 dated 07/07/2009
(Ref 32)	Report on Study and advise to evolve optimum blasting pattern to contain ground vibration within safe limit by Central Institute of Mining & Fuel Research dated June 2009
(Ref 33)	Report on study undertaken to assess damage to crops due to project activity by Agricultural University, Palampur
(Ref 34)	Central Electricity Regulatory Commission regulations dated 26/03/2004 (applicable from 2004 to 2009)
(Ref 35)	Consent to establish for project activity by Himachal Pradesh State Environment Protection & Pollution Control Board dated 13/12/2006
(Ref 36)	Loan agreement between SJVNL and The World bank dated 15/01/2008
(Ref 37)	Letter of SJVNL to Central Electricity Authority vide which DPR was submitted dated 31/05/2005
(Ref 38)	Annual Report of Satluj Jal Vidyut Nigam Ltd for 2005-06, 2006-07 and 2007-08
(Ref 39)	Project Appraisal document of the World bank on proposed loan to SJVNL for the project activity dated 15/08/2007



(Ref 40)	Article of Association and Memorandum of Association of Satluj Jal Vidyut Nigam Ltd
(Ref 41)	Agenda for the Board meeting of Satluj Jal Vidyut Nigam Ltd
(Ref 42)	Draft CCEA Note given by SJVNL to Ministry of Power Ref No: SJVN/CC/CP/RHEP/2006-243 dated 17/08/2006
(Ref 43)	Letter by The World Bank to Ministry of Power dated 22/02/2006 regarding interest of SJVNL in exploring carbon revenues
(Ref 44)	Letter by SJVNL to The World bank requesting for meeting regarding carbon credits for the project activity Ref no CC/CP/CDM/2006-4823 dated 17/10/2006
(Ref 45)	Letter by The World Bank to SJVNL dated 27/10/2006 regarding meeting regarding CDM for the project activity
(Ref 46)	CER excel spreadsheet
(Ref 47)	IRR excel spreadsheet (including excel spreadsheets for sensitivity)
(Ref 48)	Letter from Sushil Budhia Associates for IRR Ref no MG-449/007/2010-2011 dated 18/10/2010
(Ref 49)	Compendium of Important Orders/Circulars regarding formulation, appraisal, and approval of Plan schemes/projects (http://finmin.nic.in/the_ministry/dept_expenditure/plan_finance2/CompofImpCirc.pdf)

Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents.

(Ref 50)	Guidelines for completing the Project Design Document (CDM-PDD) and the Proposed New Baseline and Monitoring Methodologies (CDM-NM) ver 7, EB 41, Annex 12.
(Ref 51)	ACM0002 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources, version 12.1.0
(Ref 52)	Additionality tool - Tool for the demonstration and assessment of additionality, version 05.2, EB 39, Annex 10.
(Ref 53)	Tool to calculate emission factor for an electricity system ver 2
(Ref 54)	CEA CO2 baseline database for Indian power sector version 4 dated Oct 2008
(Ref 55)	Guidelines on the assessment of investment analysis ver 3.1, EB 51 Annex 58
(Ref 56)	Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion" (Version 02), EB 41, Annex 11
(Ref 57)	EIA Notification (S.O 1533) dated 14 th September 2006
(Ref 58)	Guidelines for formulation of detailed project reports for hydroelectric schemes, their acceptance and examination for concurrence of central Electricity Authority dated Jan 2007
(Ref 59)	Environment Assessment and management plan for Rampur hydroelectric project, Final report dated July 2007.



(Ref 60)	UNFCCC weblink as reference in common practice http://cdm.unfccc.int/Projects/DB/DNV-CUK1218186379.41/Review/3TJH2TJ7RN4X5NST0Q7FFB1EQVMEKT/display
(Ref 61)	Executive Summary of sustainable Community Development program for the project activity
(Ref 62)	Environmental Assessment & Management Plan of Satluj Jal Vidyut Nigam Ltd, Final report dated July 2007.
(Ref 63)	Letter of Approval from Swedish Energy Agency dated 24 th Feb 2011.
(Ref 64)	Letter of Intent between International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2 and Satluj Jal Vidyut Nigam Ltd dated 5th Feb 2010
(Ref 65)	E-mail of Swedish Energy Agency to validation team regarding Letter of Approval
(Ref 66)	Request for letter of Approval for participation in CDM project activity by International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2 to Swedish Energy Agency dated 23 rd Feb 2011.

Persons interviewed:

List persons interviewed during the validation or persons that contributed with other information that are not included in the documents listed above.

1.	Mr H.K. Sharma, Chairman & Managing Director, Satluj Jal Vidyut Nigam Ltd
2.	Mr H.B. Sahay, General Manager (Corporate Planning), Satluj Jal Vidyut Nigam Ltd
3.	Mr Anil Gupta, AGM, Satluj Jal Vidyut Nigam Ltd
4.	Mr Arvind Mahajan, DGM (Env.) Satluj Jal Vidyut Nigam Ltd
5.	Mr Suresh Thakur, DGM (Electrical), Satluj Jal Vidyut Nigam Ltd
6.	Ms Sujatha Ramasamy, Senior Consultant, Emergent Ventures India Pvt Ltd
7.	Ms Subuddhi Banthia, Consultant, Emergent Ventures India Pvt Ltd
8.	Ms Nuyi Tao, The World Bank, Washington
9.	Mr Rohit Mittal, Financial Analyst, The World Bank, Delhi office
10.	Ms Santhosh Kumar, Local stakeholder
11.	Mr Hiran Singh Verma, Local Stakeholder
12.	Mr Pal Ram, Local Stakeholder
13.	Mr Biju Ram, Local Stakeholder
14.	Mr Pramod Kumar, Local Stakeholder
15.	Mr Moti Ram Kashyap, Local Stakeholder
16.	Mr Man Das, Local Stakeholder



7 CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

H B Muralidhar: (Team Leader)

Lead auditor in Bureau Veritas Certification for Environment Management System, Quality Management System and Occupational Health and Safety Management System. Graduate in Electrical Engineering with 25 years of experience power generation and distribution related fields as well as in management system auditing. He is the Lead auditor for Environmental Management System, Quality Management system and Occupational Health and Safety Management System. He has undergone intensive training on Clean Development Mechanism. He is the technical expert & conducted Validation / Verification for more than 50 CDM Projects

Naresh Badhwar (Team Member)

Graduate in Civil Engineering from IIT Bombay and Post graduate from Michigan Technological University, USA (Major: Environmental Engineering) and MBA (PT), Finance from Faculty of Management Studies, Delhi. He has around 12 years of experience in environmental regulatory organization, consultancy etc. He has undergone intensive training on Clean Development Mechanism and Environment Management Systems. He is involved in validation of more than 10 CDM projects.

Sushil Budhia Associates (Team Member)

Services from Sushil Budhia Associates were delivered by Mr. Sushil Budhia and Ms. Usha Gopalan who are both Chartered Accountants. Mr. Sushil Budhia has been practicing as Chartered Accountant for 25 years and he has very wide experience on project finance, taxation and financial auditing. Ms Usha Gopalan has over 15 years of experience in Project finance, taxation and auditing. Mr. Sushil Budhia and Ms. Usha Gopalan have undergone training on Clean Development Mechanism They have conducted verification of financial indicators like IRR for more than 70 CDM projects.

Sanjay S. Patankar (Internal Technical Reviewer)

Post Graduate in Mechanical engineering with over 20 years of experience in engineering manufacturing line covering various functions like enterprise management, product design, engineering, tool & die design, improvements in the production shop , quality assurance & control and systems planning and implementation, including ISO 9001 based quality management systems. Working for the last 2 years in Bureau Veritas Certification (India) Pvt. Ltd. as Lead Auditor for ISO 9001, 14001 and OHSAS 18001 standards/specifications. Has undergone training related to Clean Development Mechanism and he is involved in validation and verifications of more than 15 CDM projects.



APPENDIX A: COMPANY CDM PROJECT VALIDATION PROTOCOL

Table 1 Validation requirements based on the Clean Development Mechanism Validation and Verification Manual (Version 01.2) and methodology ACM0002 (Version 12.1) – “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
1. Approval			INDIA	SPAIN		
a. Have all Parties involved approved the project activity?	VVM	44	DNA approval is to be provided	DNA approval is to be provided. Application for DNA approval is to be provided for International Bank for Reconstruction and Development (The World Bank) as trustee of Spanish carbon fund.	CL 1	OK
b. Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval? (If yes, provide the reference of the letter of approval, any supporting documentation, and specify if the letter was received from the project participatn or directly from the DNA)	VVM	45	DNA approval is to be provided. Refer 1.a above	DNA approval is to be provided. Refer 1.a above	CL 1	OK
c. Does the letter of approval from DNA of each Party involved:	VVM	45	DNA approval is to be provided	DNA approval is to be provided. Refer 1.a	CL 1	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			above		
i. confirm that the Party is a Party of the Kyoto Protocol?	VVM	45. a	DNA approval is to be provided	DNA approval is to be provided. Refer 1.a above	CL 1 OK
ii. confirm that participation is voluntary?	VVM	45. b	DNA approval is to be provided	DNA approval is to be provided. Refer 1.a above	CL 1 OK
iii. confirm that, in the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country?	VVM	45. c	DNA approval is to be provided. Refer 1.a above	DNA approval is to be provided. Refer 1.a above	CL 1 OK
iv. Refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	VVM	45. d	DNA approval is to be provided. Refer 1.a above	DNA approval is to be provided. Refer 1.a above	CL 1 OK
d. Is(are) the letter(s) of approval unconditional with respect to (i) to (iv) above?	VVM	46	DNA approval is to be provided. Refer 1.a above	DNA approval is to be provided. Refer 1.a above	CL 1 OK
e. Has(ve) the letter(s) of approval been issued by the respective Party's designated national authority (DNA) and is valid for the CDM project activity under validation?	VVM	47	DNA approval is to be provided. Refer 1.a above	DNA approval is to be provided. Refer 1.a above	CL 1 OK
f. Is there doubt with respect to the authenticity of the letter of approval?	VVM	48	DNA approval is to be provided. Refer 1.a above	DNA approval is to be provided. Refer 1.a above	CL 1 OK
g. If yes, was verified with the DNA that the letter of approval is authentic?	VVM	48	DNA approval is to be provided. Refer 1.a above	DNA approval is to be provided. Refer 1.a above	CL 1 OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
2. Participation			Satluj Jal Vidyut Nigam Limited	International Bank for Reconstruction and Development ("World Bank") as Trustee of the Spanish Carbon Fund		
a. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	The PP name is given as Satluj Jal Vidyut Nigam Limited (SJVNL)	The PP name is given as International Bank for Reconstruction and Development ("World Bank") as Trustee of the Spanish Carbon Fund	OK	OK
b. Has the participation of the project participants in the project activity been approved by a Party to the Kyoto Protocol?	VVM	51	Refer 1.a above	Refer 1.a above	-	-
c. Are the project participants listed in tabular form in section A.3 of the PDD?	VVM	52	Yes, PP are listed in tabular form in section A.3	Yes, PP are listed in tabular form in section A.3	OK	OK
d. Is the information in section A.3 consistent with the contact details provided in annex 1 of the PDD?	VVM	52	Yes, information section A.3 is consistent with Annex-I	Yes, information section A.3 is consistent with Annex-I	OK	OK
e. Has the participation of each of the project participants been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation? (Provide reference of the approval	VVM	52	Refer 1.a above	Refer 1.a above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
document for each of the project participants)					
f. Are any entities other than those approved as project participants included in these sections of the PDD?	VVM	52	No other entities are included in these sections	OK	OK
g. Has the approval of participation issued from the relevant DNA?	VVM	53	Refer 1.a above	-	-
h. Is there doubt with respect to (g) above? I	VVM	53	Refer 1.a above	-	-
i. If yes, was verified with the DNA that the approval of participation is valid for the proposed project participant?	VVM	53	Refer 1.a above	-	-
3. Project design document					
a. Is the PDD used as a basis for validation prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website?	VVM	55	Yes, latest template ver 3 in effect as of 28 July 2006 has been used	OK	OK
b. Is the PDD in accordance with the applicable CDM requirements for completing the PDD?	VVM	56	Please refer 3.d and other sections below	-	-
c. In CDM-PDD section A.1 are the following provided?	EB41	Ann 12			
i. Title of project	EB41	Ann 12	Yes, title is provided as Hydro electric power project by SJVNL in Himachal Pradesh	OK	OK
ii. Current version number and date of document	EB41	Ann 12	Yes, version no is 1 dated 03/12/2008	OK	OK
d. In CDM-PDD section A.2 are following provided (max. one page)?	EB41	Ann 12			
i. A brief description of the project activity covering purpose which includes the scenario existing prior to the start or project, present	EB41	Ann 12	Assumptions used in obtaining electricity generation value are not included. Justification for PLF is not provided. PLF given in CEA	CAR 1	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
scenario and baseline scenario			<p>approval is 54.58% and PLF given in PDD is approx 49%. Please explain the same. Maximum generation capacity of turbine generator is not included. Description is not detailed.</p> <p>Project layout, layout of metering system etc are not provided. Details of two DG sets proposed to be installed are not included.</p> <p>Please provide document for pollution load in environmental well being.</p> <p>It is mentioned in section A4.2 of PDD that project activity will result in ~1.42 million tones of CO2 net emissions reductions annually. This figure is not correct.</p>		
ii. Explanation on how the GHG emission reductions are effected	EB41	Ann 12	Yes, explanation is included	OK	OK
iii. The PP's vies on the contribution of project activity to sustainable development	EB41	Ann 12	Details on sustainable development are given. Explanation on technological well being is not detailed.	CAR 2	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	EB41	Ann 12	The project is still under construction. Please refer section 4 below.	-	-
e. In CDM-PDD section A.3 are following provided in the tabular format?	EB41	Ann 12			
i. List of project participants and parties	EB41	Ann 12	Yes, Project participant are listed in A.3	OK	OK
ii. Identification of Host Party	EB41	Ann 12	Yes, host party have been identified	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. Indication whether the Party wishes to be considered as project participant	EB41	Ann 12	Yes, details are given	OK	OK
f. In CDM-PDD section A.4.1 are following provided?	EB41	Ann 12			
i. Technical description, location, host party(ies) and address as required	EB41	Ann 12	Yes, details are provided	OK	OK
ii. Detailed physical location with unique identification of the project activity (eg. Longitude/latitude) – not to exceed one page	EB41	Ann 12	Latitude, longitude are to be provided upto seconds. Map of project activity is not as per actual map at site as discussed during the site visit.	CAR 3	OK
iii. Are there any changes/modifications compared to the webhosted PDD?	EB41	Ann 12	The project is still under construction. Please refer section 4 below	-	-
g. In CDM-PDD section A.4.2 is the list of categories of project activities provided?	EB41	Ann 12	Complete name of category is not provided in section A4.2 of PDD	CAR 4	OK
h. In CDM-PDD section A.4.3 are following provided?	EB41	Ann 12			
i. A description of how environmentally safe and sound technology, and know-how, is transferred to the Host Party(ies)	EB41	Ann 12	Complete details in line with Guidelines for completing PDD needs are not provided (in section A4.3 of PDD) regarding technology and other details as mentioned in guidelines.	CAR 5	OK
ii. Explanation of purpose of project activity with scenario existing prior to the start of project, scope or present activities and the baseline scenario	EB41	Ann 12	Details on purpose, scenario existing prior to project activity, baseline are not included in section A4.3 of PDD.	CAR 6	OK
iii. List and arrangement of the main manufacturing/production technologies, systems and equipments involved	EB41	Ann 12	Please explain whether technical Specifications included (in section A4.3 of PDD) are as per the latest work orders and copy of the same is to be provided.	CAR 7	OK
iv. The emissions sources and GHGs involved	EB41	Ann	Emission sources and GHGs involved are not	CAR 8	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
		12	detailed in section A4.3 of PDD.		
v. Are there any changes/modifications compared to the webhosted PDD?	EB41	Ann 12	The project is still under construction. Please refer section 4 below for comments.	-	-
i. In CDM-PDD section A.4.4 is the estimation of emission reductions provided as requested in a tabular format?	EB41	Ann 12	Emission reductions are given in tabular format. The value of total emission reduction is not correct in section A4.4 of PDD.	CAR 9	OK
j. In CDM-PDD section A.4.5 is Information regarding Public funding provided?	EB41	Ann 12	Yes, details are provided	OK	OK
k. In CDM-PDD section B.1 are following provided?	EB41	Ann 12			
i. The approved methodology and version number	EB41	Ann 12	Yes, details on methodology and version are provided	OK	OK
ii. Any methodologies or tools which the above approved methodology draws upon and their version number	EB41	Ann 12	Yes, details of tools and version no is provided	OK	OK
l. In CDM-PDD section B.2 are following provided?	EB41	Ann 12			
i. Justification of the choice of methodology that the project activity meets each of the applicability conditions	EB41	Ann 12	ACM0002 gives conditions under which methodology is not applicable. These have not been included.	CAR 10	OK
ii. Documentations with references that had been used. This can be provided in Annex 3 instead	EB41	Ann 12	CEA is referred . Please refer section 3, 4 below	-	-
m. In CDM-PDD section B.3 are following provided?	EB41	Ann 12			
i. Description of all sources and gases included in the project boundary in the table	EB41	Ann 12	Sources and gases are detailed in table	OK	OK
ii. A flow diagram of the project boundary physically delineating the project activity	EB41	Ann 12	In line with ACM 0002, the relevant grid has not been included.	CAR 11	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. The flow diagram with all equipments, systems and flows of mass and energy etc	EB41	Ann 12	Refer 3.m.ii above	-	-
n. In CDM-PDD section B.4 are following provided?	EB41	Ann 12			
i. Explanation how the most plausible baseline scenario is identified in accordance with the selected baseline methodology	EB41	Ann 12	ACM 002 prescribes baseline which is given in PDD	OK	OK
ii. Justification of key assumptions and rationales	EB41	Ann 12	Refer 3.n.i above	-	-
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources, etc.)	EB41	Ann 12	Refer 3.n.i above	-	-
iv. A transparent and detailed description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity	EB41	Ann 12	Refer 3.n.i above	-	-
v. Are there any changes/modifications compared to the webhosted PDD?	EB41	Ann 12	The project is still under construction. Please refer section 4 and 5 below for further comments	-	-
o. In CDM-PDD section B.5 are following provided?	EB41	Ann 12			
i. Explanation of how and why this project activity is additional and therefore not the baseline scenario in accordance with the selected baseline methodology	EB41	Ann 12	Additionality tool is used. Refer section 6 below	-	-
ii. Justification of key assumptions and rationales	EB41	Ann 12	Refer 6 below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources etc)	EB41	Ann 12	ACM 0002 prescribes baseline	OK	OK
iv. Evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity, if the starting date of the project activity is before the date of validation	EB41	Ann 12	Refer 6.a below	-	-
p. In CDM-PDD section B.6.1 are following provided?	EB41	Ann 12			
i. Explanation as to how the procedures, in the approved methodology to calculate project emissions, baseline emissions, leakage emissions and emission reductions are applied to the proposed project activity	EB41	Ann 12	Refer 5.e below	-	-
ii. Equations used in calculating emission reductions	EB41	Ann 12	Refer 5.e below	-	-
iii. Explanation and justification for all relevant methodological choices, including different scenarios or cases, options and default values	EB41	Ann 12	Refer 5.e below	-	-
q. In CDM-PDD section B.6.2 are following provided?	EB41	Ann 12			
i. A compilation of information on the data and parameters that are not monitored throughout the crediting period but that are determined only once and thus remains fixed throughout the crediting period AND that are available when validation is undertaken	EB41	Ann 12	EFcm is given, however other parameters i.e. EFbm, EF om are not given in section B6.2 of PDD.	CAR 12	OK
ii. The actual value applied	EB41	Ann	EFcm is given, however other parameters i.e.	CAR 12	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
		12	EFbm, EF om are not given in section B6.2 of PDD.		
iii. Explanation and justification for the choice of the source of data	EB41	Ann 12	Details are given		
iv. Clear and transparent references or additional documentation in Annex 3	EB41	Ann 12	Details are given in Annex-3	OK	OK
v. Where values have been measured, a description of the measurement methods and procedures (e.g. which standards have been used), indicated the responsible person/entity having undertaken the measurement, the date of measurement(s) and the measurement results	EB41	Ann 12	EFcm, EFbm, EFom are taken from CEA database.	OK	OK
r. In CDM-PDD section B.6.3 are following provided?	EB41	Ann 12			
i. A transparent <i>ex ante</i> calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology	EB41	Ann 12	In line with Guidelines for completing PDD, the calculations needs to be more detailed. Please refer 5.e below	-	-
ii. Documentation how each equation is applied, in a manner that enables the reader to reproduce the calculation	EB41	Ann 12	In line with Guidelines for completing PDD, the calculations needs to be more detailed. Please refer 5.e below	-	-
iii. Additional background information and or data in Annex 3, including relevant electronic files (i.e. spreadsheets)	EB41	Ann 12	Information is included in Annex-3	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
s. In CDM-PDD section B.6.4 are the results of the <i>ex ante</i> estimation of emission reductions for all years of the crediting period, provided in a tabular format?	EB41	Ann 12	Yes, results are given in tabular format	OK	OK
t. In CDM-PDD section B.7.1 are following provided?	EB41	Ann 12			
i. Specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity	EB41	Ann 12	As discussed during site visit, parameters proposed to be monitored at site needs to be included. Please refer 7 below	-	-
ii. For each parameter the following below information, using the table provided:	EB41	Ann 12		-	-
a. The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred.	EB41	Ann 12	Electricity generated will be measured and EF will be used as per CEA.	OK	OK
b. Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a specification which accepted industry standards or national or international standards will be applied, which measurement equipment is used, how the measurement is undertaken, which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible	EB41	Ann 12	More details on measurement methods, accuracy of instruments etc needs to be included. Please refer 7 below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
person/entity that should undertake the measurements and what is the measurement interval; (i) A description of the QA/QC procedures (if any) that should be applied; (ii) Where relevant: any further comment. Provide any relevant further background documentation in Annex 4.					
u. In CDM-PDD section B.7.2 are following provided?	EB41	Ann 12			
i. A detailed description of the monitoring plan	EB41	Ann 12	As discussed during site visit, the monitoring plan needs to be detailed. Details of monitoring proposed to be conducted at site by project participant needs to be included. Please refer 7 below	-	-
ii. The operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the project activity	EB41	Ann 12	Operational and management structure proposed to be implemented by project participant needs to be included. Please refer 7 below	-	-
iii. The responsibilities for and institutional arrangements for data collection and archiving	EB41	Ann 12	Responsibilities for and institutional arrangements for data collection and archiving needs to be included in detail in PDD. Please refer 7 below	-	-
iv. Indication that the monitoring plan reflect good monitoring practice appropriate to the type of project activity	EB41	Ann 12	Details on good monitoring practices needs to be included in PDD. Please refer 7 below	-	-
v. Relevant further background information in Annex 4	EB41	Ann 12	No information is given in Annex-4. More details on monitoring plan such as procedures in case	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			of mal-functioning of meters etc. needs to be included. Please refer 7 below		
v. In CDM-PDD section B.8 are following provided?	EB41	Ann 12			
i. Date of completion of the application of the methodology to the project activity study in DD/MM/YYYY	EB41	Ann 12	Yes, details are provided	OK	OK
ii. Contact information of the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity	EB41	Ann 12	Yes, details are provided	OK	OK
iii. Indication if the person/entity is also a project participant listed in Annex 1	EB41	Ann 12	It is not indicated that the entity is also a project participant in section B8 of PDD	CAR 13	OK
w. In CDM-PDD section C.1.1 are following provided?	EB41	Ann 12			
i. The starting date of a CDM project activity, which is the earliest of the date(s) on which the implementation or construction or real action of a project activity begins/has begun (EB33, Para 76/CDM Glossary of terms/EB41, Para 67)	EB41	Ann 12	The start date is not correct. Start date is not as per CDM Glossary of terms.	CAR 14	OK
ii. A description of how this start date has been determined, and a description of the evidence available to support this start date	EB41	Ann 12	The start date is not correct. Start date is not as per CDM Glossary of terms.	CAR 14	OK
iii. If this starting date is earlier than the date of publication of the CDM-PDD for global stakeholder consultation by a DOE, description in Section B.5 contain a of how the benefits of the CDM were seriously considered prior to the starting date (EB41, Para 68).	EB41	Ann 12	Refer 6.a below	-	



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
x. In CDM-PDD section C.1.2 is the expected operational lifetime of the project activity in years and months provided?	EB41	Ann 12	35 years is given as lifetime.	OK	OK
y. In CDM-PDD section C.2 is it stated whether the project activity will use a renewable or a fixed crediting period and is C.2.1 or C.2.2 completed accordingly?	EB41	Ann 12	Fixed crediting period will be used	OK	OK
z. In CDM-PDD section C.2.1 is it indicated that each crediting period shall be at most 7 years and may be renewed at most two times, provided that, for each renewal, a designated operational entity determines and informs the Executive Board that the original project baseline is still valid or has been updated taking account of new data where applicable?	EB41	Ann 12	Not applicable	-	-
aa. In CDM-PDD section C.2.1.1 are dates in the following format: (DD/MM/YYYY) provided?	EB41	Ann 12	Not applicable	-	-
bb. In CDM-PDD section C.2.1.2 is the length of the first crediting period in years and months provided?	EB41	Ann 12	Not applicable	-	-
cc. In CDM-PDD section C.2.2 is the fixed crediting period at most ten (10) years provided?	EB41	Ann 12	Yes it is mentioned	OK	OK
dd. In CDM-PDD section C.2.2.1 are the dates provided in the following format: (DD/MM/YYYY)?	EB41	Ann 12	Yes, date is mentioned as 15/06/2012 or date of registration which ever is later	OK	OK
ee. In CDM-PDD section C.2.2.2 is the length of the crediting period in years and months Provided?	EB41	Ann 12	Yes, details are provided	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ff. In CDM-PDD section D.2 are the conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the Host Party, if environmental impacts are considered significant by the project participants or the Host, provided?	EB41	Ann 12	Yes, EIA has been carried out.	OK	OK
gg. In CDM-PDD section E.1 are the following provided?	EB41	Ann 12			
i. The process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.	EB41	Ann 12	Public hearing was conducted for inviting stakeholders comments.	OK	OK
ii. The project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures.	EB41	Ann 12	It may be clarified whether project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures	CL 2	OK
iii. The local stakeholder process has been completed before submitting the proposed project activity to the DOE for validation.	EB41	Ann 12	Yes, stakeholder consultation was carried out before submitting to DOE for validation	OK	OK
hh. In CDM-PDD section E.2 are following provided?	EB41	Ann 12			
i. Identification of local stakeholders that have made comments	EB41	Ann 12	Stakeholders have been identified in the document on proceedings of public hearing	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			provided.		
ii. A summary of this comments.	EB41	Ann 12	Summary is provided.	OK	OK
ii. In CDM-PDD section E.3 is the explanation of how due account have been taken of comments received from local stakeholders provided?	EB41	Ann 12	Details are provided. Also refer 9 below.	OK	OK
jj. In CDM-PDD Annex 1 are the following provided?	EB41	Ann 12			
i. Contact information of project participants	EB41	Ann 12	Contact information is given	OK	OK
ii. For each organisation listed in section A.3 the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail	EB41	Ann 12	Complete details are not provided in Annex I.	CAR 15	OK
kk. In CDM-PDD Annex 2 is information from Parties included in Annex I on sources of public funding for the project activity which shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties provided?	EB41	Ann 12	Yes, it is mentioned	OK	OK
ll. In CDM-PDD Annex 3 is the background information used in the application of the baseline methodology provided?	EB41	Ann 12	Brief details are given	OK	OK
mm. In CDM-PDD Annex 4 is the background information used in the application of the monitoring methodology provided?	EB41	Ann 12	No details are provided. More details are required as mentioned above in 3.u.5. Please refer 7 below.	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
4. Project description					
a. Does the PDD contain a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation?	VVM	58	<p>Assumptions used in obtaining electricity generation value are not included. Justification for PLF is not provided. PLF given in CEA approval is 54.58% and PLF given in PDD is approx 49%. Please explain the same.</p> <p>Maximum generation capacity of turbine generator is not included. Description is not detailed.</p> <p>Project layout, layout of metering system etc are not provided. Details of two DG sets proposed to be installed are not included.</p> <p>Please provide document for pollution load in environmental well being.</p> <p>It is mentioned in section A4.2 of PDD that project activity will result in ~1.42 million tones of CO2 net emissions reductions annually. This figure is not correct.</p>	CAR 1	OK
b. Is the description of the proposed CDM project activity as contained in the PDD:	VVM	59			
i. sufficiently covering all relevant elements?	VVM	59	Refer 4.a above	-	-
ii. accurate?	VVM	59	Please provide documents for all the technical details provided in description including purchase orders etc.	CL 3	OK
iii. providing the reader with a clear understanding of the nature of the proposed CDM project	VVM	59	Refer 4.a above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
activity?					
iv. Are there any changes/modifications compared to the webhosted PDD?	VVM	59	The project is still under construction. Please refer section below for further comments.	-	-
c. Is the proposed CDM project activity in existing facilities or or utilizing existing equipments?	VVM	60	No it is a new project	OK	OK
d. Is the CDM project activity one of the following types:	VVM	60			
i. Large scale?	VVM	60	It is a large scale project	OK	OK
ii. Non-bundled small scale projects with emission reductions exceeding 15,000 tonnes per year?	VVM	60	Not applicable	-	-
iii. Bundled small scale projects, each with emission reductions not exceeding 15,000 tonnes?	VVM	60	Not applicable	-	-
e. If yes to (c) and (d) above, was a physical site inspection conducted to confirm that the description in the PDD reflects the proposed CDM project activity, unless other means are specified in the methodology?	VVM	60	Site visit was carried out from 8 th to 10th July 2009	OK	OK
f. If yes to (d.iii) above, was the number of physical site visits base on samping?	VVM	60	Not applicable	-	-
g. If yes is the sampling size appropriately justified through statistical analysis?	VVM	60	Not applicable	-	-
h. For all other proposed CDM project activities not referred to in paragraphs 59 – 60, and for other individual proposed small scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year, was a physical site inspection conducted?	VVM	62	Not applicable	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. For all other proposed CDM project activities not referred to in paragraphs 59 – 61, was a physical site inspection conducted?	VVM	62	Site visit was carried out from 8 th to 10th July 2009	OK	OK
j. If no, was it appropriately justified?	VVM	62	Site visit was carried out from 8 th to 10th July 2009	OK	OK
k. Does the proposed CDM project activity involve the alteration of an existing installation or process?	VVM	63	Not applicable	-	-
l. If yes, does the project description clearly state the differences resulting from the project activity compared to the pre-project situation?	VVM	63	Not applicable	-	-
5. Baseline and monitoring methodology					
a. General requirement					
a. Do the the baseline and monitoring methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board?	VVM	65	ACM 0002 prescribes baseline and same is stated in PDD. Please refer 7 below.	OK	OK
b. Is the selected methodology applicable to the project activity?	VVM	66	Refer to (5.b.a) below	-	-
c. Had the selected methodology been correctly applied?	VVM	66	Refer to (5.b) below	-	-
d. Had the selected methodology been correctly applied with respect to project boundary?	VVM	67	Refer to (5.c) below	-	-
e. Had the selected methodology been correctly applied with respect to baseline identification?	VVM	67	Refer to (5.d) below	-	-
f. Had the selected methodology been correctly applied with respect to Algorithms and/or	VVM	67	Refer to (5.e) below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
formulae used to determine emission reductions?					
g. Had the selected methodology been correctly applied with respect to additionality?	VVM	67	Refer 6 below	-	-
i. Has the additionality of the project activity been demonstrated and assessed using the latest version of the "Tool for the demonstration and assessment of additionality" agreed by the Board, which is available on the UNFCCC website?	ACM	000 2 v.1 1	Latest tool for demonstration of additionality is used. Please refer section 6 below	-	-
a. Had the selected methodology been correctly applied with respect to monitoring methodology?	VVM	67	Refer to (7.g), (7.h), (7.i), (7.j) and (7.k) below	-	-
<i>b. Applicability of the selected methodology to the project activity</i>					
a. Is the selected baseline and monitoring methodology, previously approved by the CDM Executive Board, applicable to the project activity including that the used version valid?	VVM	68	Yes, applicability conditions have been demonstrated in PDD. The version used in webhosted PDD is valid.	OK	OK
i. This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plants); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	ACM	000 2 v.1 1	The project activity is a greenfield run-of the river hydro project supplying power to grid	OK	OK
b. Has the DOE applied specific guidance provided by the CDM Executive Board in respect to the applicable approved methodology?	VVM	69	The methodology is applicable for the project activity. Please refer 3 above and sections for various issues identified. There is no specific guidance issued.	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
c. Is the methodology correctly quoted?	VVM	70	Methodology is correctly quoted	OK	OK
d. Are the applicability conditions of the methodology met?	VVM	71	Yes, applicability conditions have been demonstrated in PDD.	OK	OK
i. The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit	ACM	000 2 v.1 1	The project activity is a greenfield run-of the river hydro project supplying power to grid	OK	OK
ii. In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter $EG_{PJ,y}$): the existing plant 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 or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	ACM	000 2 v.1 1	The project is a Greenfield project and it is not a capacity addition, retrofit or replacement project.	OK	OK
iii. In case of hydro power plants, one of the following conditions must apply: - The project activity is implemented in an existing reservoir, with no change in the volume of reservoir; or	ACM	000 2 v.1 1	The project is a run of the rive hydro project and does not involve a reservoir.	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<ul style="list-style-type: none"> - The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m²; or - The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m². 					
iv. The methodology is not applicable to the following conditions. Please confirm <ul style="list-style-type: none"> - Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity - Biomass fired power plants; - Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m². 	ACM	000 2 v.1 1	The project does not involve fuel switching and it is not a biomass fired power plant. It is a run of the river hydro project and it does not involve reservoir.	OK	Ok
v. In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. 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".	ACM	000 2 v.1 1	The project is a Greenfield project and it is not a capacity addition, retrofit or replacement project.	OK	OK
e. Is the project activity expected to result in	VVM	71	No other emissions are anticipated.	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
emissions other than those allowed by the methodology?					
f. Is the choice of the methodology justified?	VVM	71	Methodology is applicable	OK	OK
g. Have the project participants shown that the project activity meets each of the applicability conditions or the approved methodology?	VVM	71	Refer to (5.b.d) above	-	-
h. Have the project participants shown that the project activity meets each of the applicability conditions of any tool or other methodology component referred to the methodology?	VVM	71	Yes, applicability conditions have been demonstrated in PDD.	OK	OK
i. Are each of the applicability conditions of the "Tool to calculate the emission factor for an electricity system" met?	EB 50	Ann 40	Yes, the project calculates combined margin as per tools to calculate emission factor and supplied electricity to grid and tool is applicable. Please refer sections below.	-	-
ii. Are each of the applicability conditions of the "Tool for the demonstration and assessment of additionality" met?	EB 39	Ann 10	Tools to demonstrate additionality is used. Please refer section 6 below.	-	-
iii. Are each of the applicability conditions of the "Combined tool to identify the baseline scenario and demonstrate additionality" met?	EB 28	Ann 14	Not applicable	-	-
iv. Are each of the applicability conditions of the "Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion" met?	EB 41	Ann 11	Tool to calculate project emission from fossil fuel combustion from DG set is used and tool is applicable. Please refer 5.e below	-	-
i. Is the DOE, based on local and sectoral knowledge, aware that comparable information is available from sources other than that used in the PDD?	VVM	71	The project is a run-of-river hydro power project. applicability conditions have been demonstrated in PDD.	OK	OK
j. If yes, was the PDD cross checked against the other sources to confirm that the project activity	VVM	71	Please refer 5.b.i above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
meets the applicability conditions of the methodology? (provide the reference to these choices)					
k. Can a determination regarding the applicability of the selected methodology to the proposed CDM project activity be made?	VVM	72	Yes, the applicability conditions are met	OK	OK
l. If no, clarification of the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	72	Not applicable	-	-
m. If answer to (5.b.c) above is “no”, revision or deviation from the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	73	Not applicable	-	-
n. If yes to (5.b.k) and (5.b.l) above, a request for registration was submitted before the CDM Executive Board has approved the proposed deviation or revision?	VVM	74	Not applicable	-	-
c. Project boundary					
a. Does the PDD correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity?	VVM	78	In line with ACM 0002, the relevant grid has not been included.	CAR 11	OK
i. The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to.	VVM	78	Refer 4.c.a above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b. Is the delineation in the PDD of the project boundary correct and include identification of all locations, processes and equipment including secondary equipment and associated processes such as logistics etc?	VVM	79	Refer 4.c.a above	-	-
c. Does the delineation in the PDD of the project boundary meet the requirements of the selected baseline?	VVM	79	Refer 4.c.a above	-	-
d. Have changes been made to the project boundary in comparison to the webhosted PDD. If yes please comment on the reason for the changes.?	VVM	79	The project is still under construction. The same capacity is stated in contract to BHEL by Satluj Jal Vidyut Nigam Ltd for generators.	OK	OK
e. Have all sources and GHGs required by the methodology been included within the project boundary?	VVM	79	Yes, sources and gases are included	OK	OK
f. Does the methodology allow project participant to choose whether a source or gas is to be included within the project boundary?	VVM	79	Yes, methodology allows to choose regarding sources or gas	OK	OK
g. If yes, have the project participants justified that choice?	VVM	79	PP has ignored CH ₄ as there is no reservoir	OK	OK
h. If yes, is the justification provided reasonable? (provide reference to the supporting documented evidence provided by the project participants)	VVM	79	Project is run-of-river hydro power project hence does not have reservoirs	OK	OK
d. Baseline identification					
a. Does the PDD identify the baseline for the proposed CDM project activity, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed	VVM	81	ACM 0002 prescribes baseline and same is included in PDD	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
CDM project activity?					
b. Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	VVM	82	Yes, baseline is as per ACM 0002	OK	OK
i. If the project activity is the install a new grid-connected renewable power plant/unit (greenfield plant), is the baseline scenario identified appropriately in accordance with the ACM0002 ver.11?	ACM	000 2 v11	Yes, baseline is identified as per ACM 0002	OK	OK
ii. If the project activity is a capacity addition to existing grid-connected renewable power plant/unit, is the baseline scenario identified appropriately in accordance with the ACM0002 ver. 11? And is the point of time at which the generation facility would likely be replaced or retrofitted (DATE Baseline Retrofit) reasonably defined?	ACM	000 2 v11	Not applicable	-	-
iii. If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit, is the baseline scenario identified following the step-wise procedure in accordance with the ACM0002 ver.11?	ACM	000 2 v11	Not applicable as the project is not a retrofit or replacement project	-	-
iv. Are the realistic and credible alternative baseline scenarios for power generation appropriately identified following the Step 1 of the "Combined tool to identify the baseline scenario and demonstrate additionality"? (Step 1)	ACM	000 2 v11	Not applicable	-	-
v. Are the realistic and credible alternative baseline scenarios i.e. P1, P2 and P3 appropriately	ACM	000 2	Not applicable	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
applied Barrier analysis following the Step 2 of the “Combined tool to identify the baseline scenario and demonstrate additionality”? (Step 2)		v11			
vi. If more than one alternative is remaining after Step 2, is Investment analysis appropriately applied (apply an Investment Comparison as per step 3 of the “Combined tool to identify the baseline scenario and demonstrate additionality” or a Benchmark Analysis as per step 2b of the “Tool for the demonstration and assessment of additionality”) (Step 3)	ACM	000 2 v11	Not applicable	-	-
c. Does the selected methodology require use of tools (such as the “Tool for the demonstration and assessment of additionality” and the “Combined tool to identify the baseline scenario and demonstrate additionality”) to establish the baseline scenario?	VVM	82	Methodology prescribes baseline. However, additionality tool is referred in methodology to demonstrate additionality	OK	OK
d. If yes, was the methodology consulted on the application of these tools? (In such cases, the guidance in the methodology shall supersede the tool.)	VVM	82	Not applicable	-	-
e. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVM	83	Methodology prescribes baseline	OK	OK
f. If yes, are all scenarios that are considered by the project participants and are supplementary to those required by the methodology reasonable in the context of the proposed CDM project activity?	VVM	83	Refer 4.d.e above	-	-
g. Has any reasonable alternative scenario been	VVM	83	Refer 4.d.e above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
excluded?					
h. Is the baseline scenario identified reasonably supported by:	VVM	84			
i. Assumptions?	VVM	84	Refer 4.d.e above	-	-
ii. Calculations?	VVM	84	Refer 4.d.e above	-	-
iii. Rationales?	VVM	84	Refer 4.d.e above	-	-
i. Are the documents and sources referred to in the PDD correctly quoted and interpreted?	VVM	84	Refer 4.d.e above	-	-
j. Was the information provided in the PDD cross checked with other verifiable and credible sources, such as local expert opinion, if available? (identify the sources)	VVM	84	Refer 4.d.e above	-	-
k. Have all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed CDM project activity?	VVM	85	Refer 4.d.e above	-	-
l. Have all relevant policies and circumstances been identified and correctly considered in the PDD, in accordance with the guidance by the CDM Executive Board?	VVM	85	National and sectoral policies are not included in PDD.	CAR 16	OK
m. Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM	86	Complete details are not included on description of scenario in absence of project activity in section B4.	CAR 17	OK
e. Algorithms and/or formulae used to determine emission reductions					



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b. Do the steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected baseline and monitoring?	VVM	89	<p>In the calculation of EF, step 5 is not included and in step 4, details of cohorts of power unit is not included in build margin.</p> <p>Ex-ante calculations given in B6.3 of PDD is not detailed in line with Guidelines for completing PDD.</p> <p>Notations as per ACM 0002 are not used.</p> <p>There are two equations mentioned in ACM 0002 for project emissions and only one of these is mentioned in PDD. Please explain the relevance.</p>	CAR 18	OK
c. Have the equations and parameters in the PDD been correctly applied with respect those in the select approved methodology?	VVM	90	Auxilliary consumption has been taken as 0.7% which is not correct. Justification is not included for the value of gross energy generation used. Documents for all values used in calculations needs to be provided.	CAR 19	OK
i. Is EF calculated as per tools to calculate emission factor for an electricity system emissions, leakage and emission reductions.	VVM	90	Yes, EF is taken from CEA database. Refer 5.e.a above	-	-
d. Does the methodology provide for selection between different options for equations or parameters?	VVM	90	Tools to calculate emission factor gives various options for calculating operating margin.	OK	OK
e. If yes, has adequate justification been provided (based on the choice of the baseline scenario,	VVM	90	Refer 5.e.c above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
context of the proposed CDM project activity and other evidence provided)?					
f. If yes, have correct equations and parameters been used, in accordance with the methodology selected?	VVM	90	Refer to 5.e.a and 5.e.b above	-	-
g. Will data and parameters be monitored throughout the crediting period of the proposed CDM project activity?	VVM	91	EFcm, EFbm, EFom is fixed ex-ante and electricity generated will be monitored throughout the crediting period	OK	OK
h. If no, and these data and parameters will remain fixed throughout the crediting period, are all data sources and assumptions:	VVM	91			
i. Appropriate and correct?	VVM	91	Official CEA database has been used	OK	OK
ii. Applicable to the proposed CDM project activity?	VVM	91	CEA database is applicable	OK	OK
iii. Resulting in a conservative estimate of the emission reductions?	VVM	91	CEA database is official Government data	OK	OK
i. Will data and parameters be monitored on implementation and hence become available only after validation of the project activity?	VVM	91	Electricity generated will be monitored	OK	OK
j. If yes, are the estimates provided in the PDD for these data and parameters reasonable?	VVM	91	Justification is required for the value of gross energy generation used. Refer 5.e.b above.	OK	OK
6. Additionality of a project activity					
b. Does the PDD describe how a proposed CDM project activity is additional?	VVM	94	Yes, additionality is described in PDD	OK	OK
c. Were the following steps of the tool to assess additionality used:	EB 39	Ann 10			
i. Identification of alternatives to the project activity?	EB 39	Ann 10	Alternatives are identified. Please refer 6.b below	-	-
ii. Investment analysis to determine that the	EB 39	Ann	Investment analysis is carried out. Please refer	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible?		10	6.c below		
iii. Barriers analysis?	EB 39	Ann 10	Barrier analysis is carried out. Please refer 6.d below	-	-
iv. Common practice analysis?	EB 39	Ann 10	Common practice analysis is carried out. Please refer 6.e below	-	-
d. In step 1 (i) have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 1a: Define alternatives to the project activity	EB 39	Ann 10	Please refer 6.b below	-	-
ii. Sub-step 1b: Consistency with mandatory laws and regulations	EB 39	Ann 10	Please refer 6.b below	-	-
e. Have the following alternatives been included while defining alternatives as per sub-step 1a?	EB 39	Ann 10			
i. (a) The proposed project activity undertaken without being registered as a CDM project activity;	EB 39	Ann 10	Please refer 6.b below	-	-
ii. (b) Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology;	EB 39	Ann 10	Please refer 6.b below	-	-
iii. (c) If applicable, continuation of the current situation (no project activity or other alternatives undertaken).	EB 39	Ann 10	Please refer 6.b below	-	-
f. Has the project participant included the	EB 39	Ann	Please refer 6.b below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
technologies or practices that provide outputs or services with comparable quality, properties and application areas as the proposed CDM project activity and that have been implemented previously or are currently being introduced in the relevant country/region?		10			
g. Has the outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity done correctly? Please briefly mention the outcome.	EB 39	Ann 10	Please refer 6.b below	-	-
h. Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution.?	EB 39	Ann 10	Please refer 6.b below	-	-
i. If an alternative does not comply with all mandatory applicable legislation and regulations, has it been shown that, based on an examination of current practice in the country or region in which the law or regulation applies, those applicable legal or regulatory requirements are systematically not enforced and that noncompliance with those requirements is widespread in the country?	EB 39	Ann 10	Please refer 6.b below	-	-
j. Has the outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB	EB 39	Ann 10	Please refer 6.b below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
decisions on national and/or sectoral policies and regulations done correctly? Please state the outcome.					
k. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	PP has shown both investment analysis and barrier analysis. Please refer 6.c and 6.d below	-	-
l. In step 2, have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 2a: Determine appropriate analysis method;	EB 39	Ann 10	Benchmark analysis is used	OK	OK
ii. Sub-step 2b: Option I. Apply simple cost analysis;	EB 39	Ann 10	Simple cost analysis is not used	OK	OK
iii. Sub-step 2b: Option II. Apply investment comparison analysis;	EB 39	Ann 10	Investment comparison analysis is not used	OK	OK
iv. Sub-step 2b: Option III. Apply benchmark analysis;	EB 39	Ann 10	Benchmark analysis is used	OK	OK
v. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III);	EB 39	Ann 10	IRR has been taken as financial indicator	OK	OK
vi. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III).	EB 39	Ann 10	Sensitivity analysis is shown in PDD. Please refer 6.c below	-	-
m. In sub-step 2a has the determination of appropriate method of analysis done as per the guidance as below?	EB 39	Ann 10			
i. Simple cost analysis if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income (Option I).	EB 39	Ann 10	Simple cost analysis is not used as there are revenues from sale of electricity	OK	OK
ii. Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis	EB 39	Ann 10	Benchmark analysis is used. Please refer 6.c below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
(Option III). Specify option used with justification.					
n. Has the below guideline followed for sub-step 2b Option I. Apply simple cost analysis? Document the costs associated with the CDM project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is less costly than the project activity.	EB 39	Ann 10	Simple cost analysis is not used	OK	OK
o. Has the below guideline followed for sub-step 2b Option II. Apply investment comparison analysis? Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service most suitable for the project type and decision-making context. Please specify	EB 39	Ann 10	Benchmark analysis is used. IRR has been taken as financial indicator. Please refer section 6.c below	-	-
p. Has the below guideline followed for Sub-step 2b: Option III. Apply benchmark analysis?	EB 39	Ann 10			
i. Identify the financial/economic indicator, such as IRR, most suitable for the project type and decision context.	EB 39	Ann 10	IRR has been taken as financial indicator	OK	OK
ii. When applying Option II or Option III, the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Only in the particular case where the project activity can be implemented by the project participant, the	EB 39	Ann 10	Please refer section 6.c below for issues identified on IRR and benchmark.	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
specific financial/economic situation of the company undertaking the project activity can be considered.					
iii. Discount rates and benchmarks shall be derived from: (a) Government bond rates, increased by a suitable risk premium to reflect private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data; (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; (c) A company internal benchmark (weighted average capital cost of the company), only in the particular case referred to above in 2. The project developers shall demonstrate that this benchmark has been consistently used in the past, i.e. that project activities under similar conditions developed by the same company used the same benchmark; (d) Government/official approved benchmark where such benchmarks are used for investment decisions; (e) Any other indicators, if the project participants can demonstrate that the above Options are not applicable and their	EB 39	Ann 10	Please refer 6.c below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
indicator is appropriately justified. Please specify benchmark and justify.					
q. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III)?	EB 39	Ann 10			
i. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal incentives, ODA, etc, where applicable), and, as appropriate, non-market cost and benefits in the case of public investors if this is standard practice for the selection of public investments in the host country.	EB 39	Ann 10	Benchmark analysis has been used. IRR has been taken as financial indicator. Please refer 6.c below for issues identified on IRR.	-	-
ii. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD.	EB 39	Ann 10	Please refer 6.c below for issues identified on investment analysis	-	-
iii. Justify and/or cite assumptions.	EB 39	Ann 10	Please refer 6.c below for issues identified on investment analysis	-	-
iv. In calculating the financial/economic indicator, the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions.	EB 39	Ann 10	Please refer 6.c below for issues identified on investment analysis	-	-
v. Assumptions and input data for the investment	EB 39	Ann	Please refer 6.c below for issues identified on	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated.		10	investment analysis		
vi. Present in the CDM-PDD a clear comparison of the financial indicator for the proposed CDM activity. Please specify details for above.	EB 39	Ann 10	Please refer 6.c below for issues identified on investment analysis	-	-
r. Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II and III)? Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.	EB 39	Ann 10	Please refer 6.c below for issues identified on investment analysis and sensitivity.	-	-
s. Has the outcome of Step 2 clearly mentioned with justification?	EB 39	Ann 10	Please refer 6.c below	-	-
t. In step 3: Barrier analysis have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity;	EB 39	Ann 10	Please refer 6.d below for issues identified on barrier analysis	-	-
ii. Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity).	EB 39	Ann 10	Please refer 6.d below	-	-
u. Has the below guideline followed for Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project?	EB 39	Ann 10			
i. (a) Investment barriers: For alternatives undertaken and operated by private entities: Similar activities have only been implemented	EB 39	Ann 10	Barrier analysis is not adequate. Please refer 6.d below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
with grants or other non-commercial finance terms. No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed CDM project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin.					
ii. (b) Technological barriers: Skilled and/or properly trained labour to operate and maintain the technology is not available in the relevant country/region, which leads to an unacceptably high risk of equipment disrepair and malfunctioning or other underperformance; Lack of infrastructure for implementation and logistics for maintenance of the technology, Risk of technological failure: the process/technology failure risk in the local circumstances is significantly greater than for other technologies that provide services or outputs comparable to those of the proposed CDM project activity, as demonstrated by relevant scientific literature or technology manufacturer information, The particular technology used in the proposed project activity is not available in the relevant region.	EB 39	Ann 10	Barrier analysis is not adequate. Please refer 6.d below	-	-
iii. (c) Barriers due to prevailing practice: The project activity is the "first of its kind".	EB 39	Ann 10	Barriers due to prevailing practice has not been shown in PDD	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iv. (d) Other barriers, preferably specified in the underlying methodology as examples.	EB 39	Ann 10	Please refer 6.d below	-	-
v. Has the outcome from Step 3a clearly mentioned in PDD?	EB 39	Ann 10	Barrier analysis is not adequate. Please refer 6.d below	-	-
w. Has the below guideline followed for Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity)?	EB 39	Ann 10	Barrier analysis is not adequate. Please refer 6.d below	-	-
i. If the identified barriers also affect other alternatives, explain how they are affected less strongly than they affect the proposed CDM project activity. In other words, demonstrate that the identified barriers do not prevent the implementation of at least one of the alternatives. Any alternative that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration.	EB 39	Ann 10	Please refer 6.d below	-	-
ii. Provide transparent and documented evidence, and offer conservative interpretations of this documented evidence, as to how it demonstrates the existence and significance of the identified barriers and whether alternatives are prevented by these barriers.	EB 39	Ann 10	Please refer 6.d below on issues identified on barrier analysis	-	-
iii. The type of evidence to be provided should include at least one of the following: (a) Relevant legislation, regulatory information or industry norms; (b) Relevant (sectoral) studies	EB 39	Ann 10	Please refer 6.d below on issues identified on barrier analysis	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
or surveys (e.g. market surveys, technology studies, etc) undertaken by universities, research institutions, industry associations, companies, bilateral/multilateral institutions, etc; (c) Relevant statistical data from national or international statistics; (d) Documentation of relevant market data (e.g. market prices, tariffs, rules); (e) Written documentation of independent expert judgments from industry, educational institutions (e.g. universities, technical schools, training centres), industry associations and others. Please specify.					
x. Has the outcome from Step 3 clearly mentioned in PDD?	EB 39	Ann 10	Please refer 6.d below on issues identified on barrier analysis	-	-
y. In step 4: Common practise analysis have all the sub-steps as below followed?	EB 39	Ann 10			
i. Sub-step 4a: Analyze other activities similar to the proposed project activity;	EB 39	Ann 10	Please refer 6.e below for issues on common practice analysis	-	-
ii. Sub-step 4b: Discuss any similar Options that are occurring.	EB 39	Ann 10	Please refer 6.e below for issues on common practice analysis	-	-
z. Has the below guideline followed for Sub-step 4a: Analyze other activities similar to the proposed project activity? Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other CDM project activities are not to be included in this analysis. Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to	EB 39	Ann 10	Similar projects have not been identified. Please refer 6.e.c below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
which extent similar activities have already diffused in the relevant region.					
aa. Has the below guideline followed for Sub-step 4b: Discuss any similar Options that are occurring? If similar activities are identified, then it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it financially/economically attractive (e.g., subsidies or other financial flows) and which the proposed project activity cannot use or did not face the barriers to which the proposed project activity is subject. In case similar projects are not accessible, the PDD should include justification about non-accessibility of data/information.	EB 39	Ann 10	Please refer 6.e below for issues on common practice analysis. Common practice analysis is not adequate.	-	-
bb. Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	Common practice analysis is not adequate. Please refer 6.e below	-	-
cc. Has it been proved that the porject is additional?	EB 39	Ann 10	Please refer 6.c, 6.d, 6.e below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
<i>a. Prior consideration of the clean development mechanism</i>					
a. Is the project activity start date prior to the date of publication of the PDD for stakeholder comments?	VVM	98	Project start date is prior to publishing PDD for global stakeholder comments	OK	OK
b. If yes, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	VVM	98	<p>As per PDD, IBRD analysed the project from CDM perspective. Copy of the document is to be provided.</p> <p>As discussed during the site visit, techno-economic approval was given by Central Electricity Authority (CEA) based on Detailed Project Report (DPR). Following is mentioned in DPR</p> <p>'The sale rate of energy determined as Rs 2.01 /kWh in the first year and a levelized tariff of Rs 1.81 /kWh shows that the project is financially viable and economically attractive'</p> <p>In the analysis given in DPR, CDM benefits have not been considered. The project cost and energy generation were revised later on. Please clarify whether sale rate of energy was determined again at revised cost and revised energy generation. The DPR (Chapter 17) mentions that economic and financial evaluation of Rampur H.E. project has been considered as per guidelines issued by Central Electricity</p>	CAR 20	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>Authority (CEA) and norms laid down by the Central Electricity Regulatory Commission (CERC) for Hydro projects. Please provide the guidelines of CEA and norms of CERC which stipulates the procedure for carrying out economic and financial analysis of Hydro projects. Please clarify whether procedure for carrying out financial analysis carried in DPR was also considered by PIB and CCEA since it is as per guidelines of CEA and norms of CERC.</p> <p>The project was approved by Public investment Board (PIB) and subsequently by Cabinet Committee on Economic affairs. The minutes of meeting of PIB states that The World Bank has been supporting GOI for getting carbon credits and this project would be the largest. However, the financial viability analysis that have been considered by PIB and CCEA have not been provided. A copy of these analysis are to be provided. The financial indicator and benchmark considered by PIB and CCEA may kindly be provided.</p> <p>Thus, techno-economic approval was given by CEA without considering CDM benefits. As stated above, copy of financial viability analysis that was considered by PIB and CCEA needs to be provided. As per EB 41, Annex 46, it needs</p>		



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>to be shown that CDM was a decisive factor in decision to proceed with the project activity.</p> <p>Copy of document regarding meeting between Satluj Jal Vidyut Nigam Ltd and The World Bank submitted to Ministry of Power needs to be provided.</p> <p>As discussed during site visit, detailed chronology is not provided including details of discussions between SJVNL and The World Bank etc</p>		
c. Is the start date of the project activity, reported in the PDD, in accordance with the "Glossary of CDM terms", which states that "The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins."?	VVM	99	The start date is not correct. Start date is not as per CDM Glossary of terms.	CAR 14	OK
d. Does the project activity require construction, retrofit or other modifications?	VVM	99	Project activity is a new project activity.	OK	OK
e. If yes, is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	99	Project is not yet commissioned. Please refer 6.a.c above	OK	OK
f. Is it a new project activity (project activities with starting date on or after 02 August 2008) or an existing project activity (project activities with a start date before 02 August 2008)?	VVM	100	It is an activity with start date prior to 02 august 2008	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
g. For a new project, for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the Executive Board before the project activity start date, had the PP informed the Host Party DNA and/or the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status? (Provide reference to such confirmation from Host Party DNA and/or UNFCCC secretariat).	VVM	101	Not applicable	-	-
h. For an existing project activity, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are the following evidences provided:	VVM	102			
i. evidence that must indicate that awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project, including, inter alia:	VVM	102	As discussed during site visit, Satluj Jal Vidyut Nigam Ltd (SJVNL) mentioned that discussions have been held with The World Bank regarding CDM. A copy of all the documents needs to be provided.	CL 4	OK
a. minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participant, to undertake the project as a proposed CDM project activity?	VVM	102	Extract of Board resolution is provided. The Board resolution mentions approval for taking carbon credits. However, as per EB 41, Annex 46, it needs to be shown that CDM was a decisive factor in decision to proceed with the project activity. Also, please clarify whether the project was approved in any Board resolution. If so, please provide copy of that Board resolution.	CAR 21	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation, including, inter alia:	VVM	102	Project is not yet commissioned	OK	OK
a. contract with consultants for CDM/PDD/methodology services?	VVM	102	Contract with Emergent venture has been made. A copy of contract is to be provided	CL 5	OK
b. Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds)?	VVM	102	Agreement with The World bank has been signed for sale of carbon credits. Please refer section 6.a.b above	-	-
c.evidence of agreements or negotiations with a DOE for validation services?	VVM	102	Agreement with DOE has been signed. Please refer section 6.a.b above.	-	-
d.submission of a new methodology to the CDM Executive Board?	VVM	102	No new methodology has been submitted	OK	OK
e.publication in newspaper?	VVM	102	There is no publication in newspaper	OK	OK
f.interviews with DNA?	VVM	102	Please refer section 6.a.b above.	-	-
g.earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	102	Please refer section 6.a.b above	-	-
h.Has the chronology of events including time lines been appropriately captured and explained/detailed in the PDD?	VVM	102	Please refer section 6.a.b above	-	-
b. Identification of alternatives					
a. Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVM	105	Baseline is prescribed by ACM 0002. The project participant has taken the proposed project activity with CDM and Continuation of power generation in existing and new grid connected thermal power stations (baseline) as	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			two alternatives.		
b. If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVM	105	Refer 5.b.a above	-	-
c. Does the list of alternatives given in the PDD ensure that:	VVM	106			
i. the list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity?	VVM	106	Project activity without CDM is taken as an alternative	OK	OK
ii. the list contains all plausible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity?	VVM	106	It may be clarified as to why other alternatives such as solar, wind, biomass etc are not considered as alternatives.	CL 6	OK
iii. the alternatives comply with all applicable and enforced legislation?	VVM	106	Alternatives comply with applicable legislation	OK	OK
c. Investment analysis					
a. Has investment analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM	108	Yes, investment analysis has been used	OK	OK
b. If yes, does the PDD provide evidence that the proposed CDM project activity would not be:	VVM	108			
i. the most economically or financially attractive alternative?	VVM	108	Project IRR for the project activity is calculated	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)?	VVM	108	IRR without CDM is shown to be below the benchmark	OK	OK
c. Was this shown by one of the following approaches?	VVM	109			
i. Demonstrate that the proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity.	VVM	109	Not applicable	-	-
ii. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative.	VVM	109	Financial analysis has been carried out for project activity without CDM.	OK	OK
iii. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	109	IRR without CDM is shown to be below the benchmark	OK	OK
d. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 51	Ann 58	No, calculations have been carried out for lifetime	OK	OK
e. Does the project IRR and equity IRR calculations reflect the period of expected operation of the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair	EB 51	Ann 58	IRR calculations have been carried out for lifetime	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
value of the project activity assets at the end of the assessment period?					
f. Does the IRR calculation include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment?	EB 51	Ann 58	Please refer 6.c.rr below	-	-
g. Do the project participants justify the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period?	EB 51	Ann 58	Please refer 6.c.rr below	-	-
h. Does the cash flow in the final year include a fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	Please refer 6.c.rr below	-	-
i. Has the fair value been calculated in accordance with local accounting regulations where available, or international best practice?	EB 51	Ann 58	Please refer 6.c.rr below	-	-
j. Does the fair value calculations include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets?	EB 51	Ann 58	Please refer 6.c.rr below	-	-
k. Was depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV)?	EB 51	Ann 58	Please refer 6.c.rr below	-	-
l. Has taxation been included as an expense in the IRR/NPV calculation in cases where the	EB 51	Ann 58	Please refer 6.c.rr below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
benchmark or other comparator is intended for post-tax comparisons?					
m. Are the input values used in all investment analysis valid and applicable at the time of the investment decision taken by the project participant?	EB 51	Ann 58	Documents are to be provided for input values. Please refer 6.c.rr below	-	-
n. Is the timing of the investment decision consistent and appropriate with the input values?	EB 51	Ann 58	Documents are to be provided for input values. Please refer 6.c.rr below	-	-
o. Are all the listed input values been consistently applied in all calculations?	EB 51	Ann 58	Please refer 6.c.rr below	-	-
p. Does the investment analysis reflect the economic decision making context at point of the decision to recommence the project in the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM?	EB 51	Ann 58	Not applicable	-	-
q. Have project participants supplied the spreadsheet versions of all investment analysis?	EB 51	Ann 58	Excel spreadsheet has been provided	OK	OK
r. Are all formulas used in this analysis readable and all relevant cells be viewable and unprotected?	EB 51	Ann 58	Formulaes are readable and it is unprotected	OK	OK
s. In cases where the project participant does not wish to make such a spreadsheet available to the public has the PP provided an exact read-only or PDF copy for general publication?	EB 51	Ann 58	Not applicable	-	-
t. In case the PP wishes to black-out certain elements of the publicly available version, is it justifiable?	EB 51	Ann 58	Not applicable	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
u. Was the cost of financing expenditures (i.e. loan repayments and interest) included in the calculation of project IRR?	EB 51	Ann 58	Please refer 6.c.rr below	-	-
v. In the calculation of equity IRR, has only the portion of investment costs which is financed by equity been considered as the net cash outflow?	EB 51	Ann 58	Project IRR has been calculated	OK	OK
w. Has the portion of the investment costs which is financed by debt been considered a cash outflow in the calculation of equity IRR? (this is not allowed)	EB 51	Ann 58	Project IRR has been calculated	OK	OK
x. Was a pre-tax benchmark be applied?	EB 51	Ann 58	Please refer 6.c.bb and 6.c.ww below for issues identified on benchmark	-	-
y. In cases where a post-tax benchmark is applied, is actual interest payable taken into account in the calculation of income tax?	EB 51	Ann 58	Please refer 6.c.bb and 6.c.ww below for issues identified on benchmark	-	-
z. In such situations, was interest calculated according to the prevailing commercial interest rates in the region, preferably by assessing the cost of other debt recently acquired by the project developer and by applying a debt-equity ratio used by the project developer for investments taken in the previous three years?	EB 51	Ann 58	Please refer 6.c.bb and 6.c.ww below for issues identified on benchmark	-	-
aa. In cases where a benchmark approach is used is the applied benchmark appropriate to the type of IRR calculated?	EB 51	Ann 58	Please refer 6.c.bb and 6.c.ww below for issues identified on benchmark	-	-
bb. Has local commercial lending rates or weighted average costs of capital (WACC) selected as appropriate benchmarks for a project IRR?	EB 51	Ann 58	As per discussions during the site visit, the project proponent informed that they have not used WACC for decision making, thus justification for using WACC in PDD may be	CAR 22	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			explained. It was informed by project participant that Public Investment Board (PIB) has its own benchmark for considering projects. Copy of same applicable at the time of decision making is to be provided.		
cc. Has required/expected returns on equity selected as appropriate benchmark for an equity IRR?	EB 51	Ann 58	Equity IRR has not been calculated	OK	OK
dd. In case benchmarks supplied by relevant national authorities selected is it applicable to the project activity and the type of IRR calculation presented?	EB 51	Ann 58	Please refer 6.c.bb above and 6.c.ww below	-	-
ee. In the cases of projects which could be developed by an entity other than the project participant is the benchmark applied based on publicly available data sources which can be clearly validated?	EB 51	Ann 58	Please refer 6.c.bb above and 6.c.ww below for issues identified on benchmark	-	-
ff. Have internal company benchmarks/expected returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital - WACC) been applied in cases where there is only one possible project developer?	EB 51	Ann 58	Internal benchmark has not been used	OK	OK
gg. In such cases, have these values been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region?	EB 51	Ann 58	Not applicable	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
hh. Has a minimum clear evidence of the resolution by the company's Board and/or shareholders been provided to the effect as above?	EB 51	Ann 58	Not applicable	-	-
ii. Has a thorough assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects been conducted?	EB 51	Ann 58	Please refer 6.c.bb above and 6.c.ww below for issues identified on benchmark	-	-
jj. Does the risk premiums applied in the determination of required returns on equity reflect the risk profile of the project activity being assessed, established according to national/international accounting principles? (It is not considered reasonable to apply the rate general stock market returns as a risk premium for project activities that face a different risk profile than an investment in such indices.)	EB 51	Ann 58	Please refer 6.c.bb above and 6.c.ww below for issues identified on benchmark	-	-
kk. Has an investment comparison analysis and not a benchmark analysis used when the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services?	EB 51	Ann 58	Investment comparison analysis has not been used	OK	OK
ll. Have variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues been subjected to reasonable variation (positive and negative) and the results of this variation been	EB 51	Ann 58	Please refer 6.c.vv below	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
presented in the PDD and be reproducible in the associated spreadsheets?					
mm. Have a corrective action been raised for a variable to be included in the sensitivity analysis which constitute less than 20% and have a material impact on the analysis ?	EB 51	Ann 58	Please refer 6.c.vv below	-	-
nn. Is the range of variations selected is reasonable in the project context?	EB 51	Ann 58	Please refer 6.c.vv below	-	-
oo. Dos the variations in the sensitivity analysis at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances?	EB 51	Ann 58	Please refer 6.c.vv below	-	-
pp. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative, is an assessment done of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity?	EB 51	Ann 58	Please refer 6.c.vv below	-	-
qq. Was the plant load factor defined ex-ante in the CDM-PDD according to one of the following options:	EB 48	Ann 11			
i. The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project	EB 48	Ann 11	Please refer 3.d.i above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
activity for implementation approval?					
i. The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company)?	EB 48	Ann 11	There is no third part determination of PLF	OK	OK
rr. Was a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices conducted?	VVM	111	<p>Documents/evidences are to be provided for all the input values used in IRR calculations.</p> <p>Local debt has been considered in IRR calculations. The project proponent has taken loan from The World Bank, thus using local debt in IRR calculations is not correct.</p> <p>As discussed during the site visit, many parameters mentioned in the IRR excel sheet have not been used in calculations. As discussed during the site visit, IRR calculations is not correct. IRR calculations with CDM is not provided.</p>	CAR 23	OK
ss. Were the parameters cross-checked against third-party or publicly available sources, such as invoices or price indices?	VVM	111	Refer 6.c.rr above	-	-
tt. Were feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants reviewed?	VVM	111	Refer 6.c.rr above	-	-
uu. Was the correctness of computations carried out and documented by the project participants assessed?	VVM	111	Refer 6.c.rr above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
vv. Was the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions assessed?	VVM	111	Sensitivity analysis has been carried out. As discussed during the site visit, sensitivity analysis is not presented in a matrix form.	CAR 24	OK
ww. Is the type of benchmark applied is suitable for the type of financial indicator presented and calculations assessed?	VVM	112	<p>In the calculations of WACC, please explain suitability of using beta of Reliance Infrastructure as it not a fully power sector company. It may be explained to why beta of BF utilities has not been considered. The de-levered beta again has to be levered. The tax rate in calculation of WACC is taken as 11.33%. Please explain to why tax rate is not considered as 33.99% .</p> <p>It was informed by project participant that Public Investment Board (PIB) has its own benchmark for considering projects. Copy of same applicable at the time of decision making is to be provided.</p>	CAR 25	OK
xx. Do any risk premiums applied determining the benchmark reflect the risks associated with the project type or activity?	VVM	112	No risk premium has been applied over and above the benchmark	OK	OK
yy. To determine this, was it assessed whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by:	VVM	112			
i. assessing previous investment decisions by the	VVM	112	It was informed by project participant that Public	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
project participants involved?			Investment Board (PIB) has its own benchmark for considering projects. Copy of same applicable at the time of decision making is to be provided. Refer 6.c.ww above		
ii. determining whether the same benchmark has been applied?	VVM	112	Refer 6.c.ww above	-	-
iii. determining if there are verifiable circumstances that have led to a change in the benchmark?	VVM	112	Refer 6.c.ww above	-	-
zz. Did the project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed project activities?	VVM	113	Techno-economic approval was given by Central Electricity Authority based on Detailed project Report (DPR).	OK	OK
xx. If yes:	VVM	113			
i. has the FSR been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed?	VVM	113	It may be clarified whether data given in DPR was used in approval of project activity by Public Investment Board and Cabinet Committee on Economic Affairs.	CL 7	OK
ii. Are the values used in the PDD and associated annexes fully consistent with the FSR?	VVM	113	In the 118 th meeting of the commercial committee held on 15 th April 2005, the project is mentioned as 434 MW. In the letter of Ministry of Environment & Forests dated 7 th April 2006 for approval of diversion of forest land, project is mentioned as 434 MW whereas in PIB approval	CAR 26	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>in meeting dated 25th July 2007, project is given as 412 MW.</p> <p>Energy generation in approval of CEA is given as 1969.69 GWh whereas energy generation in PIB approval is 1770 million units.</p> <p>The cost in PIB approval is Rs 2047.03 crores (March 2006 price level). The cost of project in Ministry of Environment & Forests environment clearance is Rs 2049.98 (March 2005 price level). Please provide detailed calculations on two price estimates with justifications on changing the basis of estimating price.</p> <p>Approval letter of Ministry of Environment & Forests (for diversion of forest land) mentions diversion of forest land of 69.3762 hectares whereas Ministry of Environment & Forest environment clearance mentions that forest land is 50 hectares.</p> <p>The above changes may kindly be explained with justification on changes made. The exact chronology on changes may kindly be provided</p>		
iii. If not, was the appropriateness of the values validated?	VVM	113	Refer 6.c.xx.i and 6.c.xx.ii above	-	-
iv. On the basis of its specific local and sectoral expertise, is confirmation provided,	VVM	113	Refer 6.c.xx.i and 6.c.xx.ii above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision?					
d. Barrier analysis					
a. Has barrier analysis been used to demonstrated the additionality of the proposed CDM project activity?	VVM	115	Barrier analysis has been used	OK	OK
b. If yes, does the PDD demonstrate that the proposed CDM project activity faces barriers that:	VVM	115			
i.prevent the implementation of this type of proposed CMD project activity?	VVM	115	Barrier are shown to be for the project activity	OK	OK
ii.do not prevent the implementation of at least one of the alternatives?	VVM	115	It is mentioned that barrier would not prevent implementation of grid connected power plants	OK	OK
c. Are there any issues that have a clear direct impact on the financial returns of the project activity, other than: risk related barriers, for example risk of technical failure, that could have negative effects on the financial performance; or barriers related to the unavailability of sources of finance for the project activity? {If yes, these issues cannot be considered barriers and shall be assessed by investment analysis. [Refer to (6.c) above]}	VVM	116	Delay can cause cost-over runs which is considered in sensitivity analysis	OK	OK
d. Were the barriers determined as real by:	VVM	117			
i. assssing the available evidence and/or undertaking interviews with relevant individuals (including members of industry associations, government officials or local	VVM	117	As discussed during the site visit, it needs to explained whether the barriers mentioned as Institutional and regulatory barriers are barriers or steps required for the project.	CAR 27	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
experts if necessary) to determine whether the barriers listed in the PDD exist?			As discussed during the site visit, copy of all evidences for barriers needs to be provided.		
ii. ensuring that existence of barriers is substantiated by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics?	VVM	117	Refer 6.d.d.i above	-	-
iii. Is existence of a barrier substantiated only by the opinions of the project participants? (If yes, this barrier cannot be considered as adequately substantiated)	VVM	117	Refer 6.d.d.i above	-	-
e. Were the barriers determined as preventing the implementation of the project activity but not the implementation of at least one of the possible alternatives by applying local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the proposed CDM project activity and would not equally prevent implementation of <i>at least one of</i> the possible alternatives, in particular the identified baseline scenario?	VVM	117	Refer 6.d.d.i above. It is mentioned that barriers would not prevent implementation of grid connected power plants	-	-
e. Common practice analysis					
a. Is this a large-scale, or first-of-its kind small-scale project activity?	VVM	119	It is a large scale project	OK	OK
b. If yes, was common practice analysis carried out as a credibility check of the other available evidence used by the project participants to demonstrate additionality?	VVM	119	Common practice analysis has been carried out	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
c. Was it assessed whether the geographical scope (e.g. defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type? (For certain technologies the relevant region for assessment will be local and for others it may be transnational/global.	VVM	120	As discussed during the site visit, region in common practice analysis is not defined. Analysis of similar projects in the region is not carried out. Essential distinctions with other projects is not demonstrated.	CAR 28	OK
d. Was a region other than the entire host country chosen?	VVM	120	Refer 6.e.c above	-	-
e. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	Refer 6.e.c above	-	-
f. Using official sources and local and industry expertise, was it determined to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities, have been undertaken in the defined region?	VVM	120	Complete details have not been provided. Refer 6.e.c above	-	-
g. Are similar and operational projects, other than CDM project activities, already "widely observed and commonly carried out" in the defined region?	VVM	120	Complete details of all other projects have not been provided. Refer 6.e.c above	-	-
h. If yes, was it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVM	120	Refer 6.e.c above.	-	-
7. Monitoring plan					
a. Does the PDD include a monitoring plan?	VVM	122	Yes, monitoring plan is included	OK	OK
b. Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVM	122	As discussed during the site visit, monitoring plan is not correct. It is not as per the monitoring proposed to be carried out by project participant	CAR 29	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>at site. Details on good monitoring practices as required by Guidelines for completing PDD is not incorporated. Details as specified in Guidelines for completing PDD are not included in section B7.1 and B 7.2. Complete details on measurement methods, accuracy of instruments etc are not included in B7.1 and B 7.2.</p> <p>Details of metering system with details on number of various meters etc as proposed to be installed at site by project proponent and details of various reports that will be generated are not included.</p> <p>Copy of emergency preparedness plan as mentioned in section B7.2 is to be provided. Footnote 32 in PDD is not correct. Two DG sets are proposed to be installed which are not included.</p> <p>Operational and management structure proposed to be implemented by project participant is not included. Responsibilities for and institutional arrangements for data collection and archiving etc is not included in detail in PDD.</p> <p>Details on good monitoring practices is not included in PDD.</p>		



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Complete details on monitoring plan such as procedures in case of mal-functioning of meters etc. are not included. Complete details are not included with respect to accuracy of equipments, data management, QA/QC plan , data capture etc		
c. Were the list of parameters required by the the selected methodology identified?	VVM	123	As discussed during the site visit, the monitoring parameters are to be as per monitoring proposed to be carried out at site. Refer 7.b above	-	-
d. Does the monitoring plan contains all necessary parameters?	VVM	123	As discussed during the site visit, the monitoring parameters are to be as per monitoring proposed to be carried out at site. Refer 7.b above	-	-
e. Are the parameters clearly described?	VVM	123	More details are required with respect to accuracy of equipments, QA/QC plan , data capture etc. Refer 7.b above	-	-
f. Does the means of monitoring described in the plan comply with the requirements of the methodology?	VVM	123	Monitoring plan is as per ACM 0002. Refer 7.b above	-	-
1. Are all data and parameters monitored as per monitoring methodology?	ACM	000 2 v.1 1	Please refer 7.b above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
2. Are all data collected as part of monitoring archived electronically and kept at least for 2 years after the end of the last crediting period??	ACM	000 2 v.1 1	Responsibilities for and institutional arrangements for data collection and archiving etc is not included in detail in PDD. Refer 7.b above	-	-
3. Are 100% of the data monitored, if not indicated otherwise?	ACM	000 2 v.1 1	Refer 7.b above	-	-
g. Does the monitoring plan provide details regarding calibration of monitoring equipments/ instruments or does it include zero check as a substitute for calibration? (zero check can not be considered as a substitute for calibration)	EB 24	Ann 37	Complete details are not included with respect to accuracy of equipments, data management, QA/QC plan , data capture etc Please refer 7.b above	-	-
4. Are the monitoring provisions in the tools referred to in the methodology correctly applied?	ACM	000 2 v.1 1	EF is determined ex-ante. Please refer 7.b above	-	-
5. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	VVM	123	Please refer 7.b above	-	-
h. Are the following means of implementation of the monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified:	VVM	123			
i. data management procedures?	VVM	123	More details are required on data management. Refer 7.b above	-	-
ii. quality assurance procedures?	VVM	123	More details are required on QA procedures. Refer 7.b above	-	-



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. quality control procedures?	VVM	123	More details are required on QC procedures. Refer 7.b above	-	-
8. Sustainable development					
a. Does the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development?	VVM	125	Details on sustainable development are given. Explanation on technological well being is not detailed.	CAR 2	OK
b. Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVM	126	DNA approval not available	-	-
9. Local stakeholder consultation					
a. Were local stakeholders (public, including individuals, groups or communities affected, of likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity) invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website?	VVM	128	Public hearing meeting were conducted by project proponent prior to publication of PDD on UNFCCC website.	-	-
b. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	129	Public hearing were held and comments were invited	OK	OK
c. Is the summary of the comments received as provided in the PDD complete?	VVM	129	Details are given in PDD.	OK	OK
d. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	129	Details are given in PDD. Meeting was held with local stakeholders during the site visit. Local stakeholders mentioned following issues	CAR 30	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>1) There is high level of particulate pollution due to movement of vehicles and this is resulting in damage to crops</p> <p>2) Cracks have developed in houses due to blasting activities being carried out.</p> <p>3) Water supply sources have dried up.</p> <p>Please explain how these issues are being taken care of by project proponent.</p> <p>Attendance sheet of the meeting held on 30th March 2007 to discuss draft resettlement action plan is to be provided along with minutes of meeting on official letterhead.</p> <p>A copy of all studies carried out on assessing crop damage, assessment of cracks in houses due to blasting, studies carried out by State Pollution Control Board etc are to be provided.</p>		



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
10. Environmental impacts					
a. Have the project participants submitted documentation on the analysis of the environmental impacts of the project activity?	VVM	131	Summary of EIA has been provided. Brief details are included in PDD.	OK	OK
b. Have the project participants undertaken an analysis of environmental impacts?	VVM	132	EIA has been carried out	OK	OK
c. Does the host Party require an environmental impact assessment?	VVM	132	EIA is required by host party	OK	OK
d. If yes, have the project participants undertaken an environmental impact assessment?	VVM	132	Project participant has carried out EIA study. Brief details of environmental impacts and Environment management plan are provided in PDD. A copy of air quality data (as per EIA/EMP report) as mentioned in PDD may kindly be provided.	CL 8	OK

**Table 2 Resolution of Corrective Action and Clarification Requests**

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project owner response	Validation team conclusion
<p>CAR 1</p> <p>Assumptions used in obtaining electricity generation value are not included. Justification for PLF is not provided. PLF given in CEA approval is 54.58% and PLF given in PDD is approx 49%. Please explain the same. Maximum generation capacity of turbine generator is not included. Description is not detailed.</p> <p>Project layout, layout of metering system etc are not provided. Details of two DG sets proposed to be installed are not included.</p> <p>Please provide document for pollution load in environmental well being.</p> <p>It is mentioned in section A.2 of PDD that project activity will result in ~1.42 million tones of CO2 net emissions reductions annually. This figure is not correct.</p>	<p>Table 1</p> <p>3.d.i</p>	<p>Reply 1: The RHEP project is located downstream of Nathpa hydro power project. The Nathpa Jhakri project has faced siltation problems since its commissioning, due to which its operations were brought to halt on several occasions when the silt concentration was more than 4000 ppm and for reservoir flushing during high flows. The concurrence accorded by CEA in Dec 2005 did not account for the high silt content in Nathpa in the design energy calculations when the PLF was 54.58%. However when the design energy was re-assessed after taking into consideration the siltation problem involved, it was found to be 1770 million units (ie. PLF 49%). This new design energy was vetted by CCEA and accorded the approval in January 2007. The calculations of 1770 MUs energy generation are provided to DOE. The PLF is a derived item and is equal to Design Energy / Maximum Energy Generation without the restriction of water.</p> <p>The maximum generation capacity is mentioned</p>	<p>It is mentioned that design energy was reassessed taking into account siltation problem, please provide supporting documents for the PLF considered .</p> <p>B6.3 gives net electricity generation. Please provide maximum generation capacity.</p> <p>Project description in section A 2 does not include details of DG sets.</p>



VALIDATION REPORT

		<p>in section B.6.3.</p> <p>The monitoring plan is revised in section B.7.2. to include lay out of metering system. The details of the two DG sets proposed are included in A.4.3.</p> <p>The paragraph on the environmental being is revised in the PDD.</p> <p>The figure is corrected in section A4.2 of the PDD.</p> <p>Reply 2: The same PLF is considered in CCEA also. Description has been detailed in Section A.2. . The maximum generation is 1770 units however a 10% overloading may take place depending on upstream water availability. This is given as a footnote in B.6.3.The DG set description is included in section A.2.</p> <p>The total energy generation of the 412 MW Rampur HEP as mentioned in PIB memorandum is 1770 MU (1 MU= 1 GWh) taking into account silt concentration and 1500 MW Nathpa Jhakri HEP performance.</p>	<p>The design energy given in minutes of meeting of Public Investment Board (PIB) is 1770 GWh which amounts to PLF of 49.04%. This is in line with EB 48 Annex 11 as it is provided to PIB, Govt of India for implementation approval. Emission reduction value has been corrected in revised PDD in section A.2. Description on environmental well being has been corrected. Metering system layout is provided PDD and corrections have been made in revised PDD. Since the PLF is justified and it is in line with EB 48 Annex 11 and other corrections have been made in PDD. DG sets have been added in description. Since the corrections have been made in PDD and PLF has</p>
--	--	--	---



VALIDATION REPORT

			been justified in line with EB 48 Annex 11, the CAR is closed.
CAR 2 Details on sustainable development are given. Explanation on technological well being is not detailed.	Table 1 3.d.iii	The technological well being is described in detail in the revised PDD.	Explanation on technological well being is detailed in revised PDD. The description on technological well being is adequate. Hence the CAR is closed.
CAR 3 Latitude, longitude are to be provided upto seconds. Map of project activity is not as per actual map at site as discussed during the site visit.	Table 1 3.f.ii	The latitude and longitude are provided upto seconds in the revised PDD. Reply 2: Actual site map is included. Latitude and longitude given in decimal	Actual map needs to be included Map has been revised. Latitude, longitude are given in decimal in revised PDD. Hence the CAR is closed.
CAR 4 Complete name of category is not provided in section A4.2 of PDD	Table 1 3.g	The category name is provided in the revised PDD. Reply 2: The latest tool (EB 50, version 02) is referred to in the PDD.	The latest version of Tools to calculate emission factor for an electricity system needs to be referred Latest version of tool is referred and corrections have been made in the revised PDD. Hence the



VALIDATION REPORT

			CAR is closed.
<p>CAR 5</p> <p>Complete details in line with Guidelines for completing PDD needs are not provided (in section A4.3 of PDD) regarding technology and other details as mentioned in guidelines.</p>	<p>Table 1</p> <p>3.h.i</p>	<p>The section A.4.3 is revised according to the "Guidelines for completing the PDD, version 7", EB 41.</p> <p><i>Technology and other details are revised according to the guidelines.</i></p>	<p>Section A4.3 has been revised and details on technology and other details as per Guidelines for completing PDD have been added. Hence the CAR is closed.</p>
<p>CAR 6</p> <p>Details on purpose, scenario existing prior to project activity, baseline are not included in section A4.3 of PDD.</p>	<p>Table 1</p> <p>3.h.ii</p>	<p>The section A.4.3 is revised according to the "Guidelines for completing the PDD, version 7", EB 41.</p> <p><i>Details on purpose, scenario existing prior to project activity, baseline are revised in section A.4.3 as per guidelines.</i></p>	<p>Details on purpose, scenario existing prior to project activity and baseline have been added in section A4.3 in revised PDD as per guidelines for completing PDD. Hence the CAR is closed.</p>
<p>CAR 7</p> <p>Please explain whether technical Specifications included (in section A4.3 of PDD) are as per the latest work orders and copy of the same is to be provided.</p>	<p>Table 1</p> <p>3.h.iii</p>	<p>The technical specifications are revised as per the latest work orders. The work order issued for civil works and E&M works, copies of which given to DOE, are as per latest specifications mentioned in A 4.3 of PDD.</p> <p>Reply 2: A copy the technical specifications have been provided to DOE. (Turbine and generator)</p>	<p>Only covering letters have been provided. Please provide copy of technical specifications as given in work orders.</p> <p>Copy of technical specifications as per work order have been provided and details have been incorporated in PDD. Hence the CAR is closed.</p>



VALIDATION REPORT

CAR 8 Emission sources and GHGs involved are not detailed in section A4.3 of PDD.	Table 1 3.h.iv	The section A.4.3 is revised according to the "Guidelines for completing the PDD, version 7", EB 41. <i>Emission sources and GHGs involved are revised in section A.4.3. as per guidelines for completing the pdd</i>	Details on emission source and GHGs have been added in revised PDD. The descriptions is as per Guidelines for completing PDD. Hence the CAR is closed.
CAR 9 Emission reductions are given in tabular format. The value of total emission reduction is not correct in section A4.4 of PDD.	Table 1 3.i	The total emission reduction figure is corrected in the section A.4.4 of the PDD.	The emission reduction figure has been corrected in revised PDD. The emission reduction value is 1407658 tCO ₂ /annum. The calculations have been checked and found to be correct. Hence the CAR is closed.
CAR 10 ACM0002 gives conditions under which methodology is not applicable. These have not been included.	Table 1 3.l.i	The non-applicable conditions of the applicable methodology ACM 0002 are included in the revised PDD.	All the conditions mentioned in methodology have been addressed. Justification for applicability conditions correct and methodology is applicable. Hence the CAR is closed.
CAR 11 In line with ACM 0002, the relevant grid has not been included.	Table 1 3.m.ii	The diagrammatic representation is revised to include the relevant grid in section B.3 of the PDD.	The relevant grid has been included in project boundary which is in line with methodology. The project boundary is as per the methodology. Hence



VALIDATION REPORT

			the CAR is closed.
CAR 12 EFcm is given, however other parameters i.e. EFbm, EF om are not given in section B6.2 of PDD.	Table 1 3.q.i	The parameters EF_{grid OM,y} and EF_{grid BM,y} are included in section B.6.2 of the revised PDD.	EFbm and EFom have been included in B6.2 of revised PDD. The values of EFbm and EFom have been taken from CEA database which is official source of data. Hence the CAR is closed.
CAR 13 It is not indicated that the entity is also a project participant in section B8 of PDD	Table 1 3.v.iii	It is indicated in the revised section B.8 that the entity is also the project participant.	It is indicated in section B.8 of revised PDD that entity is project participant. Hence the CAR is closed.
CAR 14 The start date is not correct. Start date is not as per CDM Glossary of terms.	Table 1 3.w.i	The start date of the project activity is revised to the date on which the order for the civil works package was placed. Reply 2: The letter of acceptance of civil works by PP is considered to be the start date of the project. Supporting document is provided to DOE.	Please clarify the start date. As per the documents provided, 01/02/2007 is the date of letter of acceptance for civil works. The start date has been revised as date of acceptance letter given by project participant. The start date is as per Glossary of CDM terms. Hence the CAR is closed.
CAR 15	Table 1 3.jj.ii	The complete details are provided in Annex I of	Complete details have been provided in Annex I



VALIDATION REPORT

Complete details are not provided in Annex I.		the PDD.	of revised PDD. Hence the CAR is closed.
CAR 16 National and sectoral policies are not included in PDD.	Table 1 5.d.l	The National Hydro power policy and Hydro Power Policy 2006 for Himachal Pradesh is included in Annex.5 of the PDD.	The project participant has incorporated the National Hydro power policy and Hydro power policy 2006 for Himachal Pradesh in Annex 5 of revised PDD. Hence the CAR is closed.
CAR 17 Complete details are not included on description of scenario in absence of project activity in section B4.	Table 1 5.d.m	The section B.4 of the PDD is revised to include the description of the scenario in the absence of the project activity.	Complete details are included in section B4 of revised PDD. The baseline description is as per the methodology. Hence the CAR is closed.
CAR 18 In the calculation of EF, step 5 is not included and in step 4, details of cohorts of power unit is not included in build margin. Ex-ante calculations given in B6.3 of PDD is not detailed in line with Guidelines for completing PDD. Notations as per ACM 0002 are not used. There are two equations mentioned in ACM 0002 for project emissions and only one of these is mentioned in PDD. Please explain the relevance.	Table 1 5.e.a	Section B.4 is revised to include all the steps for determining the baseline of the projects. The calculations in section B.6.3 are detailed in the revised PDD. Notations as per ACM0002 are used in the revised PDD Both the equations for estimating the project emissions as per ACM0002 are included in the PDD.	Project emissions from DG sets needs to be detailed. Steps to calculate emission factor have been revised in line with the tools to calculate emission factor for an electricity system. Calculations in B6.3 have been detailed in revised PDD. Notations as



VALIDATION REPORT

		<p>Reply 2: Formulae has been given in B.6.1. The project emissions will be deducted from the net emissions and will be included in the estimation of emission reductions after the project is commissioned. This is mentioned as footnote in section B.6.4.</p>	<p>per ACM 0002 have been used in revised PDD. Equations for calculating emissions from DG sets have been included. Corrections have been made in revised PDD. Since the complete steps to determine EF as per tools to calculate emission factor for an electricity system have been included and calculations in B6.3 are detailed and found to be correct, the CAR is closed.</p>
<p>CAR 19</p> <p>Auxilliary consumption has been taken as 0.7% which is not correct. Justification is not included for the value of gross energy generation used. Documents for all values used in calculations needs to be provided.</p>	<p>Table 1 5.e.b</p>	<p>The auxiliary consumption is corrected to 0.5% as per the CERC guidelines. The gross energy generation is derived from the design energy calculations for the project. The supporting documents for the same are provided to the DOE.</p>	<p>Auxilliary consumption has been corrected and it is in line with CERC regulations. Supporting document of PIB for gross generation has been provided. The calculations have been checked and found to be correct. CERC regulations are official source of data and hence acceptable. Since auxiliary consumption has been corrected and supporting documents for calculations</p>



VALIDATION REPORT

			have been provided, the CAR is closed.
<p>CAR 20</p> <p>As per PDD, IBRD analysed the project from CDM perspective. Copy of the document is to be provided.</p> <p>As discussed during the site visit, techno-economic approval was given by Central Electricity Authority (CEA) based on Detailed Project Report (DPR). Following is mentioned in DPR</p> <p>‘The sale rate of energy determined as Rs 2.01 /kWh in the first year and a levelized tariff of Rs 1.81 /kWh shows that the project is financially viable and economically attractive’</p> <p>In the analysis given in DPR, CDM benefits have not been considered. The project cost and energy generation were revised later on. Please clarify whether sale rate of energy was determined again at revised cost and revised energy generation. The DPR (Chapter 17) mentions that economic and financial evaluation of Rampur H.E. project has been considered as per guidelines issued by Central Electricity Authority (CEA) and norms laid down by the Central Electricity Regulatory Commission (CERC) for Hydro projects. Please provide the guidelines of CEA and norms of CERC which stipulates the procedure for carrying out economic and financial analysis of Hydro projects. Please clarify whether procedure for carrying out financial analysis carried in DPR was also considered by PIB and CCEA since it is as per guidelines of CEA and norms of CERC.</p>	Table 1 6.a.b.	<p>The project cost and energy generation were revised for consideration of PIB (the energy generation calculation sheet and Revised Cost Estimate at March, 2006 price level is provided to DOE). The PIB Minutes clearly mentions the Revised Cost of Project as well as revised energy generation (the PIB Minutes already submitted to DOE). The sale rate of the energy was also determined at revised cost of project and revised energy generation according to which first year tariff works out to Rs. 2.39 / kwh and levelized tariff at Rs.1.80/kwh, which is based on CERC guidelines.</p> <p>The DPR for the project was prepared to seek the requisite clearances. The techno-economic clearance from CEA is an approval for the project technology and project cost and does not refer to the financial viability of the project. The financial viability of the project is accorded by the PIB / CCEA which considers IRR as an indicator of financial viability. The PIB clearance obtained for the project mentions the consideration of CDM benefits for the project. The IRR calculation along with 35 years tariff calculation, sent for PIB consideration is also provided to DOE.</p>	<p>Please provide a copy of document regarding IBRD analysis of the project from CDM perspective (as referred in CAR 20).</p> <p>Please provide supporting documents (such as covering letter) for IRR calculations that was sent for PIB consideration. Please clarify the IRR that was considered.</p> <p>Please clarify the statement in DPR which states that at the levelized tariff (stated in DPR), the project is financially viable and economically attractive. Please provide copy of guidelines of CEA and norms of CERC.</p>



VALIDATION REPORT

<p>CAR 20 (contd)</p> <p>The project was approved by Public investment Board (PIB) and subsequently by Cabinet Committee on Economic affairs. The minutes of meeting of PIB states that The World Bank has been supporting GOI for getting carbon credits and this project would be the largest. However, the financial viability analysis that have been considered by PIB and CCEA have not been provided. A copy of these analysis are to be provided. The financial indicator and benchmark considered by PIB and CCEA may kindly be provided.</p> <p>Thus, techno-economic approval was given by CEA without considering CDM benefits. As stated above, copy of financial viability analysis that was considered by PIB and CCEA needs to be provided. As per EB 41, Annex 46, it needs to be shown that CDM was a decisive factor in decision to proceed with the project activity.</p> <p>Copy of document regarding meeting between Satluj Jal Vidyut Nigam Ltd and The World Bank submitted to Ministry of Power needs to be provided.</p> <p>As discussed during site visit, detailed chronology is not provided including details of discussions between SJVNL and The World Bank etc</p>		<p>As per Govt. of India guidelines, only those projects with a financial rate of return equal to or exceeding 12% are to be posed to the PIB for its consideration. The copy of guidelines is provided to DOE. The financial analysis submitted to PIB is also provided.</p> <p>The PIB minutes of July 2006 also quotes of the consideration of CDM.</p> <p>The Minutes of meeting between SJVN and The World Bank regarding Carbon Finance for RHEP submitted to Ministry of Power by World Bank vide its letter dated February 22, 2006 is provided to DOE.</p> <p>The detailed chronology of discussions between SJVN and The World Bank will be provided to DOE.</p> <p>Reply 2: The Project Appraisal Document (PAD) for RHEP by World Bank is submitted to DOE.</p>	<p>Please provide copy of the financial viability analysis that have been considered. The financial indicator and benchmark considered may kindly be provided. Benchmark at the time of decision making needs to be provided.</p> <p>Copy of letter dated Feb 22, 2006 that is submitted to Ministry of Power has not been provided.</p> <p>PIB minutes mention that The World bank has been supporting GOI for getting carbon credits and this project would be largest. However, it needs to be shown that CDM was a decisive factor in the decision to proceed with</p>



VALIDATION REPORT

		<p>The supporting evidences for calculating the IRR are submitted to DOE. The documents showing the IRR considered by PIB submitted to DOE wherein it is explicitly mentioned that carbon revenue will form a part of the cash flows for the project.</p> <p>The statement in the DPR stating the project is financially viable and economically attractive implies that the project is viable as the Return on Equity (RoE) is fixed for the project as per CERC norms. Moreover, the DPR is a report which documents all the technical and financial details of the project. The DPR is not the final document for approval to be granted for the implementation of the project, but is a reference document for all the project related information.</p> <p>The CEA and CERC guidelines have been submitted to the DOE.</p> <p>.</p> <p>In DPR, tariff calculation is carried out based on 2005 project cost . In DPR, IRR calculation is not given, whereas in PIB , IRR analysis is carried out based on 2006 project cost.</p> <p>As stated in PIB Memorandum sale rate of energy worked out to be 2.39 which is used for approval process</p>	<p>the project activity.</p> <p>The Rampur Hydroelectric power project is a part of five year plan of Govt of India. This needs clarifications.</p> <p>Detailed chronology has been provided in revised PDD. The project participant has clarified that entire equity is met from SJVNI and there is no support from Govt of India. Benchmark at the time of decision making has been provided. Copy of letter (dated Feb 22, 2006) written by The World bank to Ministry of Power has been provided and letters communications between SJVNL and The World bank regarding CDM prior to decision date have been provided. These show that SJVNL was aware of CDM prior to project start date. It is clarified by project</p>
--	--	--	--



VALIDATION REPORT

		<p>The financial analysis considered by PIB and has been submitted to DOE. The copy of the benchmark considered at the time of approval by PIB is also provided to DOE.</p> <p>The copy of the letter dated 22nd February 2006 submitted to Ministry of Power is also provided to DOE.</p> <p>The "Memorandum for Public Investment Board on cost estimate for RHEP" dated May 2006 explicitly mentions that the carbon revenue would form a part of the cash flows for the project. This helps the project cross the 12% benchmark set for the project as per government regulations. Further in August 2006, in the 152nd meeting minutes of the RHEP Board meeting approval is given for taking carbon credits are being considered for the project.</p> <p>The PIB clearance obtained for the project mentions the consideration of CDM benefits for the project. Draft CCEA note given by SJVNL to Ministry of Power, declaration from Chairman and Managing Director of SJVNL and board resolution of SJVNL also mentions CDM benefits</p>	<p>participant that approval by Central electricity Authority is only techno-economic clearance. IRR analysis has only been done by PIB. Guidelines of CEA and norms of CERC have been provided. The guidelines on Public investment/expenditure, Government of India states that only projects with IRR exceeding 12% should be posed to Public Investment Board (PIB) for approval. The Memorandum for Public Investment Board (PIB) states the IRR is less than 12%. However, the project was still approved and recommended by Public Investment Board and it was stated in the memorandum for PIB that Satluj Jal Vidyut Nigam Ltd is exploring the possibilities of obtaining carbon credits and accordingly carbon revenues shall also form of cash flows. The draft CCEA note given by</p>
--	--	--	--



VALIDATION REPORT

		<p>The above listed considerations indicate that the CDM was a decisive factor to proceed with the project.</p> <p>There is no support from Govt. Of India the entire equity is met from SJVNL and internal resources.</p>	<p>project participant to Ministry of Power also states the same. SJVNL has taken Board approval for taking carbon credits.</p> <p>A written declaration was also provided by the Chairman and Managing Director wherein it is stated that carbon revenues were considered in CCCEA approval. From all the discussions above, it is seen that carbon revenues were a decisive factor in the decision to proceed with the project activity which is in line with EB 49 Annex 22. Hence the CAR is closed.</p>
<p>CAR 21</p> <p>Extract of Board resolution is provided. The Board resolution mentions approval for taking carbon credits. However, as per EB 41, Annex 46, it needs to be shown that CDM was a decisive factor in decision to proceed with the project activity.</p> <p>Also, please clarify whether the project was approved in any Board resolution. If so, please provide copy of that</p>	<p>Table 1 6.a.h.i.a</p>	<p>The consideration of CDM for the RHEP project was a decisive factor in its implementation. This is reflected in its Board meeting held on 9th August 2006. The copy of the Agenda placed before SJVN Board of Directors regarding carbon finance along with minutes of the meeting is provided to DOE.</p> <p>Reply 2: Evidence (<i>Memorandum for Public</i></p>	<p>The extract of minutes of Board of Directors and agenda mention regarding taking approval for obtaining carbon credits for the project. However, it needs to be shown that CDM was a decisive factor in decision to proceed with</p>



VALIDATION REPORT

Board resolution.		<p><i>Investment Board on cost estimate for RHEP, dated May 2006</i>) to show that CDM was a decisive factor in the decision to proceed with the project activity is submitted to DOE.</p> <p>PIB does not consider project with returns less than 12%. But in the present case, PIB recommends project to CCEA with carbon credit benefits, as returns are less than 12% without carbon credit benefits. The cost approved by CCEA is communicated to project developer by Ministry of Power. Declaration from Chairman and Managing Director (CMD) also states that carbon credit benefits have been considered for this project during decision making stage.</p> <p>The PIB clearance obtained for the project mentions the consideration of CDM benefits for the project. Draft CCEA note given by SJVNL to Ministry of Power, declaration from Chairman and Managing Director of SJVNL and board resolution of SJVNL also mentions CDM benefits.</p>	<p>the project activity.</p> <p>The guidelines on Public investment/expenditure, Government of India states that only projects with IRR exceeding 12% should be posed to Public Investment Board (PIB) for approval. The Memorandum for Public Investment Board (PIB) states the IRR is less than 12%. However, the project was still approved and recommended by Public Investment Board and it was stated in the memorandum for PIB that Satluj Jal Vidyut Nigam Ltd is exploring the possibilities of obtaining carbon credits and accordingly carbon revenues shall also form of cash flows. The draft CCEA note given by project participant to Ministry of Power also states the same. SJVNL</p>
-------------------	--	--	--



VALIDATION REPORT

			<p>has taken Board approval for taking carbon credits.</p> <p>A written declaration was also provided by the Chairman and Managing Director wherein it is stated that carbon revenues were considered in CCCEA approval. From all the discussions above, it is seen that carbon revenues were a decisive factor in the decision to proceed with the project activity which is in line with EB 49 Annex 22. Hence the CAR is closed.</p>
<p>CAR 22</p> <p>As per discussions during the site visit, the project proponent informed that they have not used WACC for decision making, thus justification for using WACC in PDD may be explained.</p> <p>It was informed by project participant that Public Investment Board (PIB) has its own benchmark for considering projects. Copy of same applicable at the time of decision making is to be provided.</p>	Table 1 6.c.bb	<p>The WACC benchmark was not available during the decision making process by the proponent considering this as the first project for SJVN after many years and there is not precedence to use WACC. Considering that this is only project entity that accepted to implement this project, WACC approach was suggested for comparison. However, since a benchmark is required for PIB approval for large hydro power projects, the benchmark value of PIB is used for comparison. This also shows that the project IRR is less than the benchmark IRR.</p>	<p>Please provide copy of PIB guidelines applicable at the time of decision making.</p> <p>WACC has been removed from PDD as it was not used as a benchmark for approving the project. The guidelines on Public</p>



VALIDATION REPORT

		<p>The PIB guidelines for implementation of large hydro power projects are provided to DOE.</p> <p>Reply 2 PIB guidelines for decision making has been provided. The actual benchmark of 12% used by PIB for approving the project has been mentioned in PDD along with justification.</p>	<p>investment/expenditure, Government of India states that only projects with IRR exceeding 12% should be posed to Public Investment Board (PIB) for approval. As per sub-step 2b Option III, para 6d of Tool for the Demonstration and Assessment of Additionality ver 5.2, benchmark shall be derived from:</p> <p>'Government/official approved benchmark where such benchmarks are used for investment decisions'</p> <p>In this project, the benchmark of 12% was used by Public Investment Board for approving and recommending the project. Thus the benchmark for the project is taken as 12% which is in line with Tool for Demonstration and Assessment of Additionality, ver 5.2. The benchmark used now is in line with additionality tool and hence the CAR is closed.</p>
CAR 23	Table 1 6.c.rr	The inputs used in the financial IRR calculations are mainly Cost of Project (COP) and design energy which are as per figures considered by	Please indicate sources of all assumptions in IRR sheet. Please provide



VALIDATION REPORT

<p>values used in IRR calculations.</p> <p>Local debt has been considered in IRR calculations. The project proponent has taken loan from The World Bank, thus using local debt in IRR calculations is not correct.</p> <p>As discussed during the site visit, many parameters mentioned in the IRR excel sheet have not been used in calculations. As discussed during the site visit, IRR calculations is not correct. IRR calculations with CDM is not provided.</p>	<p>PIB, the reference of which have also been mentioned in PIB minutes. The transformation losses, auxiliary consumption has been taken as per CERC norms; 12 % free power to Govt. of H.P. has been considered as per Implementation Agreement signed with Govt. of Himachal Pradesh. All supporting documents for the same are already submitted to DOE.</p> <p>The IRR calculations considered by PIB (held on July 25, 2006) are submitted to DOE. The proponent was already in communication with the World Bank for availing the IBRD loan. Hence the interest rate prevailing at that point of time has been taken @ 7.25% (6 months LIBOR of 5.63% as on June, 2006 + Variable spread of 0.17% of World Bank + 0.25% commitment fees + 1.2% for Guarantee fee to be charged by Govt of India).</p> <p>The financial analysis sheet is revised with the consideration of CDM and the same is submitted to DOE.</p> <p>Reply 2: All documentary evidences for the assumption in the IRR are submitted to DOE and the reference sources are also listed in the spread sheet.</p> <p>It can be inferred from the below link, Hydro projects up to 25 MW are eligible for</p>	<p>evidence for O&M charges, interest on working capital etc taken in IRR calculations Please provide supporting documents for the IRR.</p> <p>Hydro projects are eligible to government subsidy. No subsidy is considered. Please explain. Salvage value is not considered.</p> <p>O&M escalation as per assumption is 4%. However in IRR sheet no escalation is considered.</p> <p>IRR calculations have been revised. Support documents for input values have been provided. Design energy is as approved and recommended by PIB. Cost is as approved and</p>
--	---	--



VALIDATION REPORT

		<p>government subsidy. http://mnre.gov.in/scheme-main-shp.htm</p> <p>Since RHEP is 412 MW, this project is not eligible for government subsidy.</p> <p>According to EB 51, Annex 58, clause 4, salvage value i.e. fair value of land is added at the end of assessment period in IRR computation.</p> <p>During tariff computation, O&M cost and its escalation is considered. Please refer the excel sheet "Tariff New CERC Norms". Since O&M escalation is considered in tariff computation, the same has not been considered in IRR sheet which otherwise would result in double counting.</p>	<p>recommended by PIB and approved by CCEA. Documents for other data have also been provided such as O&M and its escalation has been taken from CERC regulations. CERC regulations are applicable at the time of decision making and hence they are in line with para 6 of EB 51, Annex 58. Interest on working capital has been taken from Memorandum for PIB etc. Transformation loss and auxiliary consumption have been taken from CREC regulations which are applicable at the time of decision making. Debt equity ratio is as approved by CCEA as communicated to project participant by Ministry of Power. Interest rate is as per letter of The World Bank communicated to the project participant. It has been clarified that was no subsidy. Salvage value has been considered.</p>
--	--	---	--



VALIDATION REPORT

			O&M escalation has already been incorporated in tariff calculations. IRR calculations have been checked by Sushil Budhia Associates, financial expert for the project and they are found to be correct. The input values are as per EB 51 Annex 58 and checked as per para 111 of VVM ver 1.2, hence the CAR is closed.
CAR 24 Sensitivity analysis has been carried out. As discussed during the site visit, sensitivity analysis is not presented properly (refer Table B13).	Table 1 6.c.vv	The sensitivity analysis is presented is presented separately for each parameter in the revised PDD.	Sensitivity analysis is presented for each parameter. Sensitivity has been carried out on project cost, O&M cost, tariff and generation. The validation team is of the opinion that parameters are in line with para 17 of EB 51 Annex 58. Hence the CAR is closed.
CAR 25	Table 1	As explained in CAR 22, the PDD was revised	Please provide copy of PIB



VALIDATION REPORT

<p>In the calculations of WACC, please explain suitability of using beta of Reliance Infrastructure as it not a fully power sector company. It may be explained to why beta of BF utilities has not been considered. The de-levered beta again has to be levered. The tax rate in calculation of WACC is taken as 11.33%. Please explain to why tax rate is not considered as 33.99% .</p> <p>It was informed by project participant that Public Investment Board (PIB) has its own benchmark for considering projects. Copy of same applicable at the time of decision making is to be provided.</p>	6.c.ww	<p>and hence there is no relevance of this CAR. Hence WACC is not used in the revised PDD.</p> <p>Reply 2: The PIB guidelines applicable at the time of decision making are provided to DOE.</p> <p>The actual benchmark of 12% used by PIB for approving the project has been mentioned in PDD along with justification</p>	<p>guidelines applicable at the time of decision making..</p> <p>WACC has been removed from PDD as it was not used as a benchmark for approving the project. The benchmark of 12% which was used by PIB in approving and recommending the project has been incorporated in PDD. Supporting documents have been provided. The benchmark used now is in line with additionality tool and hence the CAR is closed.</p>
<p>CAR 26</p> <p>In the 118th meeting of the commercial committee held on 15th April 2005, the project is mentioned as 434 MW. In the letter of Ministry of Environment & Forests dated 7th April 2006 for approval of diversion of forest land, project is mentioned as 434 MW whereas in PIB approval inmeeting dated 25th July 2007, project is given as 412 MW.</p>	Table 1 6.c.x.ii	<p>The Implementation Agreement was signed on October 20, 2004 with GoHP for Rampur HE Project, The capacity of which was indicated as 400- 500 MW by GoHP as the installed capacity of the project was yet to be firmed up. However, as per the preliminary studies available at that time, tentative installed capacity of RHEP was being considered as 434 MW. After considering various alternatives the installed capacity of the project was firmed up at 412 MW in the DPR</p>	<p>Please provide complete copy of implementation agreement signed with GoHP on 20th Oct 2004.</p> <p>The cost of project at March 2005 levels in DPR, CEA approval and MoEF</p>



VALIDATION REPORT

<p>Energy generation in approval of CEA is given as 1969.69 GWh whereas energy generation in PIB approval is 1770 million units.</p> <p>The cost in PIB approval is Rs 2047.03 crores (March 2006 price level). The cost of project in Ministry of Environment & Forests environment clearance is Rs 2049.98 (March 2005 price level). Please provide detailed calculations on two price estimates with justifications on changing the basis of estimating price.</p> <p>Approval letter of Ministry of Environment & Forests (for diversion of forest land) mentions diversion of forest land of 69.3762 hectares whereas Ministry of Environment & Forest environment clearance mentions that forest land is 50 hectares.</p> <p>The above changes may kindly be explained with justification on changes made. The exact chronology on changes may kindly be provided</p>	<p>submitted to CEA on May 31, 2005. All correspondence with various govt. agencies prior to that was made with Installed Capacity of 434 MW and accordingly, process of obtaining Environment Clearance was also initiated in 2004 with installed capacity of 434 MW after signing of Implementation Agreement with GoHP. The said figure of 434 MW has accordingly been mentioned by MOEF in its letter. As the installed capacity firmed up is less than 434 MW, it is not at all a concern with MOEF.</p> <p>At the PIB stage the energy generation has been reduced to 1770 MUs after considering 16 days shutdown of power station (5 days for silt flushing and 11 days on account of silt content in river Satluj more than 4000 PPM),keeping into consideration experience of upstream NJHEP, as the RHEP is to operate in tandem with NJHEP.</p> <p>The Cost Estimate of Rs. 2047.03 crores at March, 2006 price level considered by PIB is provided. The PP affirms that there is no cost estimates prepared for Rs. 2049.98 at March, 2005 price level, mention of which has been made in the Environment clearance. Moreover, the cost mentioned in Environment clearance is of little relevance for receiving the clearance.</p> <p>The Forest Land of 69.37 hectares has been</p>	<p>environmental clearance are not matching. This needs to be clarified/discussed.</p> <p>Further clarifications/discussions are required with respect to figures on forest clearance mentioned in MoEF clearance.</p> <p>The project participant has clarified that tentative capacity considered initially was 434 MW and finally firmed up capacity was 412 MW. The capacity mentioned in DPR, minutes of meeting of PIB and CCEA approval is 412 MW. It is stated in minutes of meeting that cost is Rs 20470.3 million at March 2006 levels. Hence the</p>
---	---	---



VALIDATION REPORT

		<p>diverted for RHEP after obtaining Forest Clearance for the same from MoEF vide its letter dated April 07, 2006. The figure of 50 hectares mentioned in the Environment Clearance seems to have been used inadvertently. However, it is pertinent to mention here that figures stated in Environment Clearance is of no importance as the actual land is diverted based on the Forest Clearance only.</p> <p>Reply 2: The copy of the Implementation Agreement dated 20th October 2004 is submitted to DOE.</p> <p>Declaration has been provided by the project participant regarding the project cost, approved design energy and forest clearance.</p> <p>The same project cost approved design energy also mentioned in PIB memorandum which was approved by PIB.</p>	<p>same is accepted. The minutes of meeting of PIB states that design energy has been revised in view of heavy siltation resulting in shutdown and design energy of 1770 GWh is mentioned in minutes of meeting of PIB and the same is accepted. The project participant has given a declaration regarding final design energy, final cost and forest clearance. Approval letter of Ministry of Environment & Forests (for diversion of forest land) mentions diversion of forest land of 69.3762 hectares. Hence the project participant has clarified regarding post cost, design energy and diversion of forests land Hence the CAR is closed</p>
<p>CAR 27</p> <p>As discussed during the site visit, it needs to explained whether the barriers mentioned as Institutional and regulatory barriers are barriers or steps required for the project.</p>	<p>Table 1 6.d.d.i</p>	<p>The institutional and regulatory barriers are not being referred to in the revised PDD.</p> <p>A copy of all evidences for the barriers have</p>	<p>Please refer to EB 50 Annex 13 para 7, which states that Barriers that can be mitigated by additional financial means</p>



VALIDATION REPORT

As discussed during the site visit, copy of all evidences for barriers needs to be provided.		<p>been provided to DOE.</p> <p>Reply 2: The investment barrier and institutional and regulatory barriers have been removed. Technology barriers are also removed in the recent PDD version.</p>	<p>can be quantified and represented as costs and should not be identified as a barrier for implementation of project while conducting the barrier analysis. Please explain investment barrier in view of this. Please provide evidences for barriers.</p> <p>The investment barrier, institutional and regulatory barrier and technology barriers have been removed from revised PDD. Hence the CAR is closed.</p>
<p>CAR 28</p> <p>As discussed during the site visit, region in common practice analysis is not defined. Analysis of similar projects in the region is not carried out. Essential distinctions with other projects is not demonstrated.</p>	Table 1 6.e.c	<p>The common practise is revised to include all sub steps of the "Tool to demonstrate Baseline and Additionality", version 5.2.</p> <p>Reply 2: Both Chamera I and II are run of the river projects. Further, they were conceptualized prior to the year 2000, hence belonging to a different investment climate and regulatory regime. Thus the projects are not comparable to the project activity. Details on Chamera I and II has been provided in PDD.</p>	<p>Please clarify whether Chamera I and Chamera II are run of river hydroelectric project. Range of capacity of run-of-river hydroelectric projects taken for comparison may be corrected.</p>



VALIDATION REPORT

		<p>The evidence for considering the +/-50% capacity of the project activity is already provided to DOE. However, now the cap on the upper limit is removed for a conservative common practise analysis.</p> <p>Since Rampur HEP is location in Himachal Pradesh State, region has been defined as Himachal Pradesh, and similar projects have been referred from HPSEB.</p> <p>The only project which is comparable with present project activity is Baspa II HEP,300 MW which is also availing VCS benefits. Hence there are no similar projects in the region were under operation at the time and implementation of project activity is not a common practice in the region.</p>	<p>Chamera I and Chamera II are run-of-the river projects. The region selected for common practice analysis is Himachal Pradesh state as the project activity is located in Himachal Pradesh. The validation team agrees with this as Tools for demonstration for assessment of additionality states that projects are considered similar if they take place in comparable environment with respect to regulatory framework etc.</p> <p>The evidence for the range of capacity has been provided. The project participant identified list of hydroelectric power projects operating in Himachal Pradesh from the website of Himachal Pradesh State Electricity Board. The validation team considered the list as appropriate as it from website of Government of Himachal Pradesh body and hence authentic. Only</p>
--	--	---	--



VALIDATION REPORT

			one project BASPA-II was found to be similar to the project activity but it is also seeking carbon revues under VCS. From the above discussions, it is concluded that similar activities are not widely observed and commonly carried out and hence not a common practice in the region. Hence the CAR is closed.
<p>CAR 29</p> <p>As discussed during the site visit, monitoring plan is not correct. It is not as per the monitoring proposed to be carried out by project participant at site. Details on good monitoring practices as required by Guidelines for completing PDD is not incorporated. Details as specified in Guidelines for completing PDD are not included in section B7.1 and B 7.2. Complete details on measurement methods, accuracy of instruments etc are not included in B7.1 and B 7.2.</p> <p>Details of metering system with details on number of various meters etc as proposed to be installed at site by project proponent and details of various reports that will be generated are not included.</p> <p>Copy of emergency preparedness plan as mentioned in section B7.2 is to be provided. Footnote 32 in PDD is not correct. Two DG sets are proposed to be installed which are not included.</p>	Table 1 7b	<p>The monitoring plan under section B.7.2 is revised to reflect good monitoring practise for the project. The management structure and responsibilities and the methods for data monitoring and archiving are also defined in the revised monitoring plan. The plan to install two DG sets is also included in the PDD.</p> <p>A copy of Emergency Preparedness Plan is provided to DOE.</p> <p>The manpower structure during operation stage shall be finalized one year prior to the commissioning of the project.</p> <p>Reply 2: The details pertaining to monitoring are detailed in the section B.7.2.</p> <p>. The soft copy of the emergency preparedness plan document is also available on SJVN's website.</p> <p>http://sjvn.nic.in/projects/rampurpdf/CEIA-PartIII.pdf (page no 4-47)</p>	<p>Data uncertainty, review of data, details of various reports that will be generated, data capture QA/QC plan etc needs to be addressed.</p> <p>It is mentioned in PDD that Emergency preparedness plan will be made available at time of validation. Please provide copy of same.</p>



VALIDATION REPORT

<p>CAR 29 (contd).</p> <p>Operational and management structure proposed to be implemented by project participant is not included. Responsibilities for and institutional arrangements for data collection and archiving etc is not included in detail in PDD.</p> <p>Details on good monitoring practices is not included in PDD.</p> <p>Complete details on monitoring plan such as procedures in case of mal-functioning of meters etc. are not included.</p> <p>Complete details are not included with respect to accuracy of equipments, data management, QA/QC plan , data capture etc</p>		<p>The monitoring plan under section B.7.2 is revised to reflect good monitoring practise for the project. The management structure and responsibilities and the methods for data monitoring and archiving are also defined in the revised monitoring plan. The plan to install two DG sets is also included in the PDD.</p> <p>A copy of Emergency Preparedness Plan is provided to DOE.</p> <p>The manpower structure during operation stage shall be finalized one year prior to the commissioning of the project.</p> <p>Accuracy of equipments, QA/QC plan, data capture, data management has been explained in Section B.7.2. of PDD.</p>	<p>Monitoring plan has been revised in revised PDD. Data archiving, data capture has been added. Management structure with responsibilities has been added in the revised PDD. Details on DG sets with parameters to be monitored has been included. Details on calibration of meter, data uncertainty etc have been incorporated in revised PDD. Monitoring plan is complete and per guidelines for completing PDD. The monitoring plan is in line with the methodology. Hence the CAR is closed.</p>
<p>CAR 30</p> <p>Details are given in PDD. Meeting was held with local stakeholders during the site visit. Local stakeholders mentioned following issues</p> <p>1) There is high level of particulate pollution due to movement of vehicles and this is resulting in damage to crops</p> <p>2) Cracks have developed in houses due to blasting activities</p>	<p>Table 1 9d</p>	<p>The PP, SJVN had already addressed the issues raised during the stakeholder meeting with DOE in the following ways.</p> <p>1) Residents of project affected Panchayats raised the issue that pollution due to movement of heavy vehicles is resulting in damage to crops. It was observed during the site visit that major Contractors were sprinkling the water regularly on the dumping sites as</p>	<p>The documents mentioned in the response and in the CAR 30 are not provided. Please provide the same. More details are required on how these issues raised by stakeholders are being addressed by PP.</p>



VALIDATION REPORT

<p>being carried out.</p> <p>3) Water supply sources have dried up.</p> <p>Please explain how these issues are being taken care of by project proponent.</p> <p>Attendance sheet of the meeting held on 30th March 2007 to discuss draft resettlement action plan is to be provided along with minutes of meeting on official letterhead.</p> <p>A copy of all studies carried out on assessing crop damage, assessment of cracks in houses due to blasting, studies carried out by State Pollution Control Board etc are to be provided.</p>		<p>per award of contract. The demand for sprinkling of water on public road was also raised by the villagers. In response to that, the proposal was initiated for approval of approval for sprinkling of water on public road. The same is under active consideration for the management. SJVN has also deposited Rs. 2.00 crores with HPPWD for widening/ metalling of PWD road in the project vicinity. Once the roads are metalled, this would reduce the dust pollution in the area.</p> <p>.</p> <p>2) The experts from the Central Institute of Mining and Fuel Research have conducted a survey for assessing the impact of vibration within safe limit of RHEP and it has been mentioned that no damage has been occurred due to blasting work.</p> <p>3) A budget allocation of Rs. 5.00 cr has been kept in LADC budget for augmentation of drinking water supply scheme/ restoration of dried up water resources in project affected area. SJVN has deposited Rs. 1.00 cr to LADC for the same. In addition, Rs. 78.40 lacs has also been spent.</p> <p>Supporting documents for the same are</p>	<p>Project participant has provided the reply that contractors sprinkle water on the roads to minimise dust. The validation team also observed during site visit that water was being sprinkled on the roads. The project participant also provided copy of letter written to Government of Himachal Pradesh which mentioned that funds were already released to Himachal Pradesh Public Works Department for widening of existing road from Wazir Bowri to village Bael. The project participant informed that improvement in road will reduce dust. The project participant also got a study carried out by Agricultural university Palampur to assess damage to crops. The study mentioned that prima facie, dust raised by construction operations did not cause damage to crops. Validation team is of the opinion that sprinkling measures taken would reduce dust and fund have been provided for</p>
--	--	--	--



VALIDATION REPORT

		<p>provided to DOE.</p> <p>Attendance sheet of the meeting on 30th March 2007 is provided to DOE.</p> <p>Reply 2: A third party study conducted by <i>Palampur University</i> experts on crop damage is submitted to DOE. The study indicates that there no damage on the crops due the RHEP project activity</p> <p>A copy of the study carried out by the Central Institute of Mining and Fuel Research <i>to ensure that there will not be damage due impact of vibration during blasting work during the construction of RHEP</i> is also submitted to DOE. Further SJVN is also compensating the local people with land and houses. This information is also available with the Project Information Centre There is no study conducted by PCB. SJVN has made efforts to install tube wells to ensure better water supply to the villagers. This is being done through the Irrigation Department. A copy of the document showing the resources allocated for the same is submitted to the DOE.</p>	<p>widening for roads. Thus the validation team is of the opinion that the concern of stakeholders regarding dust by project activity is appropriately addressed by project participant.</p> <p>Project participant got a study carried out by Central Institute of Mining and Fuel Research on effects of vibrations due to blasting. The study concluded that blast induced vibrations, measured at locations specifically selected by the neighbours of the project, were safe and insignificant from the point of view of structural damage. Thus the study shows that the vibration due to blasting does not cause damage to houses.</p> <p>As per the letter written to Government of Himachal Pradesh, project participant has already spent Rs 7.8 million on drinking water supply scheme/restoration of dried up water resources and funds worth Rs 10 million have been provided to DC, Kullu. The validation team is</p>
--	--	--	--



VALIDATION REPORT

			<p>of the opinion that measures taken by project participant to address the concern of stakeholders regarding drying up of water resources are appropriate</p> <p>As explained above, the validation team is of the opinion that concerns of stakeholders have been appropriately addressed by the project participant. Hence the CAR is closed.</p>
<p>CL 1</p> <p>DNA approval is to be provided. Application for DNA approval is to be provided for International Bank for Reconstruction and Development (The World Bank) as trustee of Spanish carbon fund.</p>	<p>Table 1 1.a</p>	<p>The Spanish DNA approval will be provided to IBRD after the Indian DNA approval is granted for the project. The PP had presented the project to the Indian DNA in July 2009 and approval of the same is awaited.</p> <p>Reply 2: A copy of the host country approval is provided to DOE.</p>	<p>Please provide copy of DNA approval</p> <p>In section A.3 of revised PDD, one of the Party involved is changed from Spain to Sweden.</p> <p>Also name of one of the</p>



VALIDATION REPORT

		<p>project participant has been changed from 'International Bank for Reconstruction and Development ("World Bank") as Trustee of the Spanish Carbon Fund' to 'International Bank for Reconstruction and Development as the Trustee for the Umbrella Carbon Fund Tranche2'. Please explain.</p> <p>Reply 3: International Bank for Reconstruction and Development (IBRD) as the Trustee for the Umbrella Carbon Fund Tranche2 has signed a Letter of Intent with Satluj Jal Vidyut Nigam Limited and IBRD as a Trustee for the Umbrella Carbon Fund Tranche2 is an entity of Sweden, that is the reason Sweden LoA has been taken. The party is stated as Sweden in the revised PDD. We would like to confirm that PP remains the same i.e. IBRD since in different countries it is operating in different capacities, that is why the PP name in the revised pdd is stated as International Bank for Reconstruction and Development</p>	<p>The project participant Satluj Jal Vidyut Nigam Limited has provided letter of Approval from DNA of India. The letter of approval for SJVNL clearly states that India has ratified the Kyoto Protocol and the approval is for voluntary participation in CDM project activity. Also, the letter of approval of DNA of India states and confirms that project activity contributes to sustainable development in India. The letter of</p>
--	--	--	---



VALIDATION REPORT

		<p>(IBRD) as the Trustee for the Umbrella Carbon Fund Tranche2. Application for DNA Approval is provided.</p>	<p>approval of DNA of India states the precise proposed CDM project activity title in the PDD being submitted for registration. The letter of DNA of India is unconditional with respect to party to the Kyoto Protocol, voluntary participation, contribution to sustainable development and title of project activity.</p> <p>International Bank for Reconstruction and Development (IBRD) as the Trustee for the Umbrella Carbon Fund Tranche2 has signed LOI with Satluj Jal Vidyut Nigam Ltd and copy of the same has been provided to the validation team. Since it is an entity in Sweden so part is stated as Sweden in revised PDD. The same is accepted by the validation team. It has also been clarified that project</p>
--	--	--	---



VALIDATION REPORT

		<p>participant remains same and in different countries it is acting in different capacities so in Sweden it is acting as the Trustee for the Umbrella Carbon Fund Tranche2 so the same is stated in revised PDD and the same is accepted by validation team. The letter of Approval of Swedish Energy Agency dated 24th Feb 2011 was provided to validation team and it refers to same project activity title as stated in PDD being submitted for request for registration. The letter of approval clearly states that Sweden has ratified the Kyoto Protocol. The letter of approval confirms that participation in the project is voluntary. The letter of DNA of Sweden unconditional with respect to party to the Kyoto Protocol, voluntary participation, and title of project activity. Hence the same was accepted by the</p>
--	--	---



VALIDATION REPORT

			validation team and the CL is closed.
<p>CL 2</p> <p>It may be clarified whether project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures</p>	<p>Table 1 3.gg.ii</p>	<p>As part of the Environmental Clearance process, a Public Hearing is required to be held to address all issues that the local stakeholders may have.. Further the Environmental Clearance was granted in March 2006 whereas the SJVN Board decision to benefit from the CDM provisions was formally taken in August 2006. It may also be noted that the PP has installed a Public Information Centre at the project site which is open to all to address the problems/ issues the local stakeholders may have.</p> <p>During the stake holder meeting project activity was described transparently to all stakeholder taking into account confidentiality provisions of the cdm modalities and procedures. Details have been verified from Minutes of Stake holder meeting and the same has been provided to doe,</p>	<p>Minutes of meeting of stakeholders has been provided. During site visit, validation team also interacted with few stakeholders who had attended the stakeholder meeting. The stakeholders confirmed the process of stakeholder meeting as described in PDD and project was described to them. The concerns of stakeholders have been addressed by the project participant as described in CAR 30 and PDD. Hence the CL is closed.</p>
<p>CL 3</p> <p>Please provide documents for all the technical details provided in description including purchase orders etc.</p>	<p>Table 1 4.b.ii</p>	<p>The documents for technical details are provided to DOE.</p> <p>Reply 2: Copies of the documents showing the technical details are provided to DOE.</p>	<p>Only covering letters are provided. Please provide copy of technical details as per purchase orders.</p>



VALIDATION REPORT

			Copy of technical specifications as per work order have been provided and details incorporated in PDD. Hence the CL is closed.
CL 4 As discussed during site visit, Satluj Jal Vidyut Nigam Ltd (SJVN) mentioned that discussions have been held with The World Bank regarding CDM. A copy of all the documents needs to be provided.	Table 1 6.a.h.i	A copy of communication between the World Bank team and SJVN between February 2006 to March 2007 is provided to DOE. Reply 2: Copies of all documents showing the communication between the World Bank team and SJVN between February 2006 to March 2007 is provided to DOE.	Please provide the documents. A copy of documents of communications between The World Bank and Satluj Jal Vidyut Nigam Ltd have been provided. Hence the CL is closed.
CL 5 Contract with Emergent venture has been made. A copy of contract is to be provided.	Table 1 6.a.h.ii.a	A copy of Emergent Ventures contract copy is provided to DOE. Reply 2: Copy of the contract copy is also provided to DOE.	Please provide complete copy of contract document. Copy of contract with Emergent ventures has been provided. Hence the CL is closed.
CL 6 It may be clarified as to why other alternatives such as solar, wind, biomass etc are not considered as alternatives.	Table 1 6.b.c.ii	SJVN has the directive of implementing hydro power projects in the state. It does not have the mandate for other projects; hence other alternatives are not considered. Memorandum of Association and Article of Association is enclosed.	Please provide copy of Memorandum of Association and Article of Association



VALIDATION REPORT

		Reply 2: Copy of the Memorandum of Association and Article of Association is provided to DOE.	Memorandum of Association and Article of Association have been provided. Hence the CL is closed.
CL 7 It may be clarified whether data given in DPR was used in approval of project activity by Public Investment Board and Cabinet Committee on Economic Affairs.	Table 1 6.c.xx.i	<p>The DPR was prepared for 412 MW RHEP and the same has been recommended by PIB and approved by CCEA. It is therefore, evident that all the technical data including hydrology of DPR was used in the approvals.</p> <p>AS explained above in CAR 1 and CAR 20 the cost was revised in march 2006 level and design energy was also revised as mentioned in PIB memorendaum and PIB MOM . IRR and Data given in PIB memorandum is used for approving the project by PIB.</p> <p>The same has been mentioned in CCEA draft note as given in declaration by Chairman and Managing Director of SJVNL</p>	As explained in CAR above and also evident from minutes of meeting of PIB that cost and design energy were revised and revised cost and design energy were approved and recommended by Pib and revised cost was approved by CCEA. The capacity of project in DPR and final capacity is same. Hence the CL is closed.
CL 8 Project participant has carried out EIA study. Brief details of environmental impacts and Environment management plan are provided in PDD. A copy of air quality data (as per EIA/EMP report) as mentioned in PDD may kindly be provided.	Table 1 10.d	Summary of EIA is provided to DOE. Air quality data is not mentioned in PDD , it was mentioned air quality is within standards. The entire EMP is available on SJVNL website	Summary of EIA is provided. The EMP is available on SJVNL website and it has been reviewed by thevalidation team including the data. Hence the CL is closed.



APPENDIX B: EXPLANATION OF HOW DUE ACCOUNT OF COMMENTS WAS TAKEN BY THE VALIDATION TEAM

COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the modalities for the Validation of CDM projects, the DOE shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available.

BUREAU VERITAS CERTIFICATION published the project documents on the UNFCCC CDM website (<http://cdm.unfccc.int>) on 23/05/2009 and invited comments within 21/06/2009 by Parties, stakeholders and non-governmental organizations. The table below describes how due account of the comments received for the CDM project “Hydro electric power project by SJVNL in Himachal Pradesh ” by Satluj Jal Vidyut Nigam Limited (SJVNL) and International Bank for Reconstruction and Development (“World Bank”) as Trustee of the Spanish Carbon Fund was taken by Bureau Veritas Certification.

VALIDATION REPORT



Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
1	Himanshu Thakkar (ht.sandrp@gmail.com) South Asia Network on Dams, Rivers & People, Delhi, India (www.sandrp.in) Submitted by: sandrp, ht.sandrp@gmail.com	18/06/2009	<p>Based on reading of the Project Design Document dated Dec 3, 2008 (version 1 as available on the UNFCCC website) for the above project and having monitored India's power sector and this project over the last few years we reach the conclusion that it will not be appropriate to accept the project for CDM credits. Some of the main reasons for this conclusion are listed below.</p> <p>1. The project is clearly not additional: In Step 1 of the section B.5 for proving additionality, the PDD says, "In the absence of CDM benefits, SJVNL has the option of not to go ahead with project execution due to the barriers that exist against the implementation of hydropower projects." This is completely wrong. There are no barriers to large hydro projects in India. It is the government policy to push</p>	<p>1) During the course of validation the additionality shown is using investment analysis and Common Practice Analysis. Project is not common practice in the area is being addressed In Common Practice Analysis in the PDD,</p> <p>The PIB clearance obtained for the project mentions the consideration of CDM benefits for the project. Board resolution of SJVNL indicates approval for carbon credit. Draft CCEA note given by SJVNL to Ministry of Power, declaration from Chairman and Managing Director of SJVNL indicates that carbon revenue is considered for this project and also mentions CDM benefits</p> <p>Project submission to CEA is only</p>	<p>1) Additionality has been demonstrated by investment analysis and common practice analysis. The validation report describes regarding validating investment analysis and common practice analysis. Barriers have been removed from PDD during the course of validation. Implementation agreement with Govt. of Himachal Pradesh is for allocation of project and approval of central Electricity Authority is only techno-economic clearance. IRR analysis is only done by Pub Investment Board</p> <p>The guidelines on Public investment/expenditure, Government of India states that only projects with IRR exceeding 12% should be posed to Public Investment Board (PIB) for approval. The Memorandum for</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			large hydro projects to the maximum possible extent, with provision of all the available resources. In case of Rampur, the financial resources are already in place with the debt portion being funded by the World Bank, and the equity portion coming from SJVN, the project developers and the Himachal Pradesh Government, which is partner in the project. The decision to allocate these resources have been taken long back, long before the issue of CDM issue surfaced and when these decisions were taken, there was no mention of CDM benefits. Most crucially, SJVN, entered into implementation agreement for the project with the Himachal Pradesh government on Oct 20, 2004 and the project authorities submitted the proposal to the Central Electricity Authority for their concurrence on June 10, 2005, including detailed costs for the project. In these documents there was no mention of the CDM	for Techno Economic Clearance (TEC) approval. IRR calculation and Financial analysis is not done by CEA. IRR and financial analysis is carried out by PIB only which indicates consideration of carbon revenues. Implementation Agreement signed on October 20, 2004 for the project indicates allocation of project to the promoter. Implementation agreement is included in the revised PDD. Ultimately, IRR analysis is done by PIB for 35 years entire project life time. PIB recommends project with internal benchmark 12% for consideration of Cabinet Committee on Economic Affairs (CCEA). In this project case, PIB recommends project to CCEA with carbon credit benefits, as returns are less than 12% without carbon credit benefits. After detailed deliberation, CCEA sanctions the project cost which is referred to as investment decision. Since IRR calculation and Financial analysis is not done by CEA, the same has been carried out by PIB and PIB has mentioned about	Public Investment Board (PIB) states the IRR is less than 12%. However, the project was still approved and recommended by Public Investment Board and it was stated in the memorandum for PIB that Satluj Jal Vidyut Nigam Ltd is exploring the possibilities of obtaining carbon credits and accordingly carbon revenues shall also form of cash flows. The draft CCEA note given by project participant to Ministry of power also states the same. SJVNL has taken Board approval for taking carbon credits. A written declaration was also provided by the Chairman and Managing Director wherein it is stated that carbon revenues were considered in CCCEA approval. From all the discussions above, it is seen that carbon revenues were a decisive factor in the decision to proceed with the project activity which is in line with EB 49



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			<p>benefits, thus the project authorities are giving a wrong and misleading picture to the UNFCCC for gaining undue CDM benefits. As mentioned on page 28 of the PDD, "The project signed Letter of Intent with the IBRD as the Trustee of Spanish Carbon Fund on March 13, 2007", over 2.5 years after it signed implementation agreement and 2 years after it submitted project viability documents to CEA, which again nails the lie about project requiring CDM benefits for its viability. Interestingly, the signing of the implementation agreement in 2004 is not even mentioned in the Chronology of events given on page 28 of the PDD.</p> <p>2. On the question of alternative scenarios, the PDD suggests: "In the above, following plausible alternatives to the project activity are identified.</p> <p>1. The proposed project activity not undertaken as a CDM project</p>	<p>carbon revenues. Since Financial analysis is not carried out by CEA during TEC, CDM is not mentioned there. CEA accords techno economic clearance of the project.</p> <p>2) The demand- supply scenario of power in the country is huge and growing. The alternative scenarios explained in the PDD are the only plausible alternatives to the project activity as there is very limited that can be achieved with the options</p>	<p>Annex 22</p> <p>2) .The validation team agrees with the response of project participant that Satluj jal Vidyut Nigam Ltd has the directive of implementing hydro project. Copy of Article of Associatio and memorandum of Association of</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			<p>activity 2. Continuation of power generation in existing and new grid connected thermal power stations”.</p> <p>However, this is completely wrong and misleading. Around 35-40% of the electricity generated in India is and in the NEWNE grid in question is lost in transmission and distribution. Taking measures to reduce this to 15% is a huge option. Secondly, the electricity use is highly inefficient and there is huge scope for saving electricity by increasing this efficiency. Thirdly, the existing projects are generating electricity at optimum level and there is huge scope for achieving greater generation from these projects. Moreover there are large number of universally acceptable climate friendly generation side options like the solar, wind, biomass, micro hydro, generation of power from the flow of the water (without creating any dams or tunnels), among others.</p>	<p>mentioned above in terms of service and output equivalent to the project activity. The RHEP is a 412 MW hydro power project which will supply power to the NEWNE grid. To compare a project of such generation capacity with other climate friendly forms of energy such as solar, wind, biomass or mini-hydel is imprudent. These are only complimentary technologies which can help bridge the demand – supply gap but cannot alone meet the growing power demands. It must also be noted that the RHEP is located downstream of the Nathpa Jhakri HEP which is being operated by SJVN. Concerns about plant coordination and water availability (especially in light of the high silt concentration being faced by Nathpa Jhakri) between two different developers were dealt with effectively by the government's decision to allot RHEP to SJVN. SJVN has the directive of implementing hydro power projects in the state. It does not have the mandate for other projects; hence</p>	<p>Satluj jal Vidyut Nigam Ltd have been provided. Thus SJVNL can not consider implementing other projects like wind etc of similar capacity. Also as per para 105 of VVM ver 1.2, since methodology prescribes baseline no further analysis of identification of alternatives is required for greenfield projects</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			<p>All these options are available, with huge potential, as accepted by the government, and not mentioning these viable options with huge potential is actually giving wrong, misleading picture. There are other options for proving electricity to justifiable needs. Not all demands of electricity are justifiable or socially acceptable. While some efforts are being taken up on these lines, but they are very small, insufficient efforts and if at all, CDM benefits should be going for such efforts.</p>	<p>other alternatives are not considered Copy of the Memorandum of Association and Article of Association is provided to DOE. Moreover since Methodology prescribes baseline, no analysis is required as per VVM para 105, version 1.2</p>	
			<p>3. The calculation of project IRR as 9.85% as against the calculated Weighted Average Cost of Capital of 10.95% is wrong and</p>	<p>3) During the course of validation, WACC is removed. Actual Benchmark considered is PIB</p>	<p>3) During the course of validation, IRR has been revised. IRR is calculated for 35</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			<p>misleading. It should be noted that as the tariff regulations prevalent in India, all the costs of the projects that the project authorities can creditably show to the genuine costs is allowed as pass through cost and in addition, 14% return on equity is guaranteed. So the project proponent are guaranteed AT LEAST 14% return on equity investment, way above the 10.95% WACC calculated by the PDD.</p> <p>In India most power purchase agreements for large hydro projects determine the tariff on a cost plus basis. Per kWh tariffs are periodically calculated such that the developer will receive a return of 14% on their equity contributions. This costing places the risk of cost overruns and low hydrological flows on the electricity purchaser rather than on the developer. The power purchase agreement for RHEP is on a cost plus basis and thus the project should be considered non-</p>	<p>benchmark 12%. IRR has been calculated in accordance with PIB memorandum with and without free power for 35 years project life time .It may be noted that the project proponent has used the financial parameter Project IRR and not equity IRR in its analysis. While it is true that the tariff regulations in India take into consideration the project costs and operational life of the project, it must be noted that the gestation period of the project is not accounted for in the tariff estimations. As is well known that large hydro power projects run the risk of cost overruns (sometimes of more than 200%) and time delays which diminish project returns and impact the possibility of attracting funds for such projects in future. Infact the Nathpa Jhakri project immediately upstream of RHEP was delayed by seven years and cost overruns of more than three times than the original estimated costs.: At present, tariff regulations are framed by CERC for a block of 5 years. However, investments made</p>	<p>years which is the lifetime of project. WACC has been removed from PDD as it was not used as a benchmark for approving the project. The benchmark of 12% which was used by PIB in approving and recommending the project has been incorporated in PDD. Supporting documents have been provided. The benchmark used now is in line with additionality tool. The validation team agrees with the response of project participant that gestation period is not accounted in tariff estimations.</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			<p>additional, since the returns of the project are all but guaranteed at 14%. This is well above the stated benchmark. In India, hydropower projects rarely have difficulty finding a developer. So if SJVNL would not have developed the project, another developer almost surely would have. The IRR analysis spreadsheet is not shown for the the actual lifetime of the project.</p> <p>4. The statement in PDD in section A.2 and again in Table B.8 that the project will generate 1770 Million Units Electricity in 90% dependable year is wrong. According to the Concurrence given by Government of India's Central Electricity Authority to the project on Dec 16, 2005, the</p>	<p>in the power sector are recovered over the life of a project i.e, 35 years for a hydro project, which is much more than any other business. Investors, particularly PSUs have to remain invested in the project for such long period and there is no option to exit in case return is not attractive. Translating this 14% RoE into equivalent cash flows over the life of the project gives an IRR of only 10.13% in case project is implemented and operated as per design. Given the huge uncertainty faced in the implementation of hydropower projects, most developers would prefer to go in for relatively easier and quicker to implement, coal based projects.</p> <p>4).The RHEP project is located downstream of Nathpa Jhakri Hydro project and will be operated in tandem with the Nathpa Jhakri. The Nathpa Jhakri project has faced siltation problems since its commissioning, due to which its operations were brought to halt on several occasions when the silt</p>	<p>4) The validation team aggress with the response of the project participant. The minutes of meeting of PIB clearly record that design energy has been revised to 1770 GWh due to heavy siltation resulting in shutdowns. The project will be</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			<p>project will generate 1969.69 million units electricity generation in a 90% dependable year. This statutory concurrence is given by the CEA under section 8 of the Indian Electricity Act of 2003. By under reporting the generation by 11.3%, the project authority is again trying to show that the project is less viable and hence deserves CDM credits. This is clearly wrong and misleading.</p> <p>5. Similarly, the PDD mentions in Table B.8 that the project cost is Rs 20470 million, when the approved project cost by the CEA is Rs 19841.8 million, including Rs</p>	<p>concentration was more than 4000 ppm and for reservoir flushing during high flows. The concurrence accorded by CEA in Dec 2005 did not account for the high silt content in Nathpa Jhakri in the design energy calculations of 1969 million units. However when the design energy was re-assessed after taking into consideration the siltation problem involved, it was found to be 1770 million units. Thus The generation is revised as mentioned in PIB minutes of meeting and draft CCEA note. due to silt concentration and Nathpa Jhakri HEP performance. The total energy generation of the 412 MW Rampur HEP as mentioned in PIB memorandum is 1770 MU (1 MU= 1 GWh), this design energy is ultimately approved by PIB since it is mentioned in PIB memorandum and PIB minutes of meeting</p> <p>5) It is true that as per the concurrence provided by the Central Electricity Authority in December 2005, the project cost Rs 19841.8.</p>	<p>operated in tandem with Naptha Jakhri hydroelectric project and this project has faced shutdowns due to heavy siltations and accordingly design energy of Rampur Hydro electric power project has been revised.</p> <p>5) the project cost was revised at march 2006 levels. The project cost approved by CEA was at march 2005 levels. The</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			<p>2495 million for interest during construction. Here again by showing higher cost, the project authorities are trying to push for additional credits that they do not deserve.</p> <p>6. The sensitivity analysis shown in the PDD in tables B.9 to B.13 is also misleading since most of these factors are already taken care of in the project Appraisal. If the Appraisal is not proper, the impact of the adverse consequences of the same should naturally be the responsibility of the project developers and cannot</p>	<p>However, during the further review process in Gol and before the award of final investment approval (from Cabinet Committee on Economic Affairs in January, 2007), the project cost figure was revised/ updated to reflect the March, 2006 price level (as against the March, 2005 price level used during CEA concurrence). The final investment approval provided by Gol in January, 2007 is for project cost of Rs. 20470 million and this is before the project start date and Higher revised cost of 20470 Million INR is approved by PIB memorandum since the same has been mentioned in PIB Minutes of Meeting and CCEA note</p> <p>6)The objective of sensitivity analysis is to help in knowing the critical risk factors for the success of the project and accordingly help the developer look for appropriate strategies to mitigate those risks.</p>	<p>revised cost at march 2006 levels as recommended by PIB and approved by CCEA is Rs 20470.3 million.</p> <p>6) In the revised PDD, the sensitivity has been carried out on project cost, operation and maintenance cost, tariff, and generation. The validation team is of the opinion that parameters are in line with para 17 of EB 51 Annex 58. Project IRR of the</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			be reason for CDM benefits.	<p>This is also the requirement under the "Guidance on investment Analysis" EB 51, annex 58 to check the robustness of the financial analysis. In addition, if a project has been appraised, it does not imply that it is free from risks, especially large hydro power projects. Sensitivity has been carried out following four parameters, project cost, change in energy generation, change in O&M cost, change in tariff.</p> <p>The PIB clearance obtained for the project mentions the consideration of CDM benefits for the project. Draft CCEA note given by SJVNL to Ministry of Power, declaration from Chairman and Managing Director of SJVNL and board resolution of SJVNL also mentions CDM benefits</p>	project with sensitivity on above parameters is still less than the benchmark. The details on sensitivity is provided in section 3.7.3 of validation report.
			7. In the Barrier Analysis the PDD mentions that the project suffers from Investment barrier and that "During the design stage of the	<p>7) During the course of validation investment barrier has been removed from the PDD.</p> <p>The PIB clearance obtained for the</p>	7) During the course of validation, the investment



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			<p>project, foreseeing the high project risk, the project entity clearly indicated it will seek carbon finance to support investment and maintenance cost of the project.” This is wrong and misleading statement. As mentioned above, in the project investment agreement or application of the project to CEA for concurrence of cost and technical parameters, there is no mention of seeking carbon finance.</p> <p>8. The Institutional, Regulatory and Technological barriers described in the PDD are no barriers, they are only steps required for any project. If the project appraisal is very poor, than the project authorities should suffer the consequences of the same. This was indeed the case of Nathpa Jhakri, whose cost escalation, damages and lower generation are described in this section. Consequence of poor appraisal cannot be a reason for</p>	<p>project mentions the consideration of CDM benefits for the project. Draft CCEA note given by SJVNL to Ministry of Power, declaration from Chairman and Managing Director of SJVNL and board resolution of SJVNL also mentions CDM benefits</p> <p>8) During the course of validation investment barrier has been removed from the PDD,</p>	<p>barrier, institutional and regulatory barrier and technology barriers have been removed from revised PDD.</p> <p>8) During the course of validation, the investment barrier, institutional and regulatory barrier and technology barriers have been removed from revised PDD.</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			<p>claiming CDM benefits. The World Bank's Project Completion Report for Nathap Jhakri accepted that poor appraisal was indeed one of the significant reasons for the cost and time over runs for that project.</p> <p>9. A project of such magnitude should have shown that it has followed the recommendations of the World Commission on Dams, but neither the project has shown it, nor has it followed the WCD recommendations. This disqualifies the project also under the European Union's Norms.</p> <p>10. The Project cannot be defined as sustainable development, since it will adversely affect the local environment and the communities. The management plan put in place have not been formulated or decided with free, prior and informed consent of the local communities and the adverse</p>	<p>9) As per Indian legislation, does not require compliance to recommendation to WCD .Even CDM rules and regulations does not require compliance to WCD</p> <p>10) Stake holder meeting and Resettlement action plan ,meeting was held for this project on October 26, 2005 and 30 March 2007 respectively. MoM of both these meetings is provided to DOE for validation.</p> <p>A third party study conducted by <i>Palampur University</i> experts on crop</p>	<p>9) Indian legislation does not require compliance to World Commission on Dams recommendations and CDM rules also does not require compliance to World Commission on Dams recommendations</p> <p>10. The project participant has provided minutes of meeting for the stakeholder meeting. During the site visit, validation team interacted with few stakeholders. The concerns raised by stakeholders and how project participant has addressed the</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
			<p>impacts will remain unmitigated. Thus the local people will suffer the adverse impacts, but will get no benefits from the CDM.</p> <p>Under the circumstances, validation of the project in current form for CDM credits will not be appropriate and it would be absurd if the project gets validated, registered as CDM activity or gets CERs.</p>	<p>damage is submitted to DOE. The study indicates that there no damage on the crops due the RHEP project activity</p> <p>A copy of the study carried out by the Central Institute of Mining and Fuel Research is also submitted to DOE</p> <p>Further SJVN is also compensating the local people with land and houses. This information is also available with the Project Information Centre</p> <p>On the account of feedback received from stakeholders SJVNL has made the following provisions</p> <ul style="list-style-type: none"> • A budgetary provision per annum has been kept aside for community development works during the construction stage with equitable distribution among eight Gram Panchayats. • A Resettlement Action Plan has been prepared which includes provisions for payment for 	<p>concerns are detailed in section 3.10 of the validation report. Validation team is of the opinion that concerns of stakeholders have been appropriately addressed by the project participant.</p> <p>In addition project participant has established Project Information centre (PIC) for project affected families. The validation team visited the Public Information centre during the site visit. The project participant has also prepared Resettlement and Rehabilitation scheme for project affected families. A copy of the same was provided to the validation team. A meeting regarding this was also held with project affected families on 30th March 2007 at village Bael. A copy of the minutes of this meeting was also provided to validation team.</p> <p>The project participant is also</p>



VALIDATION REPORT

Sr. No.	Details of the commenter	Date of Comment	Comment [unedited]	Response by project participant	Explanation on how account is taken by DOE
				<p>compensation, resettlement assistance, implementation arrangements consisting of institutional mechanisms, grievances redressal procedures, monitoring and evaluation arrangements and budget provisions.</p> <ul style="list-style-type: none"> • Mobile facility van has been extended to all villages in the project affected area and the communities are also allowed use of a project dispensary at Bael. • Employment will be provided as per provisions of law enforced by the State Govt. and preference in employment will be given to the project affected families. <p>SJVN will also be contributing 2% of its CERs earned towards promoting sustainable activities in the region.</p>	<p>implementing community development scheme such as providing mobile etc as detailed in Resettlement and Rehabilitation scheme. Employment is also provided to project affected families.</p> <p>As explained above, the validation team is of the opinion that the comments have been appropriately addressed.</p>