VALIDATION REPORT

5 MW RENEWABLE ENERGY PROJECT FOR A GRID SYSTEM, AT ROHRU TEHSIL, SHIMLA DISTRICT, HIMACHAL PRADESH IN INDIA

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DET NORSKE VERITAS AS

VALIDATION REPORT

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Client: Gowthami Hydroelectric Power Company (P) Limited	Client ref.: Mr. Ravi Kanth Mallina

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Summary:
Det Norske Veritas Certification AS (DNV) has performed a validation of the "5 MW renewable energy project for a grid system at Rohru Tehsil, Shimla district, Himachal Pradesh in 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 simplified modalities and procedures for small-scale CDM project activities and the subsequent decisions by the CDM Executive Board. This validation report summarizes the findings of the validation.
The validation consisted of the following three phases: i) a desk review of the project design documents, ii) follow-up interviews with project stakeholders and iii) the resolution of outstanding issues and the issuance of the final validation report and opinion. Following the review of the project by the Board at its 38th meeting, the PDD and validation report have been corrected as requested by the Board to incorporate the revised investment analysis submitted in response to the review. The validation report was updated accordingly and also includes the further information on the common practice barrier contained in the response to the request for review.
In summary, it is DNV's opinion that the project, as described in the project design document version 03 dated 29 March 2008, meets all relevant UNFCCC requirements for the CDM, is eligible as category I.D. small-scale CDM project activity and correctly applies the approved simplified baseline and monitoring methodology AMS-I.D version 10. Hence, DNV requests the registration of the "5 MW renewable energy project for a grid system" at Rohru Tehsil, Shimla district in Himachal Pradesh, India by Gowthami hydro electric company (P) Ltd. as a CDM project activity.

Report No.: 2007-1031	Subject Group: Environment
Report title: 5 MW renewable energy project for a grid system, at Rohru Tehsil, Shimla district, Himachal Pradesh in India	
Work carried out by: Anjana Sharma, Michael Lehmann, K.Venkata Raman	
Work verified by: C.Kumaraswamy	

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CH_4	Methane
CL	Clarification request
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DNV	Det Norske Veritas
DNA	Designated National Authority
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
HPSEB	Himachal Pradesh State Electricity Board
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
N_2O	Nitrous oxide
NGO	Non-governmental Organisation
NR	Northern Regional Grid.
ODA	Official Development Assistance
PDD	Project Design Document
PLF	Plant load factor
PPA	Power Purchase Agreement.
UNFCCC	United Nations Framework Convention on Climate Change

1 INTRODUCTION

The Gowthami Hydroelectric Company (P) Ltd. has commissioned Det Norske Veritas Certification AS (DNV) to perform a validation of the "5 MW renewable energy project for a grid system at Rohru Tehsil, Shimla district in Himachal Pradesh, India" by Gowthami Hydro Electric Company (P) Limited project in India (hereafter called "the project"). This report summarises the findings of the validation of the project, performed on the basis of UNFCCC criteria for small-scale CDM projects, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation team consists of the following personnel:

Ms Anjana Sharma	DNV Certification, India	Team leader, GHG auditor
Mr. K. Venkata Raman	DNV Certification, India	CDM validator
Mr. Michael Lehmann	DNV Certification, Norway	Energy sector expert
Mr C.Kumaraswamy	DNV Certification, India	Technical reviewer

1.1 Validation Objective

The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the 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).

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the simplified modalities and procedures for small-scale CDM project activities and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology AMS-I.D. The validation team has, based on the recommendations in the Validation and Verification Manual /17/ employed a risk-based approach, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

1.3 Description of Proposed CDM Project

The project activity is a run-of-river hydroelectric power plant that envisages utilising the water of the river Andhra Khad, a tributary of the river Pabbar, for power generation. The project activity is located upstream of the existing Andhra Stage I Hydroelectric power plant (of 16.95 MW capacity) owned by Himachal Pradesh state electricity board (HPSEB). The installed capacity of the project activity is 5 MW. Based on the plant load factor of 45%, it is expected that the proposed project will result in gross generation of approximately 19.71 GWh per year.

The plant load factor has been assumed based on the average PLF of 42.5 %. The net electricity supply to the grid will be 18.13 GWh per year (assuming 8% auxiliary consumption).

The generated electricity from the project activity will be exported to Northern regional (NR) grid through the Himachal Pradesh state electricity board (HPSEB). The Northern Regional grid is fossil fuel dominated and the trend is expected to continue in the near future as well. Therefore, the generation of electricity from the proposed project activity is non–GHG source and it is expected that the proportion of fossil based electricity in the NR grid will be displaced by the project activity, leading to lower carbon intensity in the grid. It is expected that the proposed project activity will result in average annual emission reduction of 14 380 tonnes of CO_2 equivalents (t CO_2 e) throughout the fixed crediting period of 10 years.

2 METHODOLOGY

The validation consists of the following three phases:

I a desk review of the project design documents
II follow-up interviews with project stakeholders
III the resolution of outstanding issues and the issuance of the final validation report and opinion.

In order to ensure transparency, a validation protocol was customised for the project, according to the Validation and Verification Manual /17/. The protocol shows in transparent manner criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organises, 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 validation protocol consists of three tables. The different columns in these tables are described in Figure 1.

The completed validation protocol for the “5 MW renewable energy project for a grid system” at Rohru Tehsil, Shimla District in Himachal Pradesh, India, is enclosed in Appendix A to this report.

Findings established during the validation can either be seen as a non-fulfilment of validation protocol criteria or where a risk to the fulfilment of project objectives is identified. Corrective Action Requests (CAR) are issued, where:

i) mistakes have been made with a direct influence on project results;
ii) validation protocol requirements have not been met; or
iii) there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be certified.

The term Clarification may be used where additional information is needed to fully clarify an issue.

Validation Protocol Table 1: Mandatory Requirements for CDM Project Activities			
Requirement	***Reference***	***Conclusion***	***Cross reference***
The requirements the project must meet.	*Gives reference to the legislation or agreement where the requirement is found.*	*This is either acceptable based on evidence provided (**OK**), a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements or a request for **Clarification (CL)** where further clarifications are needed.*	*Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process.*

Validation Protocol Table 2: Requirement Checklist				
Checklist Question	***Reference***	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	*Gives reference to documents where the answer to the checklist question or item is found.*	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.*	*This is either acceptable based on evidence provided (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below).A request for **Clarification (CL)** is used when the validation team has identified a need for further clarification.*

Validation Protocol Table 3: Resolution of Corrective Action Requests and Requests for Clarification			
Draft report corrective action requests and requests for clarifications	***Ref. to Table 2***	***Summary of project participants' response***	***Final conclusion***
If the conclusions from the draft Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	*Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification Request is explained.*	*The responses given by the project participants during the communications with the validation team should be summarised in this section.*	*This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".*

Figure 1 Validation protocol tables

2.1 Review of Documents

The PDD, version 02 dated 23 July 2007, previous versions, and the revised version 03 dated 29 March 2008/1/ submitted by Gowthami Hydroelectric Company (P) Limited and additional background documents related to the project design, baseline and emission reduction calculations were reviewed during the validation.

2.2 Follow-up Interviews

Issues identified during the desk review were resolved through communications with the project proponent. The main topics of the interviews are summarised in Table 1.

Table 1 Interview topics

Interviewed organisation	Interview topics
Gowthami Hydro Electric Company Limited/ Zenith Energy Private Limited.	➢ Baseline determination and applicability of baseline methodology AMS-I.D. ➢ Demonstration of additionality/financial analysis. ➢ Relevant clearances, approvals and consents ➢ Status of host country approval ➢ Stakeholder consultations ➢ Monitoring plan ➢ Availability of resources, training needs. ➢ Procedures for maintenance and calibration of monitoring equipments, day-to-day reporting etc.

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve any outstanding issues which needed to be clarified for DNV's positive conclusion on the project design. The corrective action requests and requests for clarification raised by DNV, presented to the project participants in DNV's draft validation report of 23 February 2007 (rev. 00) were resolved during communications between the project participant and DNV. To guarantee the transparency of the validation process, the concerns raised and responses given are documented in the validation protocol in Appendix A.

Since modifications to the project design were necessary to resolve DNV's concerns, the client decided to revise the PDD and resubmitted the version 02 of the PDD on 23 July 2007. After reviewing the revised PDD, DNV issued this final validation report and opinion.

The project has undergone a review at the 38th meeting of the CDM Executive Board, addressing issues related to the investment analysis of the project. Upon the request of the EB, the PDD and the validation report have been updated to incorporate the revised investment analysis as submitted in response to the review. This final validation report is based on revised project design document; version 03 dated 29 March 2008. It also includes the response provided regarding the common practice barrier in the initial response to the request review.

2.4 Internal Quality Control

The draft validation report including the initial validation findings underwent a technical review before being submitted to the project participants. The final validation report underwent another technical review before requesting registration of the project activity. The technical review was performed by a technical reviewer qualified in accordance with DNV's qualification scheme for CDM validation and verification.

3 VALIDATION FINDINGS

The findings of the validation are stated in the following sections. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

The final validation findings relate to the project design as documented and described in the revised and resubmitted project design documentation (version 03 dated 29 March 2008).

3.1 Participation Requirements

The project has been proposed as a unilateral project. The sole project participant is Gowthami Hydroelectric Company (P) Ltd. of India. The host country India has ratified the Kyoto protocol and has an established a DNA, the National Clean Development Mechanism Authority, MoEF. The DNA of India has approved the project on 26 July 2006. The DNA's approval letter also confirms that the project assists in achieving sustainable development /2/.

The project does not involve any public funding and there is hence no diversion of any official development assistance funds.

3.2 Project Design

The project activity is a run-of-river hydroelectric power project located in Gaskuwadi village, Rohru Tehsil, District Shimla in the state of Himachal Pradesh. The project activity utilises the water from the river Andhra Khad, a tributary of the river Pabbar. The project activity involved the construction of trench type diversion weir, intake chamber, de-silting chamber, underground free flowing pressurised tunnel, penstock with saddles, anchor blocks, power station and tail race channel for discharging water back into the river. The plant is assumed to operate at a plant load factor (PLF) of 45% which has been estimated on the basis of average plant load factor of 42.5% for the Andhra Stage I power plant (actual PLF achieved during the last four years). The Andhra Stage I plant is located downstream of the project plant (Andhra Stage II) on the river Andhra Khad and was established by Himachal Pradesh Government. DNV was also able to verify that the average PLF obtained by other small scale hydropower plants in the state of Himachal Pradesh is in between 35% to 51%. The official data from the Himachal Pradesh state Electricity Board (HPSEB) was provided as supporting evidence for this. In light of the above, the assumption of a 45% PLF for the proposed project activity seems reasonable

The project activity involves the installation of 2 horizontal Francis turbines each of 2.5 MW capacity, along with synchronous brushless generators for power generation. The generated power at 66 kV will be dispatched through an 8 km long transmission lines connecting the project site to the HPSEB substation of existing Andhra Stage I Power plant.

The starting date of the project activity is 15 April 2005. The contract signed with the equipment supplier Boving Fouress Limited has been provided as an evidence for this. The operational lifetime of the project activity has been estimated as 30 years. The project developer has selected a fixed crediting period of 10 years starting from 01 December 2007 or the date of registration of the project activity which ever occurs later.

3.3 Baseline Determination

The approved baseline methodology AMS-I.D, version 10, "Renewable electricity generation for a grid" has been applied for the proposed project activity. The baseline methodology chosen is applicable and justified for the project, since the maximum output capacity of the project is 5 MW, which is well within the maximum output capacity of 15 MW, as specified for type I small scale projects. The project activity is a grid connected renewable power generation activity that envisages utilising the water flowing in the river Andhra Khad, a tributary of the river Pabbar. The project proponent has selected the northern regional grid of India as the system boundary for the project activity in accordance with the EB guidance for large countries like India.

No alternative scenario than the continued supply from the existing grid has been discussed. The selection of the baseline scenario is in accordance with the baseline methodology AMS-I.D. In the absence of the project activity, the same amount of electricity would have been produced in the fossil fuel dominated existing/new plant of the northern regional grid of India. In the current scenario, India is facing an energy deficit and also the energy sector in the country is fossil fuel power dominated. This applies to the northern grid as well. DNV was also able to verify from the statistics available from the Central Electricity Authority (CEA)[*] that the focus of government is on thermal power generation as compared to hydropower generation. Based on the officially published statistics, the selection of the combined margin emission factor of the northern regional grid as baseline scenario is deemed reasonable.

The baseline emission factor for the northern regional grid is established based on the approved methodology AMS-I.D using the "combined margin" approach as detailed in ACM0002. The grid emission factor has been estimated as the weighted average (50:50) of the simple operating margin (OM) of 986 t CO_2/GWh and the build margin (BM) of 602 tCO_2/GWh. The simple OM has been determined e*x ante* based on vintage data for last three years (2003-04, 2004-05, 2005-06). The BM has been determined e*x-ante* based on the sample group *m* which consists of most recent capacity additions to the electricity system that comprises 20% of the system generation. The resulting combined margin emission factor (including imports) of 793 tCO_2/GWh is determined *ex-ante* and is to be applied throughout the 10 years crediting period. The OM and BM emission factor has been derived from the official data published by Central Electricity Authority (CEA)[†].

3.4 Additionality

The project activity aims at utilising the hydro potential available in the state of Himachal Pradesh. The project activity is not a business-as-usual scenario due to the following reasons:

- Investment barrier: It has been argued that the project is not an economically attractive option in the absence of CDM revenues. The project IRR has been selected as a financial indicator to demonstrate financial viability of the project. It has been compared against a benchmark of weighted average cost of capital (WACC). The comparison of the project IRR with WACC benchmark is justified based on the fact that WACC is the weighted average of the total cost of different components of the total investment. It presents the minimum returns that a project

[*] CEA Data, Power scenario: Northern Grid, India, http://www.cea.nic.in/planning/POWER%20SCENARIO%20AT%20A%20GLANCE/POWER%20SCENARIO%20AT%20A%20GLANCE.pdf

[†] CEA CO2 BASELINE DATA: http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm

proponent can expect after considering the risks associated with the components (debt, equity or any other source of finance) of the investment.

DNV has also confirmed that this is the first major investment opportunity for the project developer (as presented to EB in response to this review issue). It has been confirmed that Gowthami Hydroelectric Power Company was established in year 2003 for the development of this hydropower plant. The proposed project is their first venture into the field of hydropower generation. DNV was able to verify the same from the certificate provided by the Chartered Accountant /16/. Therefore, in the absence of any internal benchmark for similar investment in the similar conditions, WACC is deemed reasonable and conservative benchmark for evaluating the financial analysis of the proposed project. The project developer has calculated WACC for a period of 20 years. DNV would like to indicate that the loan repayment period is 8 years. After that, the whole of the funds will be in the form of equity. Hence, while calculating the WACC for 20 years, the project developer has considered the relative weights of debt and equity over this period of time which is reasonable. The WACC benchmark works out to be 15.92 %. The detailed calculations of WACC have been verified by DNV /14/ (b).

DNV also verified the revised IRR calculations /14/ (b). The project developer has carried out the investment analysis for a period equivalent to the lifetime of the project i.e. 20 years. This is in accordance with the EB's guidance on investment analysis (EB – 35). Most of the assumptions like the project cost, electricity tariff, O&M costs, interest on loan, loan repayment period etc. have been sourced from the authentic and verifiable source i.e. detailed project design report and Power purchase agreement. Both these sources have been verified by DNV. The other assumptions like the taxes, tax holiday, depreciation etc. are in accordance with the prevalent tax laws in the India. CER price per ton of CO_2 equivalent has been assumed to be € 8.00.

Furthermore, keeping in view the project type and geographical conditions in the project area, the salvage value has been assumed to be 14% at the end of 20 years. This salvage value is based on the following assumptions:

- Value of land at the end of 20 years – 100%
- Value of plant and machinery at the end of 20 years – 5%.
- Value of current assets at the end of 20 years – 100%.

The calculation of salvage value has been verified by DNV.

Based on above mentioned assumptions, the project IRR has been determined to be 12.25% in the absence of CDM revenues. The project IRR improves to 14.42% with the support of CDM revenues. It should be noted that the IRR value with CDM revenues is based on the conservative CER price of € 8.00/ t CO_2 e (as mentioned above) and is highly sensitive to the actual CER price as received by the project developer post verification.

A sensitivity analysis has also been carried out to analyse the affect of variations in the PLF of the proposed project on the financial position of the project activity. The results obtained after assuming 10 % variation are as follows:

	Project IRR	
	Without CDM revenue	With CDM revenue
Base condition	12.25 %	14.42%

10 % increase in PLF/generation	14.06%	16.46%
10% decrease in PLF/generation	10.41%	12.35%

Based on the financial results (as above), DNV is of the opinion that the project faces investment barriers and the CDM revenues help the project proponent to overcome the existing financial barriers.

- Other barriers:

a) Lack of infrastructure: The project is located in an underdeveloped area and the project developer has to invest in providing the basic civic amenities, connecting roads to the project site and long transmission lines from the project site to the 66/22 KV HPSEB substation at Andhra Stage I Power house located at Chirgaon, district Shimla. Due to the remote location of the project, the project developer also has to bear an extra cost for transportation of materials during the construction phase. The project also faces risks due to the unavailability of skilled manpower in the region.

b) Construction risks due to geological barriers: Due to the location of project activity in a hilly area that experiences heavy snowfalls, frequent landslides, flash floods. It suffers from risks during the construction as well as during the operation phase of the project. Further, the project activity is located in an area that has been classified as seismic zone IV as per seismic zoning map of India (I.S. 1992-44). This further increases the risk to the project activity.

c) Hydrological Barriers: The reliable rainfall/snowfall data is not available for the Andhra Khad valley. The nearest rain gauge station is in Rohru. In the absence of any reliable data for Andhra Khad, the power generating potential of Andhra Stage II hydropower plant (project activity) has been estimated based on the average PLF obtained by the Andhra Stage I hydropower plant (located downstream of the project activity) over the last four years. This estimation poses a risk to the accuracy.

Common practice analysis: It has been argued that the northern region of India is dominated by either medium/large scale fossil fuel fired power plants or large scale hydropower plant. DNV was able to verify from the Central Electricity Authority (CEA) data that the share of thermal power in northern region is 58% as compared to 36% share of hydropower. In the state of Himachal Pradesh, the total installed capacity of small scale projects (capacity less than 25 MW) is only 750 MW. These figures reflect that the focus of central/state government is on either large scale fossil fuel power plants or large scale hydropower plants mainly due to lower risks involved and assured rates of return.

DNV was also able to confirm that the investment in small scale hydropower plants is not a common practice in the state of Himachal Pradesh. This has been confirmed from the statistics of Government owned Himachal Pradesh State Electricity Board (HPPSEB)[*] . It is seen that most of the small hydropower plants (capacity less than 25 MW) in Himachal Pradesh are established with Government support. And out of private investments in small scale hydropower sector in the state (under HIMURJA), most of them are expecting CDM revenues. DNV was also able to verify the fact that even the future plans are focussed on mainly medium and large scale hydropower plants[†]. As per the statistics, the share of small hydropower plants (capacity less

[*] statistics of HPSEB: http://www.hpseb.com/schemes_which_are_presently_unde11.htm
[†] Future plans of HPSEB: http://www.hpseb.com/schemes_which_are_presently_unde12.htm

than 25 MW) is only 1% of the total hydropower capacity addition planned for 12th plan. Based on the statistics and also the arguments presented by the project developer, DNV is of the opinion that owing to geological and investment risks faced by the similar type of projects in the region, the establishment of small scale hydropower plants is not a common practice in Himachal Pradesh.

DNV also confirmed that the downstream plant i.e. Andhra Stage I hydropower plant located on the same river was established by Himachal Pradesh state government in year 1987. It enjoys favourable benefits from various agencies as compared to a privately owned power project.

DNV was also able to verify that though the project was conceptualised in year 2001 with the memorandum of understanding between the Government of Himachal Pradesh and Siddhartha Constructions Pvt., limited for the execution of work related to the 2.40 MW Andhra stage II hydroelectric power project, the real action for the project started only under the ownership of Gowthami Hydro Electric Company Limited, when the project changed ownership. The project (with revised installed capacity of 5 MW (2 X 2.50)) ownership was transferred from Siddhartha constructions Pvt. Ltd. to Gowthami Hydroelectric Company Limited in December 2003 as the former company lacked experience in similar type of projects (hydropower plants). DNV was able to verify the same from the detailed project report prepared by Gowthami Hydro Electric Company Limited in December 2004. DNV was also able to verify from the minutes of meeting of the board of directors of M/s Gowthami Hydroelectric Company Ltd, (dated December 2004) that benefits of CDM were considered for the project activity. It was also verified by DNV (through the renewal of bank guarantee) that though an agreement was entered with the civil contractor in September 2004, construction was delayed till September 2005 due to heavy rains and delays from the civil contractor. The project activity received the approval from DNA of host country in July 2006 and it was submitted for validation in September 2006. The verified chronological order of events also demonstrates that the project faced barriers until the time it was implemented.

In conclusion, it is demonstrated that the project faced barriers and that CDM benefits were considered in the decision to precede with the project. The emission reductions resulting from the project activity are therefore deemed additional.

3.5 Monitoring Plan

The approved small scale monitoring methodology AMS-ID, “Renewable electricity generation for a grid” has been adopted for the proposed project activity. The choice of methodology is justified as the project activity is the generation of electricity using hydro potential and supplying the same to the northern regional (NR) grid.

The project monitors the following parameters.

a) Gross electricity generated – measured

b) Net electricity exported to the grid.

c) Auxilliary consumption – difference between gross (a) and net (b)

d) Imports from the grid – measured.

The monitoring of the net electricity exported to the regional grid will be done in accordance with the procedures defined in the Power Purchase Agreement signed between the Himachal

Pradesh State Electricity board and the project developer /3/. The calibration of the meters will be in accordance with the guidelines specified in the PPA.

All the monitored data will be archived for a period of two years after the end of the crediting period. All the supporting documents such as receipts of payments released by Himachal Pradesh State Electricity Board (HPSEB) will also be preserved for cross checking.

The grid emission factor for the northern regional grid has been determined *ex-ante* at 793 t CO_2/GWh and remains fixed for the entire crediting period.

The authority and responsibility for project management, monitoring, measurement, review and reporting has been clearly established. Similarly, the procedures for calibration and maintenance, performance reviews, internal auditing, corrective actions etc. have been defined in the monitoring plan.

3.6 Calculation of GHG Emissions

The project activity will displace a part of fossil fuel based electricity in the northern regional grid of India and thereby contribute to in the reduction of GHG emissions.

Project emissions and leakage: For the *ex ante* emission reduction estimation, the project emissions have been assumed to be zero. However, based on the actual consumption of fossil fuel in the DG sets (for emergency) at the project site, project emissions will be considered for emission reduction calculations. The project activity does not involve any equipment transfer; therefore the calculation of leakage is not required as per baseline methodology AMS-I.D.

Baseline emissions: Baseline emissions are calculated as the product of net electricity supplied by the project activity to the northern regional grid and the grid emission coefficient of the grid. The combined margin emission factor, 793 t CO_2/GWh, has been arrived at as stated in section 3.3 above. The baseline emissions due to the project have been estimated at 14 380 tCO_2e per year, assuming a 45% plant load factor.

Emission reductions: Emission reductions resulting from the project activity are calculated to be equal to the difference of baseline emissions and project emissions (if any), i.e. 14 380 t CO_2 e per year.

3.7 Environmental Impacts

The proposed project is a small scale hydropower plant and the environmental impacts of the project are not considered significant. As per the requirement of the Ministry of Environment and Forests, Government of India, an EIA is not required for small hydroelectric projects. The project does not involve land submergence and resettlement issues since the proposed project site is not a notified area nor is there any threat to the fauna and flora. Consent to establish under the provisions of the Water Act 1974 and Air Act 1981 issued by the Himachal Pradesh State Pollution Control Board for the project activity have been evidenced by DNV /8/.

3.8 Comments by Local Stakeholders

The project developer has identified the following stakeholders and approached them individually for their comments / approvals:

- Himachal Pradesh Energy Development Agency (HIMURJA).

- Himachal Pradesh State Electricity Board.
- Electricity Regulatory Commission of Himachal Pradesh (ERCHP)
- Himachal Pradesh State Environment Protection and Pollution Control Board(EPPCB) – Issued the consent to establishment
- Department of Irrigation, Govt. of Himachal Pradesh.
- Local Village Panchayat.

The project did not receive any negative comments from the local stakeholders.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

The initial version of the PDD was made publicly available on DNV's climate change website (http://www.dnv.com/certification/climatechange/Projects/ProjectDetails.asp?ProjectId=773) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 21 September 2006 to 20 October 2006. Initially, the project was made public under the name "5 MW Andhra Hydro Electric Project Stage-II in Himachal Pradesh". However, in accordance with the name mentioned in the DNA letter of approval, the project developer changed the project name to "5 MW renewable energy project for a grid system at Rohru Tehsil, Shimla District in Himachal Pradesh, India".

No comments were received.

5 VALIDATION OPINION

Det Norske Veritas Certification AS (DNV) has performed a validation of the "5 MW renewable energy project for a grid system" at Rohru Tehsil, Shimla District, Himachal Pradesh in India. The validation was performed on the basis of UNFCCC criteria for the Clean Development Mechanism and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the project design documentation and the subsequent follow-up interviews have provided DNV with sufficient evidence to determine the fulfilment of stated criteria. This validation report also incorporates the conclusions presented in response to the review of the project considered at the 38th meeting of the CDM Executive Board.

The project has been proposed as unilateral project. The host country is India and fulfils all the participation criteria and has approved the project and authorized the project participant. The DNA from India has also confirmed that the project assists in achieving sustainable development.

Having an installed capacity of less than 15 MW, the project is eligible as type I small-scale CDM project activity.

The project correctly applies the simplified baseline and monitoring methodology AMS-I.D version 10.

By generating renewable energy which will displace grid electricity, the project results in reductions of CO_2 emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project 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.

The total emission reductions from the project are estimated to be on the average 14 380 tCO_2e per year over the selected 10 year crediting period. The emission reduction forecast has been checked and is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

Adequate training and monitoring procedures have been implemented.

In summary, it is DNV's opinion that the project, as described in the project design document of 29 March 2008, meets all relevant UNFCCC requirements for the CDM, is eligible as category I.D small-scale CDM project activity and correctly applies the approved simplified baseline and monitoring methodology AMS-I.D. Hence, DNV requests the registration of the "5 MW renewable energy project for a grid system" at Rohru Tehsil, Shimla District in Himachal Pradesh, India, as CDM project activity.

REFERENCES

Documents provided by the project proponent that relate directly to the project:

/1/ M/s Gowthami Hydroelectric Company Limited, CDM PDD for the "5 MW renewable energy project for a grid system" at Rohru Tehsil, Shimla District in Himachal Pradesh, India, initial version (published for global stakeholder comments) and latest version 02 dated 23 July 2007 and the revised version 03, dated 29 March 2008.

/2/ DNA of India, Letter of Approval, dated 26 July 2006.

/3/ Power Purchase Agreement with Himachal Pradesh State Electricity Board, Dated 30 March 2005.

/4/ Extract of meeting of Board of Directors' of M/s Gowthami Hydro Electric Company (P) Limited, dated 01 December 2004

/5/ MoU between Government of Himachal Pradesh and M/s Sidhardha Constructions (P) Limited, dated 20 March 2001 for Andhra Stage II Hydroelectric project of 2.40 MW capacity.

/6/ Evidences for transfer of Andhra stage II hydroelectric power project from M/s Sidhardha Constructions Private Limited to M/s Gowthami Hydro Electric (P) Limited, (dated 12 December 2003)

/7/ "No Objection Certificates" from the nearby villages of Chirgaon, Dhagoli, Gaonsari.

/8/ "Consent to establish" from Himachal Pradesh State Environment protection and pollution control board, dated 11 October 2004.

/9/ Implementation Agreement with Himachal Pradesh Government, dated 20 July 2004.

/10/ No objection Certificate from Irrigation department, dated 25 November 2004.

/11/ Clearance from forest department, dated 21 April, 2005.

/12/ Techno-economic clearance from Himachal Pradesh State Electricity Board, dated 28 October 2003.

/13/ Data for average PLF obtained by small scale hydro power plants in Himachal Pradesh – Source: Himachal Pradesh State Electricity Board (HPSEB)

/14/ a) Financial Analysis sheet.

b) Revised financial analysis (for entire lifetime of the project)

/15/ Contract with the equipment supplier, Boving Fouress Limited dated 15 April 2005.

/16/ Chartered accountant certificate confirming that the investment in the proposed project is the first major investment by the project proponent in the field of hydropower generation.

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

/17/ International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF), Validation and Verification Manual. http://www.vvmanual.info

/18/ Appendix B of the simplified modalities and procedures for small-scale CDM project activities, Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity category I.D (AMS-I.D), Version 10, Dated 23 December 2006

Persons interviewed during the validation, or persons who contributed with other information that are not included in the documents listed above:

/19/ Mr. M. Ravi Kanth, Managing Director, Gowthami Hydro Electric Company Limited

/20/ Mr. K.N.S. Prasad, Director, Gowthami Hydro Electric Company Limited

/21/ Mr. Mohan Reddy, Zenith Energy Private Limited

/22/ Mr. Viswanath Reddy, Zenith Energy Private Limited

/23/ Mr. Bala Gurunathan, Zenith Energy Private Limited

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APPENDIX A

VALIDATION PROTOCOL
FOR SMALL-SCALE CDM PROJECT ACTIVITIES

Table 1 Mandatory Requirements for Small Scale Clean Development Mechanism (CDM) Project Activities

Requirement	Reference	Conclusion	Cross Reference/Comment
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art. 12.2	OK	Table 2, Section E.4.1 No Annex I party is involved in the project activity
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	OK ~~CAR 1~~	Table 2, Section A.3 Written confirmation from DNA of India has been obtained.
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art. 12.2.	OK	Table 2, Section E.4.1
4. The project shall have the written approval of voluntary participation from the designated national authority of each party involved	Kyoto Protocol Art. 12.5a, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	OK ~~CAR 1~~	Written approval from DNA of India has been obtained.
5. The emission reductions should be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	OK	Table 2, Section E.1 to E.4
6. Reduction in GHG emissions must be additional to any that would occur in absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Kyoto Protocol Art. 12.5.c, Simplified Modalities and Procedures for Small Scale CDM Project Activities §26	OK	Table 2, Section B.2.1
7. In case public funding from Parties included in Annex I is used for the project activity, these Parties shall provide an affirmation that such funding does not	Decision 17/CP.7, CDM Modalities and Procedures Appendix B,	OK	No public funding from any Annex I country is involved.

Requirement	Reference	Conclusion	Cross Reference/Comment
result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of these Parties.	§ 2		
8. Parties participating in the CDM shall designate a national authority for the CDM	CDM Modalities and Procedures § 29	OK	India has designated "National Clean Development Mechanism (CDM) Authority Member Secretary, Ministry of Environment and Forests" as national authority for CDM.
9. The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol	CDM Modalities and Procedures § 30, 31b	OK	The host Party India has ratified the Kyoto Protocol on 26th August, 2002.
10. The participating Annex I Party's assigned amount shall have been calculated and recorded	CDM Modalities and Procedures §31b	NA	No Annex I party is involved in the project activity.
11. The participating Annex I Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7	CDM Modalities and Procedures §31b	NA	No Annex I party is involved in the project activity.
12. The proposed project activity shall meet the eligibility criteria for small scale CDM project activities set out in § 6 (c) of the Marrakesh Accords and shall not be a debundled component of a larger project activity	Simplified Modalities and Procedures for Small Scale CDM Project Activities §12a,c	OK	Table 2, Section A.1
13. The project design document shall conform with the Small Scale CDM Project Design Document format	Simplified Modalities and Procedures for Small Scale CDM Project Activities, Appendix A	OK ~~CAR 2~~	Initially version 02 of the CDM-SSC-PDD was used which was valid till 22nd June 2007 only. As a consequence, the PDD was revised to version 03 of the CDM-SSC-PDD.
14. The proposed project activity shall confirm to one of the project categories defined for small scale CDM	Simplified Modalities and Procedures for Small	OK	Table 2, Section A.1.3, B and D

Requirement	Reference	Conclusion	Cross Reference/Comment
project activities and uses the simplified baseline and monitoring methodology for that project category	Scale CDM Project Activities §22e		
15. Comments by local stakeholders are invited, and a summary of these provided	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22b	OK	Table 2, Section G
16. If required by the host country, an analysis of the environmental impacts of the project activity is carried out and documented	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22c	OK	Table 2, Section F
17. Parties, stakeholders and UNFCCC accredited NGOs have been invited to comment on the validation requirements and comments have been made publicly available	Simplified Modalities and Procedures for Small Scale CDM Project Activities §23b,c,d	OK	The PDD was web hosted for public comments from 21st September, 2006 to 20th October, 2006 on DNV's climate change website (http://www.dnv.com/certification/climatechange/Projects/ProjectDetails.asp?ProjectId=773) and comments are invited via the UNFCCC CDM website. No comments were received

Table 2 Requirements Checklist

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
A. **Project Description** The project design is assessed.					
A.1. Small scale project activity It is assess whether the project qualifies as small scale CDM project activity.					
A.1.1. Does the project qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?	/1/	DR	Yes, the maximum output capacity of the project activity is 5 MW which is less than the limit of 15 MW defined for type-I small scale CDM projects.		OK
A.1.2. The small scale project activity is not a debundled component of a larger project activity?	/1/	DR	Project activity is not a debundled component of a larger project activity.		OK
A.1.3. Does proposed project activity confirm to one of the project categories defined for small scale CDM project activities?	/1/	DR	Yes, the project activity falls under category-ID: Renewable electricity generation for a grid, defined for small scale projects, as the power generation of 5 MW is less than the 15 MW limit for type I small scale project activities. The project activity is grid connected.		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
A.2. Project Design Validation of project design focuses on the choice of technology and the design documentation of the project.					
A.2.1. Are the project's spatial (geographical) boundaries clearly defined?	/1/	DR	The project is located Gaskuwari village in Shimla district of Himachal Pradesh in India. It is at a distance of 148 km by road from Shimla district. Nearest village is Chiragaon which has all civic amenities like accommodation, communication, post office, hospitals, schools, market, police station and public transport facilities etc.		
A.2.2. Are the project's system (components and facilities used to mitigate GHG's) boundaries clearly defined?	/1/	DR	Yes, the project activity comprises of two synchronous brushless generators of capacity 2.5 MW each coupled to two units of horizontal Francis turbines. 11 kV voltage generated will be transformed to 66 kV to match the nearest grid substation voltage level. The project system also consists of trench type diversion weir, intake chamber, desilting chamber, power channel in the form of underground free-flow pressurised tunnel, forebay, penstock with saddles, anchor blocks and the power station with tail race for discharging the water back into the river.		
A.2.3. Does the project design engineering reflect current good practices?	/1/	DR	Yes, the project design uses well proven horizontal Francis turbines and generator sets for the power generation.		OK
A.2.4. Will the project result in technology transfer to the host country?	/1/	DR	No, there is no technology transfer to the host country.		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
A.2.5. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period? Does the project make provisions for meeting training and maintenance needs?	/1/ /15/	DR/I	Though not specifically mentioned in the PDD, but the requirement will be checked during the site visit. It has been verified that the initial training will be provided by the technology supplier and the same is included in the contract between M/s Gowthami Hydroelectric Company Limited and the technology supplier i.e. M/s Boving Fouress Limited.		OK
A.3. Contribution to Sustainable Development The project's contribution to sustainable development is assessed					
A.3.1. Will the project create other environmental or social benefits than GHG emission reductions?	/1/	DR	The implementation of the project activity will result in the overall development of the region by providing clean and continuous electricity supply, building of new roads and other infrastructure, creation of new employment opportunities etc.		OK
A.3.2. Will the project create any adverse environmental or social effects?	/1/	DR	The project activity does not seem to create any adverse environmental and social impacts.		
A.3.3. Is the project in line with sustainable development policies of the host country?	/1/ /2/	DR	Confirmation from the host country is to be obtained.	~~CAR 1~~	OK
A.3.4. Is the project in line with relevant legislation and plans in the host country	/1/ /9/ /8/ /11/ /7/	DR	The project activity has received the following approvals which have been verified : - Implementation agreement between the state government and project developer i.e. M/s Gowthami Hydro electric company (P) ltd. - Consent for establishment from the state environment protection and pollution control board. - Proof of payment of compensatory	~~**CL 1**~~	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			afforestration amount to state forest department and its confirmation by the state forest department. Besides these, following documents may be provided for verification: - Clearance from the local gram Panchayat/Sabha has to be provided for verification. - Approval letter from the state nodal agency HIMURJA responsible for allotment of small scale hydroelectric projects. - Letter regarding allotment of land for the project activity, by state revenue department.		
B. **Project Baseline** The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.					
B.1. Baseline Methodology It is assessed whether the project applies an appropriate baseline methodology.					
B.1.1. Is the selected baseline methodology in line with the baseline methodologies provided for the relevant project category?	/1/ /17/	DR	The project correctly applies the approved baseline methodology "Grid connected renewable electricity generation" type I.D as per Appendix-B of simplified modalities and procedures for small scale CDM projects. The methodology is previously approved by the CDM Executive Board.		OK
B.1.2. Is the baseline methodology applicable to	/1/	DR	Yes, the selected baseline is applicable to the		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
the project being considered?	/18/		project activity as it involves the generation of 5 MW of electricity from a renewable source i.e. water, which is well within the limit of 15 MW for type I small scale project activities.. The project is also connected to the grid as specified in the methodology and displaces a part of the electricity which would otherwise have been supplied by fossil fuel based generating units.		
B.2. Baseline Determination It is assessed whether the project activity itself is not a likely baseline scenario and whether the selected baseline represents a likely baseline scenario.					
B.2.1. Is it demonstrated that the project activity itself is not a likely baseline scenario due to the existence of one or more of the following barriers: investment barriers, technology barriers, barriers due to prevailing practice or other barriers?	/1/ /14/	DR/I	Additionality of the project activity has been demonstrated through following barriers: - It has been stated that the national policies favours either the fossil fuel fired large scale power plants or medium or large scale hydropower plants. The national government has opened up the exploration of fossil fuels including coal and natural gas to the private sector. Data of the capacity additions during the 10th Plan– Planning commission target for the state of Himachal Pradesh has been verified and it clearly states that the national and state government focus is on either large scale hydroelectric power plants or fossil fuel fired power plants.. - Barrier Analysis: - Prevailing practice: It is stated that the	~~CL 2~~	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			investment in small scale hydro power projects is not a common practice in India especially in northern region. As per the statistics of Central Electricity Authority (CEA): - At national level, the small hydroelectric power plants forms 1.40% of the total installed capacity (including hydro and thermal capacity) - At regional level (NR), the small hydroelectric power plants form only 1.55% of the total installed capacity of NR. - At state level, the small hydropower plants form only 0.33% of total installed capacity of Himachal Pradesh. Also, the contribution of small hydropower plants to the total installed hydropower capacity in India is just 5%. Further, the statistics of state electricity board shows that the most of the power plants established by HPSEB before 2000 and the future plans of state electricity board are also focused on large scale hydropower plants as compared to the small scale power plants. Upstream hydropower plant i.e. Andhra stage-I was also established by HPSEB in 1987. , - Investment Barrier: It is stated that the investment cost/ MW for small scale hydro power projects is higher as compared to the large scale hydropower or thermal power plants. For Andhra II power project, the cost/ MW is around INR 51.60 millions/MW in comparison to INR 30-35 millions/MW for		

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			thermal power plants. The source of this information may be provided. As such, the small scale hydropower plants are not financially attractive to public sector as well as the private sector players. - The project also faces other barriers including the lack of infrastructure, construction risks leading to cost overruns, risks from floods, earthquake/landslides etc. However, it still needs to be demonstrated that the project would not have occurred in the absence of CDM revenue. In view of the validation team, a financial analysis of the project activity with and without CDM revenue, data of investment cost/ MW for other small scale hydropower plants in the state of Himachal Pradesh and also for large scale hydropower plants may be provided. The PDD has been revised to remove the statement mentioning the comparison of cost of generation for thermal power plants and hydropower plants. The revised PDD includes the financial analysis of the project activity with and without CDM revenues. Project IRR has been selected as financial indicator to demonstrate the financial viability of the project. It has been compared against the benchmark of WACC. The project IRR without CDM revenues is 8.39% which increases to 11.44% with CDM revenues against the WACC benchmark of 11.30%. These figures show that CDM revenues give boost to the project IRR to touch the benchmark.		

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
B.2.2. Is the application of the baseline methodology and the discussion and determination of the chosen baseline transparent and conservative?	/1/ /18/	DR/I	The application of the baseline methodology and its discussion is transparent. The baseline emissions based on the weighted average emission factor have been calculated by using latest electricity generation data published by Central Electricity Authority (CEA) for the northern regional grid. The PDD has been revised. In the revised PDD, the baseline emissions have been calculated by using the combined margin emission factor.		OK
B.2.3. Are relevant national and/or sectoral policies and circumstances taken into account?	/1/	DR	Yes, the national and sectoral policies favours either the fossil fuel fired large scale power projects or medium or large scale hydroelectric projects.		OK
B.2.4. Is the baseline selection compatible with the available data?	/1/	DR	Yes		OK
B.2.5. Does the selected baseline represent the most likely scenario describing what would have occurred in absence of the project activity?	/1/	DR	In the absence of the project activity, the grid would have continued the current practice i.e. meeting the electricity demands by running the already existing fossil fuel based generating unit.		OK
C. **Duration of the Project / Crediting Period** It is assessed whether the temporary boundaries of the project are clearly defined.					
C.1.1. Are the project's starting date and operational lifetime clearly defined?	/1/ /15/	DR/I	The project starting date is 01 July 2007 and the operational lifetime of the project activity is 30 years. The PDD has been revised. The starting date of the project activity is 15 April 2005. Contract signed with the equipment supplier has been provided as an evidence for the same.		OK
C.1.2. Is the assumed crediting time clearly	/1/	DR/I	Fixed crediting period of 10 years, starting from 01		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
defined (renewable crediting period of seven years with two possible renewals or fixed crediting period of 10 years with no renewal)?			July 2007 has been chosen. In the revised PDD, the starting date of the crediting period has been revised to 01 December 2007 or from the date of the registration of the project activity whichever is later.		
D. **Monitoring Plan** The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed.	/1/				
D.1. Monitoring Methodology It is assessed whether the project applies an appropriate monitoring methodology.					
D.1.1. Is the selected monitoring methodology in line with the monitoring methodologies provided for the relevant project category?	/1/ /18/	DR	Yes, the selected monitoring methodology is in line with Type I.D "Grid connected renewable electricity generation" for small-scale CDM project activities		OK
D.1.2. Is the monitoring methodology applicable to the project being considered?	/1/ /18/	DR	Yes, the monitoring methodology is applicable to the project activity.		OK
D.1.3. Is the application of the monitoring methodology transparent?	/1/ /18/	DR	Yes, the application of methodology is transparent. Monitoring plan covers the monitoring of all relevant parameters like gross electricity generation, auxiliary power consumption, power imports and exports, for estimating baseline emissions.		OK
D.1.4. Will the monitoring methodology give opportunity for real measurements of achieved emission reductions?	/1/ /18/	DR/I	Yes, monitoring methodology provides an opportunity for real measurements of emission reductions. The net electricity export to the grid will be metered and the weighted average emission		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			factor of the regional grid i.e. northern grid will be calculated based on the recent data available from Central Electricity Authority (CEA). The project developer has revised the PDD and has selected the combined margin emission factor for emission reduction calculations.		
D.2. Monitoring of Project Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	/1/	DR/I	The project activity is a renewable energy based power plant. Hence, there will be no project emissions. However, the use of any fossil fuel during emergency or start up needs to be verified during the site visit. During the interviews with the project proponents, it has been confirmed that the project proponent has DG set (fossil fuel based) as an emergency back up. For emission reduction estimations the project emissions have been assumed to be zero. However, based on the actual fossil fuel consumption, the project emissions will be considered for actual emission reduction calculations during the crediting period. The PDD has been revised to include the emission reduction calculations and project emissions monitoring.	~~CL 3~~	OK
D.2.2. Are the choices of project GHG indicators reasonable?	/1/	DR/I	Yes.		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
D.2.3. Will it be possible to monitor / measure the specified project GHG indicators?	/1/	DR	Yes.		OK
D.2.4. Will the indicators give opportunity for real measurements of project emissions?	/1/	DR	Yes.		OK
D.3. Monitoring of Leakage If applicable, it is assessed whether the monitoring plan provides for reliable and complete leakage data over time.					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/	DR	There is no technology transfer to the project site and hence as per the AMS-I.D, no leakages have to be considered.		OK
D.3.2. Are the choices of leakage indicators reasonable?	/1/	DR	NA		OK
D.3.3. Will it be possible to monitor / measure the specified leakage indicators?	/1/	DR	NA		OK
D.3.4. Will the indicators give opportunity for real measurements of leakage effects?	/1/	DR	NA		OK
D.4. Monitoring of Baseline Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
D.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining baseline emissions during the crediting period?	/1/	DR/I	In order to determine the baseline emissions, the electricity supplied by the project activity to the grid and the weighted average emission factor of the northern regional grid will be monitored. The net electricity export to the NR grid will be monitored two sets of meters, main meter –installed by project		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			proponent and check meter-installed by HPSEB at the grid substation. Sales bills/receipts will be used to cross check the total electricity exported to the grid. All the monitored data will be kept for the whole of the crediting period plus two years. The project developer has revised the PDD and has selected the combined margin emission factor. The combined margin emission factor has been derived from officially published data of Central Electricity Authority (CEA) and has been fixed *ex ante* for the entire crediting period.		
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	/1/	DR	Yes, the emissions have been calculated on the basis of emissions from the grid electricity displaced.		OK
D.4.3. Will it be possible to monitor / measure the specified baseline indicators?	/1/	DR/I	Following will be monitored: - Gross electricity generation by the project activity- metered. - Auxiliary power consumption- metered - Power import - metered - Power exports – metered CO_2 emission factor (based on baseline emission data published by Central Electricity Authority, CEA.) As per the revised PDD, the project developer fixed the emission factor *ex ante* for the entire crediting period and hence this parameter is not included in the monitoring plan.		OK
D.4.4. Will the indicators give opportunity for real measurements of baseline emissions?	/1/	DR	Yes, the indicators will give an opportunity for real measurements of baseline emissions.		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
D.5. Project Management Planning It is checked that project implementation is properly prepared for and that critical arrangements are addressed.					
D.5.1. Is the authority and responsibility of project management clearly described?	/1/	DR	Yes, the authority and responsibility of the project management rests with the Board of Directors.		OK
D.5.2. Is the authority and responsibility for registration monitoring measurement and reporting clearly described?	/1/	DR	The authority and responsibility for registration, monitoring, measurement and reporting lies with the board of directors.		OK
D.5.3. Are procedures identified for training of monitoring personnel?	/1/	DR/I	Procedures for training of monitoring personnel to be checked during the site visit.	~~CL 4~~	OK
D.5.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/	DR/I	Procedures will be checked during the site visit.	~~CL 4~~	OK
D.5.5. Are procedures identified for calibration of monitoring equipment?	/1/	DR/I	Procedures will be checked during the site visit.	~~CL 4~~	OK
D.5.6. Are procedures identified for maintenance of monitoring equipment and installations?	/1/	DR/I	Procedures will be checked during the site visit.	~~CL 4~~	OK
D.5.7. Are procedures identified for monitoring, measurements and reporting?	/1/	DR/I	Procedures will be checked during the site visit.	~~CL 4~~	OK
D.5.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	/1/	DR/I	Procedures will be checked during the site visit.	~~CL 4~~	OK
D.5.9. Are procedures identified for dealing with possible monitoring data adjustments and	/1/	DR/I	Procedures will be checked during the site visit.	~~CL 4~~	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
uncertainties?					
D.5.10. Are procedures identified for internal audits of GHG project compliance with operational requirements as applicable?	/1/	DR/I	Procedures will be checked during the site visit.	~~CL 4~~	OK
D.5.11. Are procedures identified for project performance reviews?	/1/	DR/I	Procedures will be checked during the site visit.	~~CL 4~~	OK
D.5.12. Are procedures identified for corrective actions?	/1/	DR/I	Procedures will be checked during the site visit.	~~CL 4~~	OK
E. **Calculation of GHG emission** It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.					
E.1. Project GHG Emissions The validation of ex-ante estimated project GHG emissions focuses on transparency and completeness of calculations.					
E.1.1. Are all aspects related to direct and indirect project emissions captured in the project design?	/1/	DR/I	The project activity is a small scale renewable energy based power generation. There will be no GHG emissions from the project activity. However, the use of any fossil fuel during the emergency or start up needs to be verified during the site visit. PDD has been revised to include the calculation of project emissions resulting from the consumption of fossil fuel in DG sets (provided as an emergency backup)	~~CL 3~~	OK
E.1.2. Have all relevant greenhouse gases and	/1/	DR/I	Yes.		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
sources been evaluated?					
E.1.3. Do the methodologies for calculating project emissions comply with existing good practice?	/1/	DR/I	Yes.		OK
E.1.4. Are the calculations documented in a complete and transparent manner?	/1/	DR/I	Yes.		OK
E.1.5. Have conservative assumptions been used?	/1/	DR/I	Yes.		OK
E.1.6. Are uncertainties in the project emissions estimates properly addressed?	/1/	DR/I	Yes.		OK
E.2. Leakage It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed and estimated ex-ante.					
E.2.1. Are leakage calculation required for the selected project category and if yes, are the relevant leakage effects assessed?	/1/	DR	Since the generating equipment is not transferred from any other activity neither it is transferred to any other activity, leakage has been neglected in accordance with the baseline methodology AMS I.D.		OK
E.2.2. Are potential leakage effects properly accounted for in the calculations (if applicable)?	/1/	DR	NA		OK
E.2.3. Do the methodologies for calculating leakage comply with existing good practice (if applicable)?	/1/	DR	NA		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
E.2.4. Are the calculations documented in a complete and transparent manner and (if applicable)?	/1/	DR	NA		OK
E.2.5. Have conservative assumptions been used (if applicable)?	/1/	DR	NA		OK
E.2.6. Are uncertainties in the leakage estimates properly addressed (if applicable)?	/1/	DR	NA		OK
E.3. Baseline GHG Emissions The validation of ex-ante estimated baseline GHG emissions focuses on transparency and completeness of calculations.					
E.3.1. Are the baseline emission boundaries clearly defined and do they sufficiently cover sources for baseline emissions?	/1/	DR	The system boundaries include project activity and the northern region grid electricity system. The regional grid electricity system covers all the fossil fuel fired power plants which are the main sources for baseline emissions.		OK
E.3.2. Are all aspects related to direct and indirect baseline emissions captured in the project design?	/1/	DR	Yes.		OK
E.3.3. Have all relevant greenhouse gases and sources been evaluated?	/1/	DR	CO_2 emissions from the combustion of fossil fuels have been considered		OK
E.3.4. Do the methodologies for calculating baseline emissions comply with existing good practice?	/1/ /18/	DR/I	Yes, baseline emissions have been calculated based on the net generation from the project activity and the grid emission factor of northern regional grid. The PDD has been revised in accordance with the latest officially published data from Central Electricity Authority (CEA). The project developer		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			has selected the combined margin emission factor in place of weighted average emission factor as per the old version of PDD. The emission factor for the grid has been fixed *ex ante* for the entire crediting period.		
E.3.5. Are the calculations documented in a complete and transparent manner?	/1/	DR	Yes, the calculations are transparent.		
E.3.6. Have conservative assumptions been used?	/1/	DR	Yes, wherever applicable conservative assumptions have been used.		OK
E.3.7. Are uncertainties in the baseline emissions estimates properly addressed?	/1/	DR	Baseline emissions estimates are dependent on the net electricity supplied to the grid and the grid emission factor of northern regional grid. The net energy export to the grid will be monitored and the grid emission factor has been fixed ex ante. The chances of uncertainty in the baseline emissions are less.		OK
E.4. Emission Reductions Validation of ex-ante estimated emission reductions.					
E.4.1. Will the project result in fewer GHG emissions than the baseline case?	/1/	DR	Yes, the implementation of the proposed project activity will result in reduction of 14 380 t CO_2e per year.		OK
***F.* Environmental Impacts** It is assessed whether environmental impacts of the project are sufficiently addressed.					
F.1.1. Does host country legislation require an analysis of the environmental impacts of the project activity?	/1/	DR/I	It has been verified that the small hydroelectric projects do not require an EIA (Ref - Latest EIA Notification 2006).		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
F.1.2. Does the project comply with environmental legislation in the host country?	/1/ /8/	DR/I	The relevant consents for the establishment of a hydroelectric project have been verified.		OK
F.1.3. Will the project create any adverse environmental effects?	/1/	DR	Project does not seem to create any adverse environmental. The project will not result in any resettlement or rehabilitation nor will it affect the flora and fauna of the region.		OK
F.1.4. Have environmental impacts been identified and addressed in the PDD?	/1/	DR	Yes		OK
G. **Comments by Local Stakeholder** Validation of the local stakeholder consultation process.					
G.1.1. Have relevant stakeholders been consulted?	/1/ /3/ /8/ /10/ /11/ /7/	DR/I	Yes, the project developer has consulted the following stakeholders before implementing the project: - HIMURJA: Policy implementing body w.r.t. renewable energy projects in Himachal Pradesh. Clearance obtained to be verified during the site visit. - Himachal Pradesh State electricity board: Power Purchase Agreement to be verified during the site visit. - Himachal State Environment Protection and Pollution Control board- Clearance obtained to be verified during the site visit. - Irrigation Department: Clearance obtained is to be verified during the site visit. - Revenue department: Consent obtained is to		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			be verified during the site visit. - Forest department: Letter obtained from forest department for the payment of compensatory afforestration amount has been verified. - Local Village Panchayat: No Objection certificate is to be verified during the site visit. Relevant clearances have been verified.		
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	/1/	DR	Yes, public announcement was made in the local newspaper in local language for public comments.		OK
G.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/1/	DR	Above mentioned stakeholders were consulted as required by the regulations/laws in India.		OK
G.1.4. Is a summary of the comments received provided?	/1/	DR	No comments were received.		OK
G.1.5. Has due account been taken of any comments received?	/1/	DR	No comments have been received.		OK

Table 3 Resolution of Corrective Action and Clarification Requests

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
CAR 1**:** Written Approval of the project activity from the DNA of India may be provided.	A.3.3.	Host Country Approval (HCA) obtained from DNA of India F. No. 4/13/2006-CCC dated 26th July 2006 is furnished.	Host country approval from DNA of India has been verified. CAR 1 is closed.
OK CAR ~~2~~**:** Version 02 of the CDM-SSC-PDD was valid till 22nd June 2007. The PDD needs to be revised in accordance with the latest version 03 of the CDM-SSC-PDD.	Table 1	PDD has been revised in accordance with the latest version of small scale project design document.	PDD has been revised. CAR 2 is closed.
CL 1**:** Following clearances may be provided for verification: - Clearance from the local gram Panchayat/Sabha has to be provided for verification. - Approval letter from the state nodal agency HIMURJA responsible for allotment of small scale hydroelectric projects. - Letter regarding allotment of land for the project activity, by state revenue department.	A.3.4.	All the above approvals/licenses are enclosed except Consent from Revenue Department, since their consent is not necessary in Himachal Pradesh.	DNV was able to verify the following clearances: - "No Objection certificates" from representatives of Dhagoli, Chirgaon and Gaonsari villages. - Consent to establish 5 MW hydropower plant in Rohru Tehsil in Shimla district of Himachal Pradesh, dated EPPCB/Andhra Stage-II SHEP Chirgaon-Rohroosimla/2004-2514-19, dated 11 October 2004. - Clearance from the Forest Department, 9-2034/2004-ROC/2079, Dated 21 April 2005. - Techno-economic clearance from

<table>
<tr><th>Draft report corrective action requests and requests for clarification</th><th>Ref. to Table 2</th><th>Summary of project participants' response</th><th>Final conclusion</th></tr>
<tr><td></td><td></td><td></td><td>the Himachal Pradesh State Electricity Board, HPSEB/CE (P)/CC-Andhra – II/2003/865-73, Dated 28 October 2003.
- Clearance from the Irrigation department, PBW (PH) F(1)-2(2001-1, Dated 25 November 2004.
- Implementation agreement with the Government of Himachal Pradesh, dated 20 July 2004.
The CL is closed</td></tr>
<tr><td>CL 2:
- It is stated in the PDD that the cost/MW of the project activity is INR 51.60 million/MW and that of the conventional large scale thermal power plant is around INR 30-35 million/MW. Source of the information to be provided.
- The peak load factor of 45% needs to be justified with data.
- The project developer still needs to demonstrate that the project would not have occurred in the absence of CDM revenue. A financial analysis of the project activity with and without CDM revenue may be provided for verification.</td><td>B.2.1.</td><td>1) The PDD is now modified and the statement is removed.
2) Following is the table depicting Actual Generation and PLF of small hydro plants (from 3 MW and above) in Himachal Pradesh for the years 2001-02, 2002-03, 2003-04, 2004-05. Actual Generation details are collected directly from Himachal Pradesh State Electricity Board which are not displayed in any of the official websites. From the Generation data, the PLF is calculated assuming the plants will run for 365 days in a year and 24 hours per day.
<table>
<tr><th rowspan="3">Power Station</th><th rowspan="3">Inst. Cap (MW)</th><th colspan="8">Actual Generation</th><th rowspan="3">Avg PLF (%)</th></tr>
<tr><th colspan="2">2001-02</th><th colspan="2">2002-03</th><th colspan="2">2003-04</th><th colspan="2">2004-05</th></tr>
<tr><th>Gen. (GWh)</th><th>PLF (%)</th><th>Gen. (GWh)</th><th>PLF (%)</th><th>Gen. (GWh)</th><th>PLF (%)</th><th>Gen. (GWh)</th><th>PLF (%)</th></tr>
<tr><td>Andhr</td><td>16.</td><td>59.365</td><td>40</td><td>69.085</td><td>47</td><td>69.537</td><td>47</td><td>52.914</td><td>37</td><td>42.75</td></tr>
</table></td><td>1) The PDD has been revised to remove the statement mentioning the comparison of cost of generation in a thermal based power plant and hydro based power plant.
2) The PLF of the project activity has been arrived on the basis of the average PLF achieved by the Andhra Stage-I hydroelectric power project which is located downstream of the project activity. It has also been demonstrated that the average PLF achieved by small scale hydropower plants in Himachal Pradesh is in between 35% to 50%. The</td></tr>
</table>

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion

a Stage-I	95									
Ghanvi	22.5	36.709	18.6	82.594	41.9	70.972	36	74.26	37.67	33.54
Baner	12	30.506	29	33.094	31.5	40.191	38.2	42.792	40.71	34.85
Gaj	10.5	37.472	40.73	40.157	43.66	48.083	52.28	50.577	54.99	47.915
Binwa	6	20.781	39.54	24.033	45.7	31.576	60.1	32.075	61.02	51.59
Thirot	4.5	7.306	18.5	6.988	17.72	5.328	13.51	5.77	14.64	16.09
Gumma	3	8.564	32.59	11.155	42.45	10.205	38.83	5.532	21.05	33.73
Holi	3	0.0	0	0.0	0	0.0	0	0.595	2.26	0.14
Khauli (Comm. – March 2006)	12	0.0	0	0.0	0	0.0	0	0.0	0	0

The proposed project is in the Andhra Khad of Yamuna Basin,

same seems to be reasonable and is accepted.

3) The PDD has been revised to include the financial analysis of the project with and without CDM revenues. It has been sufficiently demonstrated that the project activity is not an economically attractive option without CDM revenues. The same is acceptable to DNV.

CL 2 is closed.

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
		same as that of the existing 16.95 MW Andhra Stage-I project. Also the proposed project is in the upstream of the existing project. Hence the PLF of the proposed 5 MW project is considered above the average PLF of past 4 years of 16.95 MW Andhra stage-I (i.e.) 45% which is reliable. - Financial Analysis sheet as provided.	
CL 3**:** The use of any fossil fuel for emergency/ start up needs to be verified during the site visit.	D.2.1, E1.1.	The DG set (diesel based) has been provided as an emergency backup. The PDD has been revised to include the monitoring of fuel consumption and hence project emissions. The emission reductions calculations have also been revised to include the project emissions based on the actual fossil fuel consumption during the crediting period.	Revised PDD has been verified. For ex ante estimation of emission reductions, the project emissions have been assumed to be zero. However, based on the actual diesel oil consumption, the resulting project emissions will be considered to arrive at the actual emission reductions during the crediting period. CL 3 is closed.
CL 4**:** Procedures for the following to be presented for verification: a) Training of monitoring personnel b) Emergency preparedness. c) Calibration and maintenance of monitoring equipment. d) Monitoring, measurement, reporting, day-to-day handling of data, internal audits of GHG project compliance etc.	D.5.3., D.5.4., D.5.5., D.5.6., D.5.7., D.5.8., D.5.9., D.5.10, D.5.11, D.5.12.	All the procedures are included in Annex - 5, Monitoring Plan of PDD.	The PDD has been revised to include these procedures. The same is accepted. CL 4 is closed.

APPENDIX B

CERTIFICATES OF COMPETENCE

CERTIFICATE OF COMPETENCE

Michael Lehmann

Qualification in accordance with DNV's Qualification scheme for CDM/JI (ICP-9-8-i1-CDMJI-i1

GHG Auditor:	Yes		
CDM Validator:	Yes	***JI Validator:***	Yes
CDM Verifier:	Yes	***JI Verifier:***	Yes
Industry Sector Expert for Sectoral Scope(s):	Sectoral scope 1,2,3 & 9		
Technical Reviewer for (group of) methodologies:			
ACM0001, AM0002, AM0003, AM0010, AM0011, AM0012, AMS-III.G	Yes	*AM0021*	Yes
ACM002, AMS-I.A-D, AM0019, AM0026, AM0029	Yes	*AM0023*	Yes
ACM003, ACM0005, AM0033, AM0040	Yes	*AM0024*	Yes
ACM0004	Yes	*AM0027*	Yes
ACM0006, AM0007, AM0015, AM0036, AM0042	Yes	*AM0028, AM0034*	Yes
ACM0007	Yes	*AM0030*	Yes
ACM0008	Yes	*AM0031*	Yes
ACM0009, AM0008, AMS-III.B	Yes	*AM0032*	Yes
AM0006, AM0016, AMS-III.D	Yes	*AM0035*	Yes
AM0009, AM0037	Yes	*AM0038*	Yes
AM0013, AM0022, AM0025, AM00379, AMS-III.H, AMS-III.I	Yes	*AM0041*	Yes
AM0014	Yes	*AM0034*	Yes
AM0017	Yes	*AMS-II.A-F*	Yes
AM0018	Yes	*AMS-III.A*	Yes
AM0020	Yes	*AMS-III.E, AMS-III.F*	Yes

Høvik, 6 November 2006

Einar Telnes
Director, International Climate Change Services

Michael Lehmann
Technical Director

CERTIFICATE OF COMPETENCE

Anjana Sharma

Qualification in accordance with DNV's Qualification scheme for CDM/JI (ICP-9-8-i1-CDMJI-i1

GHG Auditor:	Yes		
CDM Validator:	--	***JI Validator:***	--
CDM Verifier:	--	***JI Verifier:***	--
Industry Sector Expert for Sectoral Scope(s):	--		

Høvik, 5 February 2007

Einar Telnes
Director, International Climate Change Services

Michael Lehmann
Technical Director

CERTIFICATE OF COMPETENCE

Kumaraswamy Chandrashekara

Qualification in accordance with DNV's Qualification scheme for CDM/JI (ICP-9-8-i1-CDMJI-i1

GHG Auditor:	Yes		
CDM Validator:	Yes	***JI Validator:***	--
CDM Verifier:	Yes	***JI Verifier:***	--
Industry Sector Expert for Sectoral Scope(s):	Sectoral scope 4 & 5		
Technical Reviewer for (group of) methodologies:			
ACM0001, AM0002, AM0003, AM0010, AM0011, AM0012, AMS-III.G	Yes	*AM0027*	Yes
ACM002, AMS-I.A-D, AM0019, AM0026, AM0029, AM0045	Yes	*AM0028, AM0034*	Yes
ACM003, ACM0005, AM0033, AM0040	Yes	*AM0030*	Yes
ACM0004	Yes	*AM0031*	Yes
ACM0006, AM0007, AM0015, AM0036, AM0042	Yes	*AM0032*	Yes
ACM0007	Yes	*AM0035*	Yes
ACM0008	Yes	*AM0038*	Yes
ACM0009, AM0008, AMS-III.B	Yes	*AM0041*	Yes
AM0006, AM0016, AMS-III.D, ACM0010	Yes	*AM0034*	Yes
AM0009, AM0037	Yes	*AM0043*	
AM0013, AM0022, AM0025, AM00379, AMS-III.H, AMS-III.I	Yes	*AM0046*	
AM0014	Yes	*AM0047*	
AM0017	Yes	*AMS-II.A-F, AM0044*	Yes
AM0018	Yes	*AMS-III.A*	Yes
AM0020	Yes	*AMS-III.E, AMS-III.F*	Yes
AM0021	Yes		
AM0023	Yes		
AM0024	Yes		

Høvik, 5 February 2007

Einar Telnes
Director, International Climate Change Services

Michael Lehmann
Technical Director

CERTIFICATE OF COMPETENCE

Raman Venkata Kakaraparthi

Qualification in accordance with DNV's Qualification scheme for CDM/JI (ICP-9-8-i1-CDMJI-i1

GHG Auditor:	Yes		
CDM Validator:	Yes	***JI Validator:***	--
CDM Verifier:	--	***JI Verifier:***	--
Industry Sector Expert for Sectoral Scope(s):	Sectoral scope 5		
Technical Reviewer for (group of) methodologies:			
ACM002, AMS-I.A-D, AM0019, AM0026, AM0029, AM0045	Yes		

Høvik, 22 December 2006

Einar Telnes
Director, International Climate Change Servicer

Michael Lehmann
Technical Director