



VALIDATION REPORT

WWF NEPAL GOLD STANDARD BIOGAS VOLUNTARY EMISSION REDUCTION (VER) PROJECT

Report No: 8000359557 – 08/80

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Approved by: Mr. Eric Krupp	Organisational unit: TÜV NORD JI/CDM Certification Program
Client: WWF – The World Wildlife Fund	Client ref.: Mr. Stefan Ziegler
<p>Summary/Opinion:</p> <p>The WWF – The World Wildlife Fund has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: “WWF Nepal Gold Standard Biogas Voluntary Emission Reduction (VER) Project” with regard to the relevant requirements of the Gold Standard for Gold Standard VER project activities, as well as criteria for consistent project operations, monitoring and reporting.</p> <p>The project activity aims to reduce GHG emissions by the installation of small bio digesters for households for the production of biogas, which will be used for cooking. Thereby the utilization of non-renewable biomass as firewood will be reduced, as well as the collection time of firewood. Within the project also subsidies for toilet construction are provided upon request which are connected to the bio digesters.</p> <p>A risk based approach has been followed to perform this validation. In the course of the pre-validation, 9 Corrective Action Requests (CARs) and 1 Clarification Request (CRs) were raised and successfully closed.</p> <p>The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.</p> <p>In detail the conclusions can be summarised as follows:</p> <ul style="list-style-type: none"> - The project is in line with all relevant host country criteria (Nepal) and all relevant GS requirements for VER. - The sustainable development is sufficiently justified and referenced. - The project additionality is sufficiently justified in the PDD. - The monitoring plan is transparent and adequate. - The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 147,613 tCO₂e is most likely to be achieved within the 7 years renewable crediting period (July 2007 to June 2014). <p>The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.</p>	

Report No.: 8000359557 – 08/80	Subject Group: Environment
Report title: <i>WWF Nepal Gold Standard Biogas Voluntary Emission Reduction (VER) Project</i>	
Work carried out by: Mr. Rainer Winter, Ms. Katja Beyer, Mr. Srikanth Meesa	
Work verified by: Mr. Eric Krupp	
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Indexing terms

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Abbreviations

BAU	Business as usual
AEPC	Alternative Energy Promotion Centre
BSP	Biogas Sector Partnership
CAR	Corrective Action Request
CER	Certified Emission Reduction
CH₄	Methane
CO₂	Carbon dioxide
CO₂e	Carbon dioxide equivalent
CP	Certification Program
CR	Clarification Request
DNA	Designated National Authority
EIA	Environmental Impact Assessment
GHG	Greenhouse gas(es)
GS	Gold Standard
HCA	Host Country Approval
IRR	Internal Rate of Returns
ISC	Initial Stakeholder Consultation
MoEST	Ministry of Environment, Science and Technology
MP	Monitoring Plan
MSC	Main Stakeholder Consultation
NCV	Net Calorific Value
ODA	Official Development Assistance
PA	Project Activity
PDD	Project Design Document
PP	Project Proponent
QC/QA	Quality control/Quality assurance
SD	Sustainable Development
SSC	Small Scale
TAL	Terai Arc Landscape
VER	Verified Emission Reduction
VO	Voluntary Offset
VVM	Validation Verification Manual
WWF	The World Wildlife Fund

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1 INTRODUCTION

WWF – The World Wildlife Fund has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project:

“WWF Nepal Gold Standard Biogas Voluntary Emission Reduction (VER) Project”

with regard to the relevant requirements for Gold Standard VER project activities.

1.1 Objective

The purpose of this validation is to have an independent third party assess the project design. In particular the project's baseline, the monitoring plan (MP) and the project's compliance with

- the requirements of the Gold Standard for Voluntary Offset Projects,
- relevant decisions and requirements by the UNFCCC
- other relevant rules, including the host country (Nepal) legislation and sustainability development 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 seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of voluntary emission reductions (VERs).

1.2 Scope

The validation scope is given as an independent and objective review of the project design, the project's baseline study and monitoring plan (based on “Indicative programme, baseline, and monitoring methodology for Small Scale Biodigester”, approved methodology of Voluntary Gold Standard) which are included in the PDD and other relevant supporting documents.

The items covered in the validation are described below:

- **Gold Standard & Host Country Criteria**
 - Gold Standards requirements, as stated in the Gold Standard Validation and Verification Manual for Voluntary Offset Projects (June 2007) and following documents
 - Host country requirements / criteria
- **VER Project Description**
 - Project design
 - Project boundaries



- Predicted VER project GHG emissions
- **Project Baseline**
 - Baseline methodology
 - Baseline GHG emissions
- **Monitoring Plan**
 - Monitoring methodology
 - Indicators/data to be monitored and reported
 - Responsibilities
- **Background investigation and follow up interviews**
- **Stakeholder consultation**
 - Initial stakeholder consultation as per GS
 - Main stakeholder consultation as per GS
 - Review of comments
- **Draft validation reporting with CARs & CRs, if any**
- **Final validation reporting.**

The information included in the PDD and the supporting documents were reviewed against the requirements and criteria mentioned above. The TÜV NORD JI/CDM CP has, based on the recommendations in the Validation and Verification Manual^{VVM/ GS-VVM}, employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation, sustainability criteria and the generation of VERs. The validation is based on the information made available to TÜV NORD JI/CDM CP and on the contract conditions. TÜV NORD JI/CDM CP can not be held liable by any entities for making its validation opinion based on any false or misleading information supplied to it during the course of validation.

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

1.3 GHG Project Description

1.3.1 Project Scope

The considered GHG project can be classified as a VER project in the sector given in Table 1-1 (according to List of Sectoral Scopes of UNFCCC).

Table 1-1: Project Scope(s)

No.	Project Scope
1	Energy industries (renewable - / non-renewable sources)

Under the GS the project qualifies under type A.1 renewable energy, A.1.1 Ecologically Sound Biomass, Biogas and Liquid Biofuels.

1.3.2 Project Parties

Nepal as host country is the party involved under this project activity. It is not considered as project participants.

1.3.3 Project Entities

The following entities are involved in the developing of the project:

Project Proponent 1 WWF Nepal
P.O. Box 7660
Kathmandu
Nepal

Contact person: Mr. Anil Manandhar

Tel No: +977-1-4434820
Fax No: +977-1-4438458
Email: anil.mamamdhar@wwfnepal.org

Project Proponent 2 Biogas Sector Partnership (BSP)- Nepal
P.O Box: 9751
Kathamndu
Nepal

Contact Person: Mr. Saroj Rai
Tel No: +977-1-5529840
Email: srai@bspnepal.wlink.com.np

Project Proponent 3 Ministry of Environment, Science and Technology, Alternative
Energy Promotion Centre
P.O Box: 6332
Kathamndu
Nepal

Contact Person Dr. Govinda Raj Pokhrel
Tel No: +977-1-5539390
Email: govind.pokhrel@aepc.gov.np

1.3.4 Project location

The proposed project is implemented in the Terai Region of Nepal in the following Districts: Kailali, Bardiya, Banke, Dang, Kanchanpur, Makwanpur, Parsa, Palpa and Chitwan.



A unique registration number of each BGP will be created after the implementation of the single BGP under the programme of WWF with a geographical reference.

1.3.5 Technical project description

The project activity aims to install 7,500 bio digester plants in the Landscape of Terai, Nepal. The bio digesters will be installed in households with at least 2 cattle. The cattle dung is fed into the bio digesters. Under the anaerobic conditions methane is produced which will be used for cooking. Utilization of this cooking gas reduces the consumption of non-renewable firewood which is normally collected by the women of the families in the forests nearby. Upon request of the households also a grant for toilet construction will be provided. The toilets are connected to the bio digesters; hence they reduce the amount of dung to be fed per day and improve the sanitation of the households. The slurry of the bio digesters flows into a sink and can be used as fertilizer. The total estimated annual emission reductions by the reduction of non-renewable biomass and methane avoidance by handling of animal waste are 21,088 tCO₂.

The key parameters of the biogas plants are given in table 1-3:

Table 1-3: Key parameters of the proposed VER project activity

Biogas Plant	
Type:	GGC 2047, fixed dome
Manufacturer:	As per year wise updated list of recognised Biogas Company by BSP.
Quantity:	7,500
Size	4, 6 and 8 m ³
Feeding materials:	<ul style="list-style-type: none"> • Cattle dung and water • Human excreta (optional)
Minimum required cattle	2, 3 or 4 (depending on the size)
Feasible hight	Upto 2,100 m altitude

2 VALIDATION TEAM

The Validation Team is led by

- **Rainer Winter.** He works at TÜV NORD as ISO 9001/ 14001 Auditor and environmental verifier for EMAS. He is also an approved emission verifier within the European Emission Trading Scheme. Mr. Winter is an authorized JI/CDM Senior Assessor and is global leader of the TÜV NORD JI/CDM CP. For this validation he was assisted by:
- **Katja Beyer.** She is an environmental scientist and in charge with TÜV NORD CERT GmbH. She is an appointed JI/CDM Expert in the JI/CDM Certification Program of TÜV NORD.
- **Srikanth Meesa.** Mr. Meesa is M. Tech. and in charge of TUV India. He is an appointed Expert of the JI/CDM Certification Program of TÜV NORD.

The validation report is verified by:

Eric Krupp. He is an expert in the field of environmental approval procedures as well as national and international Emission Trading. He worked in different projects in the framework of the German allocation procedure and the verification of the annual CO₂ emission reports. Mr. Krupp is an appointed JI/CDM Senior Assessor and the deputy of TÜV NORD JI/CDM certification program.

3 METHODOLOGY

The validation of the project was carried out from July '08 to December '08. It was divided into two phases: the pre-validation and the validation phase. The pre-validation consisted of the following three phases:

- A desk review of the PDD (incl. annexes) and supporting documents with the use of a customised validation protocol according to the Validation and Verification Manual^{/VVM, /GS-VVM/},
- Back ground investigation and follow-up interviews with personnel of the project proponent, the consultant, legal authorities and other stakeholders;
- Reporting of validation findings taking into account the public comments received on TUV NORD website.

The draft validation report includes Corrective action and Clarification Requests (CAR and CR) identified in the course of this validation.

A **Corrective Action Request** is established if

- mistakes have been made in assumptions or the project documentation which directly will influence the project results,

- the requirements deemed relevant for validation of the project with certain characteristics have not been met or
- there is a risk that the project would not be registered by the UNFCCC or that emission reductions cannot be verified and certified.

A **Clarification Request** is issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

The final validation started after issuance of proposed corrective action (CA) of these CAR and CR by the project proponent. The validator has assessed the proposed CA with a positive result and after the closure of these CAR and CR the project proponent has issued the final version of the PDD. On the basis of this the final validation report and opinion were issued.

3.1 Validation Protocol

In order to ensure consideration of all relevant assessment criteria, a validation protocol was used. The protocol shows, in a transparent manner, criteria and requirements, means of verification and the results from pre-validating the identified criteria. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements that a CDM resp. VER GS project is expected to meet;
- It ensures a transparent validation process where the independent entity will document how a particular requirement has been validated and the result of the determination.

The validation protocol consists of three tables: Table 1 (Requirement Checklist); Table 2 (Gold Standard Specific Checklist) and Table 3 (Resolution of Corrective Action and Clarification Request).

The completed validation protocol is enclosed in the annex to this report, identifying 9 Corrective Action Requests and 1 Clarification Request.



Validation Protocol Table 1 and 2: Requirement checklist				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
<i>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.</i>	<i>Gives reference to documents where the answer to the checklist question or item is found.</i>	<i>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.</i>	<i>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.</i>	<i>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). Clarification is used when the validation team has identified a need for further clarification.</i>

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

Figure 1: Validation protocol tables



3.2 Review of Documents

The draft PDD submitted by WWF in July 2008 and supporting background documents related to the project design and baseline were reviewed.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

The documents that were considered during the validation process are given in chapter 7 of this report. They are listed as follows:

- Documents provided by the project proponent (Table 7-1)
- Background investigation and assessment documents (Table 7-2)
- Websites used (Table 7-3).

In order to ensure the transparency of the decision making process, the reference codes listed in tables 7-1 to 7-3 are used in the validation protocol and – as far applicable – in the report itself.

3.3 Follow-up Interviews

From 25th to 29th July 2008, the TÜV NORD JI/CDM CP performed interviews with the project owner, project developer, monitoring and survey companies as well as stakeholders to confirm selected information and to resolve issues identified in the document review.

The key interviewee and main topics of the interviews are summarised in Table 3-1.

Table 3-1 Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project owner representatives, monitoring operating personnel, Survey provider	<ul style="list-style-type: none"> - Chronological description of the project activity - Technical details of the project realisation and Project Design Report - Approval procedures and status - Quality management system - Monitoring and measurement equipment - Crediting period and its starting date - Project activity starting date - Sustainable development benefits because of project - Analysis of local stakeholder consultation - Technical data – technical specification - Training & competency of the staff members w.r.t



Interviewed Persons / Entities	Interview topics
	project management, monitoring and reporting
Project consultant representatives	<ul style="list-style-type: none"> - Editorial aspects of PDD - Methodology selection aspects - Baseline study, leakage and additionality - Details of emission reduction calculation - Debundling
Stakeholder	<ul style="list-style-type: none"> - Job opportunities, income - Stakeholder process - Concerns related to the projects - Social impacts - Environmental impacts

3.4 Resolution of Clarification and Corrective Action Requests

In order to remedy any mistakes, problems or any other outstanding issues which needed to be clarified for positive conclusion on the project design, CARs and CRs were raised. These requests have been resolved or “closed out” by the project proponent by providing the corresponding response in column 3 of table three in the Annex and submission of revised PDD and supporting documents.

In this validation process 9 CARs and 1 CRs have been raised and successfully closed.

The CARs / CRs are documented in Annex and addressed in section 4.

3.5 Initial and Public Stakeholder Comments

An initial stakeholder consultation meeting for local stakeholders and GS listed NGOs has been carried out on 20th August 2007 in Nepalgunj (ISC). As follow up a main stakeholder consultation was carried out on 9th January 2008 in Kupandol (MSC). All GS supporting NGOs which are located in Nepal as well as the international NGOs with locals in Nepal and are not directly involved in the project have attended to at least one of the meetings.

The comments received by the stakeholders have been summarized in the initial stakeholder consultation report which was made publicly available in September 2007 on WWF’s webpage. A consolidated stakeholder report of both meetings was provided to the validator.

The questionnaires to identify environmental impacts have been filled in four groups. All comments received (fulfilled questionnaires) have been checked by the validator. No stakeholder expects significant negative impacts after the full implementation of the project activity. However, impacts during the construction phase might happen but are not significant and thus negligible.



3.6 Finalising the report

The draft validation report was submitted to the project proponents. After reviewing the revised and resubmitted project documentation; resolving the CRs & CARs raised and outstanding concerns TÜV NORD JI/CDM CP issues this final validation report and opinion.

4 VALIDATION FINDINGS

In the following protocol the findings from the desk review of the draft PDD, visits, interviews and supporting documents are summarised.

The results are shown in table 4-1:

Table 4-1: Summary of CAR and CR issued

Validation topic ¹⁾	No. of CAR	No. of CR
General description of project activity (A) - Project boundaries - Participation requirements - Technology to be employed - Contribution to sustainable development	2	1
Project baseline (B) - Baseline Methodology - Baseline scenario determination - Additionality determination - Calculation of GHG emission reductions Project emissions Baseline emissions Leakage - Emission reductions - Monitoring Methodology - Monitoring of Project emissions Baseline emissions Leakage Sustainable development indicators / environmental impacts - Project management planning	6	-
Duration of the Project / Crediting Period (C)	1	-
Environmental impacts (D)	-	-
Stakeholder Comments (E)	-	-
SUM	9	1

¹⁾ The letters in brackets refer to the validation protocol

For an in depth evaluation of all validation items it should be referred to the validation protocol (Annex). Annex also includes all CARs and CRs (Table 3).



4.1 Participation Requirements/ Host Country Check

Since this project activity is under the GS VER scheme a letter of approval is not a prerequisite for the registration. However, the Nepalese DNA has been informed about the project and confirmed the same^{/CDNA/}.

4.2 Project type eligibility screen

The project activity is a small scale bio digester project. Under the GS it is eligible under type A.1 renewable energy, A.1.1 Ecologically Sound Biomass, Biogas and Liquid Biofuels^{/GS-VVM/}. The project qualifies as a small scale project activity and meets the applicability criteria of the GS methodology “Indicative programme, baseline, and monitoring methodology for Small Scale Biodigester”, (version 1)^{/METH/}. The 7500 biodigesters spread over a large area in the Terai region of Nepal have a maximum volume of 10 m³ and are located in one climate zone^{/CS/}. Even if one of the 9 districts involved in the project activity (Palpa) is not located directly in the Terai (it is between the Terai and the Hills), this was assessed as negligible by the validation team, because the middle Hills are not an own climate zone, it is planned to install only 20 BGPs in this district and all districts are located in the tropical and subtropical zone^{/CS/}. The project activity is not a debundled component of a larger project activity, double counting of single installations is avoided by inclusion of all BGPs within the named districts into the WWF biodigester project. Accordingly the project type is eligible for the Gold Standard.

4.3 Project design

The objective of the project is to reduce GHG emissions by replacing respectively reduction of firewood consumption in the region of Terai by subsidizing the installation of 7500 bio digesters (optional with toilet) for households. The biodigesters are filled daily by the users with cattle dung and water; in cases of additional toilet construction the toilets are also connected to the bio digester and the excreta are used as feeding material. In the anaerobic conditions of the BGP the biodegradable material is decomposed by methanogenic bacteria under the production of biogas with a content of 50 to 70 % methane. The methane is transferred via a pipe into the houses where it is connected to a gas cooking stove. By the utilization of the biogas for cooking the firewood consumption will be reduced yearly on an average basis from 3.3 t/hh to 0.69 t/hh. The respective share of non renewable biomass used as firewood will be reduced yearly from 2.88 to 0.6 t/hh. Additionally through the handling of animal waste methane will be avoided because in the project activity a share of the treated cattle dung will produce the methane in the biodigester and hence it will be burned in the cook stoves instead emitted to the atmosphere. Thus the emission of 0.0121 tCH₄ will be saved every year per household. The total emission reduction by the project activity result from the saving

of non renewable biomass fixed CO₂ which would be emitted without the project activity and is equivalent to 21,088 tCO₂e annually.

In the course of the project validation CAR A1, CR A1 and one minor issue (please refer table 3 in the annex of this report) have been raised regarding the project design and the correct completion of the PDD and successfully closed during the validation process.

For an in depth evaluation of all validation items it should be referred to the validation protocol (Annex). Annex also includes all CARs and CRs (Table 3).

4.4 Baseline

The selected baseline approach is in line with the approved GS baseline methodology Indicative programme, baseline, and monitoring methodology for Small Scale Biodigester (Version 1: September 2007)^{/METH/}.

As prescribed in the methodology, the baseline emission could involve emissions from use of fossil fuel and non-renewable biomass for cooking and heating and emissions from the handling of animal waste in the baseline situation.

In this project, the baseline emissions are calculated only for the non-renewable biomass share and the handling of animal waste because as per the surveys conducted for the project activity the utilization of fossil fuels for cooking is negligible in the respective region. The hypothetical utilization of fossil fuel consumption is not considered because of the low income of the households; hence the pre-project situation is the only logical and most conservative baseline scenario.

The calculation of the baseline emissions is based on sample surveys in 397 households. The households have been selected as per random sampling method developed by Mr. Birendra Shahya, Central Bureau of Statistics, Nepal. Mr. Birendra was considered as local expert for the development of the random selection procedure. The total procedure was explained to the validation team during the site visit^{/SAMP/}. The Frame used for the survey was the list of VDC/wards with corresponding number of households from Population Census 2001^{/SAMP/}. Wards were selected by random selection procedure and a list of all hhs in the wards have been prepared. The households were then classified into three categories according to whether the household had livestock (at least one cattle or buffalo), had no livestock and was already a biogas user. Only those households having livestock but not having biogas users were taken into consideration. The households were arranged according to number of persons in the household as in ascending order. The required 20 households were then selected from the list by using systematic sampling scheme for the interview. For the estimation of project implemented area, the samples must be representative. It was decided to enumerate 20 households from each selected ward and 2 wards from each selected VDCs. Then, distribution of

sample sizes has been considered as 10 VDCs x 2 wards x 20 households = 400 households.

As per the surveys conducted the average firewood consumption in the baseline scenario is calculated as 3.321 t per year and per household.

The share of the non-renewable biomass is calculated based on different parameters: The forest area affected by the project activity is calculated with the assumption that the individuals can collect the firewood within a radius of 2 km around their residential area. Protected forest areas have been excluded from the calculation. The forest area (59,708 ha) was multiplied with the annual increment of wood to get the annual increment in the respective area. The annual increment was taken from a local study conducted by the Ministry of Forest and Soil Conservation in 2006^{/NRB/}. Multiplication with the density of fuel wood (0.87 t/m³)^{/NRB/} determines an annual wood increment of 62,335 t/a. The average harvest of wood is calculated separately for the households in the area (based on sample survey and VDC data^{/NRB/}) and industrial consumption. The total harvest of wood is calculated as 478,257 t/a. This leads to a shortage of 415,922 t/a or a share of non-renewable biomass (NRB) of 0.87.

A sensitivity analysis was conducted for the share of NRB. The variation in the mean annual increment of the woody biomass was calculated for values of 1, 1.5 and 0.8 m³/ha and it is shown, that the annual increment has a relatively minor impact to the total share of NRB which ranges only between 0.84 and 0.91; hence the utilization of the local value, taken from a study by the Ministry of Forest and Soil Conservation in 2006^{/NRB/} is considered as most appropriate and conservative.

A relatively higher influence has the variation in the total harvest of wood: an increase by 10% shows that the share of NRB would be reduced to 72% only. Nevertheless, the main part of the total harvest (84 %) is used as fuel wood by the households. Because of increasing prices for fossil fuels and the bad infrastructure in the country it can be expected, that the households have no alternative for a switch to other sources than firewood. Additional, even if the growth in population has reduced in the last years, for Nepal still a growth in the population is expected in the next years in a range of 2 %. Since a growth in the population will increase the pressure to the forests will increase because it can be expected that in this case more firewood will be needed, the fixed share of 87% can be assessed as conservative assumption.

The baseline emissions from handling of animal waste (BE_{aw}) are calculated as per the IPCC Tier 1 approach, since the livestock is normally not kept at the households directly. The same has been observed by the validation team during the site visit. The average number of dairy cows (2.9) and buffalos (1.8) is calculated with the surveys conducted in 397 households. Since manure of chicken and pigs is not fed into the BGPs, this amount is not considered in the survey as well as in the baseline calculation. The number of cows and buffalos is correctly multiplied with the respective emission factor for the temperate climate zone, i. e. EF_{cow} 5 kg/(animal*year) and EF_{buffalo} 5 kg/(animal*year)^{/IPCC/}. Only 50% of the average livestock is used for the calculation correctly as per the IPCC Guidelines^{/IPCC/}. The

final outcome for the parameter BE_{aw} is then correctly calculated as 0.012 t/CH₄ per year and hh respectively 1,906 tCO₂/a for the total installation of 7500 bio digesters.

Altogether the baseline emissions accumulate to 37,401 tCO_{2e} after the installation of 7,500 BGP.

Nevertheless during the validation CAR B1 and CAR B2 have been raised and successfully closed. Please refer table 3 for further information.

Conservative approach

The most plausible scenario at time of validation is the annual fuel wood consumption times the share of non renewable biomass and multiplied with the emission factor of firewood plus the baseline emissions from handling of animal waste multiplied with the respective emission factor. In order to meet the Gold Standard Requirements, it is necessary to use the most conservative alternative for the baseline. For that reason a sensitivity analysis was elaborated for the share of NRB. Please refer the analysis above for the assessment and conclusion. No other fuels than firewood have been considered for the baseline scenario to be most conservative and to avoid overestimation of VERs, because the utilization of fossil fuels is very low in the region covered by the project activity. Additionally only VERs are claimed during the crediting period for the share of plants fully operational, i. e. the no. of plants installed in the previous years multiplied with the performance share (96 % to 97 % in the past^{BUS/}). New constructed plants will claim only VERs for the second half of the year in which they have been constructed because the “construction season” ends in the mid of June, before the rainy season starts^{/IM02/, /PR/}.

TÜV NORD JI/CDM CP confirms that the baseline scenario has been established in a conservative manner and is in compliance with the applied version 1 of the methodology Indicative programme, baseline, and monitoring methodology for Small Scale Biodigester^{/METH/}.

4.5 Additionality

Public announcement check

In January 2004 a Memorandum of understanding was signed between WWF and AEPC to establish a working relationship between the organizations. The objectives have been in general the promotion of alternative energy projects and the utilization of synergies in program support by avoiding duplication in activities and allocating the resources in the most effective manner. In August 2006 WWF requested support from BSP-N in terms of monitoring and quality control for the development of a GS CDM project. After a meeting between representatives of AEPC, WWF Nepal, BSP-N, SNV Nepal and the KfW w. r. t. the implementation of the WWF GS project^{/MM/} on 27th December 2006 a Tripartite agreement was signed between WWF, AEPC and BSP-N for the implementation of the WWF Nepal Gold Standard CDM Biogas Project



outside the National Biogas Support Programme, funded by the governments of Nepal, the Netherlands and Germany^{/MOU/}.

Even if during the first discussions on the implementation of the project activity the term CDM was used, WWF decided because of a non existing methodology for a long time to go ahead with the project under the VER scheme of the GS.

Since the first payment for the project activity was done in May 2007 in terms of a grant to AEPC it was clearly demonstrated and evidenced that the GS VER (respectively CDM) scheme was in mind of WWF from the beginning and the project was not publicly announced to go ahead as a normal project activity.

Additionality Tool Check

Additionality of the project activity has been demonstrated in the PDD^{/PDD/} according to the UNFCCC “Tool for demonstration and assessment of additionality” (version 4)^{TA/} as per the GS requirement for VER project activities, i. e. the latest version available at the time of submission of the PDD. The individual arguments to justify the additionality were summarised in the table below. This table also includes the assessment of the GS validation team.

Step	Argument PP	Assessment of the GS validation team
1	Step 1. Identification of alternatives to the project activity consistent with current laws and regulations	
1a	<p><u>Define alternatives to the project activity:</u></p> <p>The project plausible alternatives have been arrived as:</p> <ol style="list-style-type: none"> 1. Continuation of the pre-project situation, i. e. use of firewood for cooking. 2. The proposed project activity not undertaken as a GS VER project activity. 3. Utilization of other renewable energy technologies. 	<p>The alternatives given in the step 1a can be considered as plausible and credible for the PP. The subsequent steps will show that the project activity without the additional benefit of the GS VERs is not attractive.</p> <p>Sufficient evidences are provided to show that the project activity without the revenues of emission reductions is not financially attractive. Even if the project participant WWF is a non profit organization the project without the revenues would bring a loss in a range of US \$ 1,9 Mio.</p>
1b	<p><u>Consistency with mandatory laws and regulations:</u></p> <p>All alternatives described above comply with the applicable legal and regulatory requirements.</p>	<p>All alternatives are in line with the national laws and regulations.</p>
3	Step 3. Barrier Analysis	

- step passed
- step not passed
- not applicable



Step	Argument PP	Assessment of the GS validation team	
3a	<p>Investment Barrier The costs for a biogas plant vary between \$350 and \$634, depending on size and location. The average costs are considered as \$369 while the average income per household in the region of Terai is only \$200 per year. The total costs calculated by WWF Nepal are predicted with 3,287,029 \$ for the total project activity, including toilet subsidies. An investment gap of 1.8 Mio. US\$ has been identified for the proposed VER project activity.</p> <p>Technological Barrier Because of the high investment costs per plant it is necessary to provide high quality to the users and ensure a long lifetime of the individual BGP. To monitor the quality and improve continuously the same it is necessary to monitor all companies and to provide regular trainings to the construction companies as well as to the users.</p>	<p>In the barrier analysis investment barriers as well as technological barriers have been identified. The compared to the low income high upfront costs for the installation of the biogas plants would make it impossible for most of the users to construct a BGP without any subsidies and/or loans^{/undp/}. The alternative 2, implementation of the project without VER funding and without the investment of WWF would cost only 1,366,152 \$. The implementation without additional subsidies for toilets, higher subsidies for the poor and without the project related cost for monitoring would reduce the total cost in a range of 1.1 Mio US\$. The alternative 1, i.e. the continuously use of firewood for cooking would cost nothing because the common practice is the collection of the firewood in the forests nearby the households. Under the assumption that instead of the bio digesters only improved cook stoves would be promoted, the costs could be estimated with a maximum of 45000 \$.</p> <p>Even if the technology for the construction of biogas plants is available in Nepal it is necessary to monitor the construction performance of the companies and to provide trainings to them to ensure a high quality of the plants. BSP has implemented a well organized monitoring system and provides ratings of the companies as a reference for the households. Additionally they check whether trainings have been provided to the users so that a well running BGP is ensured for each implementation. The average costs for the quality control and database management has been accounted with \$36.</p>	<p><input checked="" type="checkbox"/> step passed <input type="checkbox"/> step not passed <input type="checkbox"/> not applicable (step 2 has to be passed)</p>
3b	<p>The identified barriers would obviously not have prevented alternative 1 and 2.</p>	<p>As per the Additionality Tool it has to be justified that at least one alternative would not have been</p>	<p><input checked="" type="checkbox"/> step passed <input type="checkbox"/> step not passed</p>



Step	Argument PP	Assessment of the GS validation team	
		prevented by the identified barriers. Obviously for the pre project scenario no barrier can be identified. Also the implementation of the project activity without VERs would not require any special monitoring costs related to the performance of the plants or the total database management.	<input type="checkbox"/> not applicable
4	Step 4. Common practice analysis		
4a and 4b	Under the Biogas support program 150,000 BGPs have been installed between 1992 and 2006 all over the country. Nevertheless, the potential is much higher and in the Terai only 6.56% of the total potential of more than 1 Mio plants have been covered.	The argument is substantiated with a publicly available statistic by biogas sector partnership Nepal ^{/bspn/} . Comparison with data of the year 2008 has shown, that within the last two years the covered potential has increased to only 7.9% in the Terai region; this indicates the need of subsidies and strong promotion for the distribution of BGPs because the installation process is still to low to cover the total potential soon.	<input checked="" type="checkbox"/> step passed <input type="checkbox"/> step not passed <input type="checkbox"/> not applicable
Assessment of the validation team		<input checked="" type="checkbox"/> project is additional <input type="checkbox"/> project is not additional	

The additionality provided in the PDD is well substantiated with references and documents (please refer table 7-1, /ADD/). One of the main arguments is the financial barrier identified out of the view of the individual households^{/NHDR/ /ADD/} as well as WWF^{/ADD/}. The simple cost analysis shows a funding gap of US \$ 1.8 Mio. The individual input data have been evidenced e. g. with the currently applicable subsidy rates and several invoices related to the project activity. The subsidy rates are not in jurisdiction of WWF Nepal. They are considered by the government and might change over the years, what is an additional risk from the point of WWF's view.

During the site visit it was detected by the validation team by observations and discussions with some residents, that the normal situation is the collection of firewood in the forests nearby because the purchase of firewood is to expensive; hence the validation team assessed the simple cost analysis as appropriate approach for the calculation of investment analysis because in the normal situation the fuel used for cooking is free for the households so that they have no monetary savings if they install a biogas plant^{/ADD/}; hence the VERs, even if the individuals don't get it directly but indirectly through subsidies for the BGP and toilet construction as well as build up and strengthening of micro financing institutions, are the only revenue for the involved participants.

Additional to financial also technical barriers exist in the country. For the promotion and distribution of the plants it is necessary to ensure high quality to the users for the individual construction. Therefore the continuously monitoring is necessary of the

construction companies as well as the implemented plants to identify any problems in an early stage and to provide additional trainings if necessary. Through BSP a very well implemented quality control and monitoring system is already implemented over the country^{/QC/} but the continuously control of at least constant quality levels and the increase of quality is expensive and leads to additional costs of round about 10% of the initial installation costs per plant.

The common practice analysis shows, that in the end of 2006, the point of time when the decision was made to go on with the project activity, only 6.5 % of the total potential for biogas plants in the region of Terai has been covered^{/ADD/} under the BSP. Keeping in mind that the support program was already running since 1992 this is quite low and it can be concluded by the validation team that a stronger promotion as planned under the WWF Gold Standard Project (GSP) might help to fasten the installation process.

The provided evidences and references have been approved by the validation team to arrive at the conclusion that the revenues from the emission reductions are essential to distribute the BGPs in Nepal.

Nevertheless during the validation CAR B3 has been raised and successfully closed. Please refer table 3 for further information.

ODA Additionality Screen

No ODA funds were used to finance the project activity. This was also confirmed by the project developer by a letter in the PDD (Appendix 4) and was assessed with the business plan^{/ADD/}.

Technology transfer and / or knowledge innovation

Sufficient evidence has been provided to TÜV NORD JI/CDM CP that there are benefits for the project activity due to technology transfer as well as knowledge innovation^{/SD/, QC/}. Benefits results from

- The technology transfer to a rural area.
- Intensive qualification and training of the local staff of the construction companies.
- Training of at least one person per household for the proper operation of the plants
- Performance monitoring.
- Exchange of information with other biogas plant project developers in the private sector and promotion of development in renewable energy sector.

4.6 Crediting Period

The starting date of the crediting period as mentioned in the PDD under Section C.2. is 01/07/2007. The intended crediting period of the project is 7 years with the option of 2 times renewable. The starting date of the project activity as mentioned in the



PDD under Section C.1 and verified by the validation team is 01/01/2007, the beginning of construction of the first biogas plants under the WWF project. The project life time as indicated in the Section C.1.2 of the PDD is considered with 25 years. However, as per experiences of the validation team and discussions with construction companies, under proper operation it is possible that the lifetime get extended^{/IM07/}.

However, CAR C1 has been raised during validation and was successfully closed, please refer table 3 for details.

4.7 Monitoring Plan

The project applies the monitoring methodology Indicative programme, baseline, and monitoring methodology for Small Scale Biodigester (Version 1: September 2007)

All households participating in the project activity will be included in an electronically database with necessary information for unique identification.

The data for the emission reduction calculation per household like amount of fuel consumption and number of livestock are collected via surveys. The surveys are carried out by well trained personnel of BSP Nepal or WWF Nepal via questionnaires. The performance and quality monitoring is carried out by BSP as per a random sampling method. All data from the field surveys are transferred into a database for the project. To avoid double counting with other existing CDM projects, also administered by BSP, a separate database has been developed. Since all biogas plants constructed in the region of Terai will be included into the WWF project a mix-up is unlikely.

Additionally three SD indicators have been identified as crucial (PDD section A.2), i.e. the employment (quality and quantity), livelihoods of the poor and access to essential services.

The number of jobs created will be monitored annually via BSP surveys. The quality of the jobs will be monitored via trainings conducted. As indicator for the livelihoods of the poor the time saved by households for the collection of firewood will be monitored via surveys. The number of toilets constructed can be monitored directly because this information is included in the questionnaire and part of the quality control. For the monitoring of the parameter technological self reliance is possible via a monitoring of the Micro Financing Institutions, Community Forest Coordination Committees; trainings conducted for them and by them as well as the number of plants financed by them are an indicator to the institutional capacity building in the region. Also the indicator already used for the quality of employment, the trainings conducted for the construction companies could be used.

Nevertheless CAR A2 and CAR B6 were raised related to the monitoring plan and tables in the PDD and were successfully closed.

Please refer to Table 3 of Validation Protocol for Corrective Action Request (CARs).

4.8 Calculation of GHG Emissions

Methodologies for calculating emission reductions are documented. The project intends to reduce carbon dioxide (CO₂) emissions by utilization of CH₄ instead of non-renewable firewood for cooking.

Project emissions are correctly applied as per the methodology separately for the part of fuels used even if a biogas plant is installed (PE_{th}) and for the bio digester itself (PE_{biodigester}). The total project emissions are calculated as 6.085 kgCH₄ per year and digester respectively 954 tCO₂ per year for 7500 digesters.

Leakage: Physical leakage is considered with the IPCC default value of 10% and already included in the calculation of the PE_{biodigester} part.

The emission reduction calculation was reviewed by the validation team. All underlying data/ values are transparent presented and assessed to be adequate.

Nevertheless, CAR B4 and CAR B5 have been raised during the validation process w. r. t. the total emission reduction calculation and successfully closed. Please refer table 3 in the annex for further information.

4.9 Sustainable Development

The sustainable development indicators relevant for the project activity have been assessed using the Gold Standard Sustainable Development (SD) assessment matrix.

The scoring is reproducible and the justification considers existing information like results from BSP studies, surveys and the local stakeholder consultation in a sufficient manner^{/BUS//SC//SD//NHDR/}. All considered changes are relative to the baseline situation. In the consultation the scoring of the SD matrix has been discussed in detail with local stakeholders. The results of this consultation confirm the positive impacts of the project in terms of sustainable development.

The total score is +12. There is no sub-total score that is negative and none of the indicators have a negative score. Comprehensive information has been provided to TÜV NORD JI/CDM CP suitable to evidence the data and statements^{/SC/}.

The validation team has discussed during the site visit the scoring of the SD matrix with the project developers and locals and has identified, that the project activity might also have a positive impact of the biodiversity. But since the project is of a small scale and it is difficult to trace back whether only this project leads to an overall positive impact, only the replication of such small renewable energy projects will bring measurable effects for the biodiversity; hence the validation team assessed the provided references as traceable information to conclude the positive impacts of the project activity.

Crucial indicators have been identified and included in the monitoring plan. Nevertheless, CAR A2 has been raised and successfully closed during the validation process.

4.10 Environmental Impacts

An environmental impact assessment is not mandatory in Nepal for the implementation of biogas plants.

As per the GS requirements^{/GS-VVM/} environmental impacts has been discussed during the stakeholder consultations^{/SC/}. The stakeholders have not identified any negative environmental or social impacts, the overall opinion regarding the project activity was positive. Additional, no indicator of the SD matrix was scored negative.

The same was confirmed by residents during the site visit.

The validation team concluded that the project activity will cause only positive impacts in terms of sustainable development and no negative impacts in terms of the environment. Even if most environmental positive impacts like increased biodiversity because of less disturbing the animals and the forest itself without (resp. less) the collection of firewood, the validation team concluded that this is, even if crucial for the project activity, not a monitoring parameter. Since positive impacts for the wood or biodiversity can not be measured on a short term it is recommended to check the influence and changes at least before the start of the second crediting period.

4.11 Comments by Local Stakeholders

An initial stakeholder consultation meeting for local stakeholders and GS listed NGOs has been carried out on 20th August 2007 in Nepalgunj (ISC). As follow up a main stakeholder consultation was carried out on 9th January 2008 in Kupandol (MSC). The presentations have been held in English as well as Nepali. All GS supporting NGOs which are located in Nepal as well as the international NGOs with locals in Nepal and are not directly involved in the project have attended to at least one of the meetings.

The comments received by the stakeholders have been summarized in the initial stakeholder consultation report which was made publicly available in September 2007 on WWF's webpage. A consolidated stakeholder report of both meetings was provided to the validation team^{/SC/}.

The questionnaires to identify environmental impacts have been filled in four groups. All comments received (fulfilled questionnaires) have been checked by the DOE. No stakeholder expects significant negative impacts after the full implementation of the project activity. However, impacts during the construction phase might happen but are not significant and thus negligible.

The validation team contacted some of the stakeholders attended at the meeting^{/IM05/}. All of them confirmed that they appreciate the involvement of WWF into the project activity to promote the biogas plants in the region, the intent to use the VERs for toilet subsidies and additional subsidies for the poor and they complimented the well organized stakeholder meetings where everybody had the possibility to raise questions and to comment the project. Furthermore one lauded also the extension of the session to give all attendees the possibility for discussions. Nobody can expect any negative impacts in terms of social or environmental impacts. It is more expected that by the involvement of WWF also the poors in the region will be assisted.

4.12 Pre-feasibility assessment

Table 4-12: Summary of responses to requests formulated in the GS pre-feasibility assessment

GS pre-feasibility assessment	Response by the project owner / TÜV NORD JI/CDM CP
1. Clarification on Additionality	
The Gold Standard requires the use of the latest version of the UNFCCC Additionality Tool available at the time of submission (i.e. Version 04), in its entirety. Please ensure that all steps of the UNFCCC Additionality Tool are fully covered and documented with appropriate references in section B.3. In particular, identify credible alternatives to the project activity consistent with current laws and regulations (provide supporting references), and show that the claimed barriers would have stopped the project from happening in a business as usual scenario but not at least one of the identified alternatives. Finally, please provide a common practice analysis, i.e. a discussion of the extent to which the proposed project activity has already diffused in the relevant sector and region.	The Additionality has been revised according to the UNFCC Additionality Tool (see section B.3 of the PDD) version 4.
Please provide a transparent financial plan showing that the project does not receive ODA financing based on the condition that emission reductions are transferred to an ODA financing organization.	The financial plan is presented in section B3 in Table B.3.1.
Please describe further the mechanisms to be put in place by the quality control to prevent any risk of double-counting due to other similar project activities that could	The control of double counting is explained in Section D .3. All bio digesters installed in the districts mentioned in the PDD are included



potentially claim the same emission reductions, e.g. what are the control procedures in place to make sure that a retailer cannot claim carbon credits twice for the same cook-stove sold?	automatically into the WWF project activity.
2. Baseline and Project emission Reduction	
Please provide in section B.5 of the PDD (Baseline information) the detailed calculations now provided in section E.4 and provide only main equations and results in section E.4.	Detailed Calculations of baseline are moved to B.5
Sampling approach	
Please provide the SPSS database of the 395 households considered in the baseline calculation and of the 457 households considered in the project emissions calculation, in order for the DOE to be able to randomly check consumption data and reproduce the calculation of the standard deviation. Also provide tables as an annex to the PDD describing the households of the two samples (baseline & project situations) – name, location & address, wood consumption, income status, size of household, type of livestock, size of biodigester installed, etc. in order for reviewers to be informed about the composition of the sample and to be able to assess how representative it is.	The SPSS database of the 395 hhs considered in baseline calculations is presented in Annex 2.4 The database of the hhs considered in project situation is provided in Annex 2.6 The random sampling method has been explained to the validation team in detail.
Please provide the questionnaires used for the statistical analysis as an annex to the PDD.	The questionnaire is attached in Annex 2.3
Please discuss why the two sample data sets are sufficiently close to a normal distribution for the normality hypothesis used in the calculation of the emission reductions to be robust enough.	The statistically representation of the sample group is discussed in Annex 2.2
Non-renewable biomass fraction	
Please revise the calculation of the non-renewable biomass fraction (NRB); according to the parameters given in Table 2, p.47-48, the NRB fraction is 18.3% and not 100% as claimed: $H=355,104$ tonnes per annum, $I=288,633$ t.p.a, and $NRB=(H-I)/H=0.187$.	Calculation has been revised; during the validation process CAR B5 was raised for the same point. The NRB fraction is now calculated as 87%, based on national data provided by the Ministry of Forests and Soil Conservation ^{/NRB/} .
Please provide more explanations to support the choice of the different parameters used in the calculation of the	More explanations have been added. Refer to Table Annex 2.1.1 The area is only the part in a radius of



<p>NRB fraction, e.g. what is the 110,576 ha from where the project activity is sourcing the wood (the whole Terai forestry area, or less, or more?), what domain and ecological zone is considered for the choice of the woody biomass mean annual increment according to the IPCC default values, etc.</p>	<p>2km around the living sites, excl. protected areas. The annual increment of wood is taken from a local study.</p>
<p>Please make sure that all references provided to support the values assumed for the various parameters used in the calculation of the NRB fraction are publicly available or provide them as annexes in the project documentation in order for the DOE to be able to reproduce the calculation.</p>	<p>The references to support the values are provided in Tables Annex 2.1.2; 2.1.3; 2.1.4; 2.1.5; 2.1.6; 2.1.7 and 2.1.8 All necessary data have been available to the validation team.</p>
<p>Please provide a sensitivity analysis showing in the form of a summary table the impact of a variation of the main parameters on the assessment of the NRB, and on the calculated emission reductions. Based on this analysis and in order to be in line with the GS conservativeness principle, make sure you choose the most conservative values (provided they are credible, otherwise justify why they are not and should not be chosen) for the various parameters such as wood density of the standing stock, growth rate of the wood standing stock, wood demand in t/year, wood water content, etc. in order to lead to conservative NRB project emission reductions, in line with the GS conservativeness principle.</p>	<p>The Sensitivity analysis is presented in Annex 2.1 The annual increment and total harvest of wood have been identified as parameters with higher impact and used in a range of +/- 10% for the sensitivity analysis. Since the mean annual increment is based on local data from the Ministry of Forest and Soil Conservation^{/NRB/} instead of global data the validation team arrived at the conclusion that the chosen value is the most appropriate. A bigger impact has the value for the total harvest of wood. Because of increasing fuel prices and increasing growth in the population it can be assumed that the timber consumption in the next years will increase or in the best case be constant; cross-checks have been done by the validation team with publicly available data^{/tao/} of the past which are normally based on assumptions because of lacking information and the production of different wood products has been constant between 2000 and 2006. Hence it is assessed that the chosen values are reasonable and conservative.</p>
<p>Please sense-check the identified NRB fraction with figures given in reports recently released in the public domain, if available.</p>	<p>The previously selected 100% NRB was used in two already approved small scale CDM Projects: Nepal Biogas Activity 1 & 2. Refer to Annex 2.1; hence the 87 % calculated value is assessed as conservative by the validation team compared to similar project activities.</p>
<p>Please discuss how the project activity</p>	<p>Refer to Annex 2.1</p>

<p>and other similar project activities in the region can affect the NRB fraction over the crediting period and whether it is conservative enough to consider a constant NRB fraction.</p>	<p>In Nepal it is impossible to get year wise concrete data of wood harvesting. Normally the data are based on assumptions. Publicly available data^{/fao/} based on assumptions show constant production of wood fuel in the past (0.2 % difference between 1999 and 2006)^{/fao/}, additionally the total harvest of wood used as fire wood in the project activity is equal to only 3.67 % of total fuel wood production in the country^{/FAO/} and the share of households included in the project activity is only 6 % of the average number of households residing in the project area. However, the validation team made their own assessment assumed that the total population in the area growth with 2% per year^{/mundi/}. In this case, taking into consideration also the step wise implementation of the project activity, the NRB share varies between 0.868 and 0.877 during the total crediting period; hence it can be assessed that the constant NRB value over the 7 years crediting period is conservative because the last years would be rounded up to 0.88. Nevertheless the validation team concluded that the NRB fraction shall be recalculated for the 2nd crediting period.</p>
<p>Please correct the value given for EFCO_{2w} (p31 of the PDD); it should be 112,000 kgCO₂/TJ instead of 112 kgCO₂/TJ (the calculation is correct however).</p>	<p>Corrected in the final PDD.</p>
<p>Baseline calculations for the animal waste handling refer to Table 3 of Annex 1 or alternatively to Table 3 of Annex 2, but Annex 1 is about contact details of project participants and Table 3 in Annex 2 is about wood consumption before and after the project activity. Please provide the Table with mentioned survey results regarding animal waste handling.</p>	<p>The SPSS Livestock Database of 395 HHs Considered in the Baseline Calculation is provided in Annex 2.5</p>
<p>Equation 11 of the methodology indeed needs to be corrected. However, equation 4.6 provided in the PDD also needs revision – please add the factor ‘average number of animals per household’ (as in the calculation that follows).</p>	<p>Corrected, see Equation B.5.6 and E.4.6</p>
<p>Please complete the table in section E.6.</p>	<p>Completed, see Table E.6</p>
<p>Equation E.3: PE_h is the amount of CO₂</p>	<p>Corrected, see Equation E.1.3</p>

emission in household h included in the project sample group in the project situation.	
Please provide more details for the reference (CES/IOE.A) supporting the considered fraction of methane combusted (full reference and page numbers).	Details provided. See foot note: 39
3. Sustainable Development Assessment Matrix	
Please revise the matrix to include a third column with a justification paragraph for each one of the 12 scored indicators (a neutral score must also be justified).	Column inserted; justifications are provided; see Table A.2.1
For each justification paragraph, a suitable reference (with page numbers, if applicable) should be provided in order for the scoring to be easily reproducible by the validator. References can come from existing studies, government documents, websites, or local expert interviews (provide name and contact details in such case).	See Table A.2.1
4. Stakeholder Consultation	
A first stakeholder consultation has already taken place and has been well documented. As part of a second round of stakeholder consultation, please be sure to actively invite all GS NGO supporters ¹ to comment on the existing project design retroactively, based on the scored, justified and referenced SD Indicator Matrix, as well as local residents and local officials, including the ones who were consulted earlier. A site-visit (e.g. in one of the villages) is strongly recommended and would be a good opportunity for collecting opinions, discussing the nontechnical summary and the matrix, and for taking photographs. Stakeholder comments must be reported upon and action taken to resolve issues presented in a written and interpretable manner so	See separate report Consolidated Report on Stakeholders Consultations; all suggestions are taken in account. All GS supporters have invited to both stakeholder consultations; the list of the attendees of both events is presented in consolidated report.

¹ WWF Nepal and Winrock Int. Nepal are involved but it is not clear whether the following GS supporter NGOs had also been invited for comments: Clean Energy Nepal, Tuladhar Bhusan, cen@mos.com.np and National Trust For Nature Conservation (NTNC) Nepal, Dahal Ngamindra, ndahal@ntnc.org.np.



<p>as to provide a paper trail that underpins a decision by the validator. Please ensure that the following points are taken into account and fully documented:</p> <ul style="list-style-type: none"> ○ A list of all stakeholders invited to the stakeholder meeting, including local NGOs and GS-NGO Supporters. ○ A copy of the posting/flyer, newspaper article, e-mail or other advertisement source that is used to invite participants to the meeting provided. ○ A clear list of all meeting attendees, with their signatures and clear contact details. ○ A copy of the non-technical summary of the project published or handed out at that meeting. ○ A summary of the resulting stakeholder comments and responses provided. ○ If a questionnaire or door-to-door survey was used, a copy of that original questionnaire. 	
<p>GS strongly suggests that a consolidated report is prepared with the points mentioned above after the second round of stakeholder consultation has occurred. Please provide an extensive summary in the section G of PDD in order to facilitate a more efficient DOE validation.</p>	<p>The consolidated report was prepared and provided to the DOE.</p>
<p>Please provide a summary of the outcomes of the second-round stakeholder consultation in the PDD under section G.</p>	<p>Summary of both stakeholders consultation are presented in Section G of the PDD report.</p>
<p>5. Monitoring</p>	
<p>Please indicate in the SD matrix (with *) which sensitive or critical indicators you will include in the monitoring plan. Sensitive indicators are those deemed particularly sensitive to changes in the framework conditions and/or where the public consultation has yielded concerns of stakeholders. Critical indicators are those deemed crucial for an overall positive impact on sustainable development such as in this project: biodiversity, livelihood of the poor, access to energy services, employment quality and quantity, and technological self-reliance.</p>	<p>Sensitive Indicators are indicated. See Table A.2.1</p>



<p>Please include these in the monitoring plan. The DOE/validator will properly assess (based on the scores and references provided) if the indicators are appropriately monitored according to local circumstances.</p>	<p>The sensitive indicators identified in Table A.2.1 has been included in monitoring plan see Table D.2.1.1 (I.D 12,15 & 16)</p>
<p>6. Others</p>	
<p><i>Transfer of emission reduction ownership</i> – The PDD states that all biogas households agree by contract to transfer CO₂ credits and all other rights associated with their transaction and administration to the WWF. Please provide an example of such a contract as an annex, and discuss in more detail in the PDD the mechanisms put in place for the transfer of the emission reduction ownership (from the biogas users to WWF Nepal via intermediaries), including how this effectively prevents risks of double-counting.</p>	<p>The contract is provided as Appendix 2</p>
<p><i>Retroactive verification</i> - As a reminder, the same DOE may be contracted for both the GS Validation and the Verification of the retroactive credits (for verification of future credits, a different DOE must be used). For each year credited retroactively, a separate verification report documenting compliance with the Gold Standard criteria (particularly regarding critical Sustainable Development indicators, and particularly in regards to resource competition) must be provided.</p>	

5 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the GS Validation and Verification manual^{/GS-VVM/} for small scale projects an initial as well as at least one main stakeholder consultation is required. As per the GS rules and procedures, updates and clarifications an international stakeholder consultation is not required for VER project activities. The PDD along with the consolidated stakeholder report with detailed description of the initial and main stakeholder consultation in Nepal, was made publicly available on the webpage <http://www.global-warming.de/e/1869/> for 60 days (2008-07-17 to 2008-09-15) as per the GS requirements for VER projects. The local NGOs as well as all attendees of the stakeholder consultations in Nepal with e-mail address have been informed directly by the DOE and comments have been invited. No comment received during this period.

Please refer section 4.10 for the initial stakeholder consultation.

6 VALIDATION OPINION

The WWF – The World Wildlife Fund has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: “WWF Nepal Gold Standard Biogas Voluntary Emission Reduction (VER) Project” with regard to the relevant requirements of the Gold Standard for Gold Standard VER project activities, as well as criteria for consistent project operations, monitoring and reporting.

The project activity aims to reduce GHG emissions by the installation of small bio digesters for households for the production of biogas, which will be used for cooking. Thereby the utilization of non-renewable biomass as firewood will be reduced, as well as the collection time of firewood. Within the project also subsidies for toilet construction are provided upon request which are connected to the bio digesters.

A risk based approach has been followed to perform this validation. In the course of the pre-validation, 9 Corrective Action Requests (CARs) and 1 Clarification Request (CRs) were raised and successfully closed.

The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.

In detail the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria (Nepal) and all relevant GS requirements for VER.
- The sustainable development is sufficiently justified and referenced.
- The project additionality is sufficiently justified in the PDD.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 147,613 tCO₂e is most likely to be achieved within the 7 years renewable crediting period (July 2007 to June 2014).

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

Essen, 2008-12-05



Rainer Winter

TÜV NORD JI/CDM Certification Program

Team Leader

Essen, 2008-12-05



Eric Krupp

TN JI/CDM Certification Program

Final Approval



7 REFERENCES

Table 7-1: Documents provided by the project proponent

Reference	Document
/ADD/	<ul style="list-style-type: none"> • Grant agreement WWF - Alternative Energy Promotion Center, period 2nd January 2007 to 15th June 2007, Agreement WB 07 • Grant agreement WWF - Alternative Energy Promotion Center, period 2nd January 2007 to 15th June 2007, Agreement WB 07 • Grant agreement WWF - Alternative Energy Promotion Center, period 11th October to 15th November, Agreement WB 66 • Construction Progress Report, AEPC, dated 15th June 2008 • Grant Agreement WWF – BSP-N, period 1st February to 30th June 2008, Agreement WC42, 2008-05-05 • Grant Agreement WWF – BSP-N, period 2nd January 2007 to 15th June 2008, Agreement WB18, 2008-06-19 • Agreement WWF – Winrock, 30th August 2006 • Invoice Winrock International, Nepal; 25th June 2008 • Technical Potential of Biogas in Nepal • District wise Distribution of Potential and Constructed Biogas Plants, 1992 to 30th June 2007, BSP-N • The Nepal Biogas Support Program: Elements for Success in Rural Household Energy Supply. Policy and Best Practice Document 4; Mendis, M.S. and van Nes, July 1999
/BUS/	Biogas User's Survey 2006/07, Alternative Energy Promotion Centre, July 2007
/CZ/	Climate Zones in Nepal
/EFF/	A Studies Report on Efficiency Measurement of Biogas, Kerosene and LPG Stoves. Biogas Support Programme, July 2001. 20p. BSP Lib Temp No. 71.
/FAO/	FAO Statistical Yearbook 2005 – 2006; Table B.10; Production of selected forest products (2004)
/IEIA/	An Integrated Environment Impact Assessment, BSP, BSP Lib Temp No. 1, June 2002.
/LNO/	Letter of no Objection, Ministry of Environment, Science and Technology, 20 th February 2008
/MM/	Minutes of Meeting on discussion on WWF Nepal Gold Standard Biogas CDM Project, 15 th September 2006, participants from WWF Nepal, AEPC, SNV, BSP/N and Winrock International



Reference	Document
/MOU/	Memorandum of Understanding <ul style="list-style-type: none"> • WWF – AEPC, 2004-01-14 • Request of WWF to BSP-N for support in monitoring and quality control of biogas plants, 2006-08-11 • Tripartite Working Agreement AEPC – BSP-N – WWF, 2006-12-27
/NHDR/	Nepal Human Development Report 2004 – Empowerment and Poverty Reduction, United Nations Development Program
/NRB/	Input data non-renewable biomass calculation <ul style="list-style-type: none"> • Ministry of Forest and Soil Conservation, Department of Forests (DoF 2006, Hamro Ban) • Forest Resources of Nepal (1987 – 1998), Publication No. 74, November 1999 • Master Plan for the Forestry Sector, Nepal, Main Report, Kathmandu December 1988 • VDC Profiles 2001 and 2006 • Sample Surveys
/ORG/	Organisation and responsibilities in the project activity
/PR/	Biogas Plant Completion Progress Report, BSP-N <ul style="list-style-type: none"> • 22nd June 2007 • 31st December 2007 • 15th July 2008
/QC/	Quality control <ul style="list-style-type: none"> • Manual for households • BSP Quality Control System • GSP plant's Quality Control Report • BSP Training Control System • Example sampling quality control, Bakhundole, Lalitpur, All Nepal Biogas Company (Pvt.) Ltd., Branch Sarlahi, sample no. 206400338 • Filled quality control plant code SPGKAN630203 and GPCKAN630100 • Plant completion report BCEKIL640012
/SAMP/	Sample Approach <ul style="list-style-type: none"> • Random Sampling Method • VDC Profiles 2001
/SC/	Stakeholder Consultation <ul style="list-style-type: none"> • Invitation Letter • Questionnaires of local stakeholder consultation • Initial Stakeholder Consultation Report • Consolidated Report on Stakeholders Public Consultations, Winrock,



Reference	Document
	2008 <ul style="list-style-type: none"> Attendance Registries (dated 2007-08-20 and 2008-01-09)
/SD/	<ul style="list-style-type: none"> A Study on Employment Opportunities Created by Biogas Financed Through MFIs, 25th September 2006
/SUR/	<p>Surveys households</p> <ul style="list-style-type: none"> Survey documents Questionnaires Baseline (with example no. 398) Questionnaires Project Activity
/TD/	Technical drawing BGP
/TP/	Technical Potential of Biogas in Nepal
/VDC/	Village Development Committee, Population Profile 2001 Census
/XCS/	Excel calculation sheet, July 2008

Table 7-2: Background investigation and assessment documents

Reference	Document
/CPM/	TÜV Nord JI / CDM CP Manual (incl. CP procedures and forms)
/GSDM/	The Gold Standard Developers Manual, Version 5, dated May 2006
/GSPDD/	Gold Standard Project Design for Gold Standard Voluntary Offset Projects (GS-VER-PDD) with explanation to fulfilment.
/GS-VVM/	The Gold Standard Validation and Verification Manual for Voluntary Offset Projects, dated June 2007
/IPCC-GP/	IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000
/IPCC-RM/	Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual
/KP/	Kyoto Protocol (1997)
/MA/	Decision 17/CP. 7 (Marrakesh – Accords & Annex to decision 17/CP.7)

Reference	Document
/METH/	Indicative programme, baseline, and monitoring methodology for Small Scale Biodigester (Version 1: September 2007)
/SMP/	Simplified modalities and procedures for small-scale clean development mechanism project activities (Annex II to Decision 21/CP.18)
/TA/	Tool for the demonstration and assessment of additionality (Ver 5)
/VVM/	IETA, PCF Validation and Verification Manual (V.4)

Table 7-3: Websites used

Reference	Link	Organisation
/aepc/	www.aepcnepal.org	Alternative Energy Promotion Centre
/bspn/	http://www.biogasnepal.org/	Biogas Sector Partnership – Nepal
/cbs/	http://www.cbs.gov.np/index.php	Central Bureau of Statistics
/cs/	http://www.country-studies.com/	Federal Research Division of the Library of Congress under the Country Studies
/fao/	http://faostat.fao.org/	Food and Agriculture Organization of the United Nations
/gov/	www.nepal.gov.np	Government of Nepal
/GS/	www.cdmgoldstandard.org	The Gold Standard
/ipcc/	www.ipcc-nggip.iges.or.jp	IPCC publications
/mest/	www.most.gov.np	Ministry of Environment, Science and Technology
/mun/	http://www.indexmundi.com/	Index Mundi
/thdl/	http://www.thdl.org/index.php	The Tibetan and Himalayan Digital Library
/undp/	http://www.undp.org/	United Nations Development Program
/unfccc/	http://cdm.unfccc.int	UNFCCC

**Tabelle 7-4: List of interviewed persons**

Reference	Mol ¹		Name	Organisation / Function
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Prashant Singh	Director Business Relations and Operations, WWF Nepal
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Anil Manandhar	Country Representative, WWF Nepal
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Sandeep Chamling Rai	Programme Manager Climate Change and Energy, WWF Nepal
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ugan Manandhar	Alternative Energy Officer, WWF Nepal
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Santosh Nepal	Coordinator Policy, WWF Nepal
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Saroj Rai	Executive Director, BSP-Nepal
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Bala Ram Shrestha	Chief of unit BSP-N
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Khagendra N. Khanal	Quality Control and Monitoring, BSP-N
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Kesha Dewan	Data Management, BSP-N
/IM02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Prakash Lamichhae	Data Revision, BSP-N
/IM02/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Indira Shakya	Program Coordinator, BSP-N
/IM03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Binod Prasad Shristha	Sr. Program Officer, Winrock
/IM03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Prem Sagar Subedi	Microfinance Specialist, Winrock
/IM03/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Karuna Sharma	Sr. Research Officer, Winrock
/IM04/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Birendra Shahya	Central Bureau of Statistics, Nepal
/IM05/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Kiran Bhandari	Community Forest User Group (CFUG) Kalika,



Reference	Mol ¹		Name	Organisation / Function
/IM05/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Gokarna Paudal	Programme Coordinator CFCC Narti
/IM05/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ganesh Kumarchaudh	Manager CFCC Narti
/IM05/	E	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Shankar Raj Pandey	KfW – Nepal
/IM05/	E	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ngamindra Dahal	National Trust for Nature Conservation
/IM05/	E	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Gopal Raj Joshi	Clean Energy Nepal
/IM06/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Mangal Chowdary	Local resident Lalmatiya, bio digester owner (Dome No. PBC00410)
/IM06/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Visswanth Chandary	Local resident Lalmatiya, bio digester owner (Dome No. NDP00159)
/IM07/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Chowdary	Representative Biogas tatha Urja Bikash Company (Pvt.) Ltd.
/IM07/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Adlikain	Representative Gobar Gas tatha Krishi Yantra Bikash (Pvt.) Ltd.
/IM07/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Milor Choudang	Representative Ner Deep Public Gobargas and Urja Company (Pvt.) Ltd.

¹⁾ Means of Interview: (Telephone, E-Mail, Visit)



ANNEX

Validation Protocol

ANNEX: VALIDATION PROTOCOL

Table 1: Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A. General Description of Project Activity <i>The project design is assessed.</i>					
A.1. Project Boundaries <i>Project Boundaries are the limits and borders defining the GHG emission reduction project.</i>					
A.1.1. Are the project's spatial boundaries (geographical) clearly defined?	/PDD/ (A 4.1.4),	DR	Yes, the spatial boundary of the project activity is clearly described in the PDD. The individual projects are located in the Terai Region of Nepal in the following districts: Kailali, Bardyia, Banke, Dang, Kanchanpur, Makwanpur, Parsa, Chitwan. Nevertheless, during the validation the following finding has been detected: The Makwanpur district is repeated twice in table A.4.1, clarification is needed. The longitude and latitude respectively GPS coordinates should be included for the districts as per the GS-VVM. The district Palpa is in between the Terai and the Hills, this should be stated in the corresponding sections of the PDD.	CAR+	OK
A.1.2. Are the project's system boundaries (components and facilities used to mitigate GHGs) clearly	/PDD/ (B.4)	DR	The system boundaries are defined as per the methodology. For the baseline the CO ₂ and CH ₄ emissions are taken into consideration, for project emissions CH ₄ will be considered.	OK	

* MoV = Means of Verification, DR= Document Review, I= Interview

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
defined?					
A.2. Participation Requirements <i>Referring to Part A, Annex 1 and 2 of the PDD as well as the CDM glossary with respect to the terms Party, Letter of Approval, Authorization and Project Participant.</i>					
A.2.1. Which Parties and project participants are participating in the project?	/PDD/ (A.3.), (Annex 1),	DR, I	<p>As the project activity is a VER project, no parties or host country approvals are necessary. WWF Nepal is the project participant involved directly into the project.</p> <p>As indirect parties the MoEST via AEPC and BSP Nepal are involved.</p> <p>Clarification is required whether Winrock International Nepal is involved as project participant because of inconsistency between section A.3 and Annex 1 of the PDD.</p> <p>The type of entity (private or public) is to be stated in the table section A.3.</p>	GRA1	OK
A.2.2. Have all involved Parties provided a valid and complete letter of approval and have all private/public project participants been authorized by an	/PDD/ (A.3.) Appendix 1	DR, I	<p>Not applicable. Nevertheless, WWF Nepal informed the MoEST on 19th January 2007 with a PIN about the planned project activity and has received the No Objection Letter from MoEST for the voluntary participation, dated 2008-02-20. During the validation process the Memorandum of Understanding between the different parties involved directly or indirectly have been provided to the validator^{/MoU/}.</p>	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
involved Party?					
A.2.3. Do all participating Parties fulfil the participation requirements as follows: – Ratification of the Kyoto Protocol – Voluntary participation – Designated a National Authority	/GS/ /unfccc/ /Annex 1/	DR	Nepal has ratified the Kyoto Protocol (15/12/2005). However, thus no LoA is required for Gold Standard VER projects the MoEST has provided a letter of no objection, included in Appendix 1 of the PDD, where the voluntary participation and assistance in sustainable development is confirmed.	OK	
A.2.4. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance.	/PDD/ (Annex 4)	DR, I	Public funding from an Annex I - country is not used to finance the project activity. The same is stated in Appendix 4 of the PDD, dated 2008-07-07.	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A.3. Technology to be employed <i>Validation of project technology focuses on the project engineering, choice of technology and competence/maintenance needs. The validator should ensure that environmentally safe and sound technology and know-how is used.</i>					
A.3.1. Does the project design engineering reflect current good practices?	/PDD/ (A.4.4.)	DR, I	Yes, the project involves the installation of 7500 BGPs, model GCC 2047 in the sizes 4 to 8 m ³ . With the utilization of the biogas for cooking purposes the project reduces the consumption of non-renewable biomass.	OK	
A.3.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	/PDD/ (A.4.2.)	DR; I	The technology of the implemented BGPs is well known and state of the art in Nepal. Within the project the quality of the plants and the construction companies is monitored and verified by BSP, which leads to a continuously upgrading and improvement of the technology. The construction companies will be rated once a year and have to give a 3 year guarantee for the individual plants; hence they have the interest to improve their performance continuously.	OK	
A.3.3. Does the project make provisions for meeting training and maintenance needs?	/PDD/ (A.2.)	DR, I	The construction companies are trained by BSP-N as per a stated training procedure with theoretical and practical parts, pre- and post-tests. Internal trainings are provided to the Trainers (ToT –	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<p>Training of Trainers).</p> <p>The households are trained by the construction companies. Trainings reports with attendance lists and photos are provided to BSP-N. Normally the women of the families are trained for the daily utilization (feeding, cleaning, slurry management); this training is called Female Users Training (FUT).</p> <p>Maintenance is guaranteed by the construction companies for the first 3 years, after this time some people in the communities are trained.</p>		
<p>A.4. Contribution to Sustainable Development</p> <p><i>The project's contribution to sustainable development is assessed.</i></p>					
A.4.1. Has the host country confirmed that the project assists it in achieving sustainable development?	/LNO/	DR	Yes, the host country through the MoEST has confirmed the achievement of sustainable development	OK	
A.4.2. Will the project create other environmental or social benefits than GHG emission reductions?	/PDD/ (A.2.)	DR	The view of the project participants on the contribution of the project activity towards sustainable development is described in section A.2. The project creates energy access to the poor and improves the quality of life in several aspects (health, hygienic conditions). A positive impact for the biodiversity is expected since less people go to the forests for wood collection, but because of the		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<p>small scale over a wide area it is unclear whether these impacts can be lead back to this project activity.</p> <p>Nevertheless, the SD Matrix need revision w. r. t. the following points:</p> <ul style="list-style-type: none"> • Employment (quality): With the project activity new jobs will be created e. g. in the construction area as well as financing sector. For most of them trainings are required. A monitoring of this parameter is required. • Employment (numbers): This parameter is crucial in context of the PA and should be marked with an asterix to make clear that it is a monitoring parameter. • Balance of payments: since the PA does not involve any foreign currency savings for the country this parameter is not affected and should be scored with 0. • Technological self reliance: The PA involves the institutional and capacity building in the region. The parameter should be marked with an asterix for the inclusion in the monitoring plan. 	CAR-2	
<p>Small scale project activity <i>Is it assessed whether the project qualifies as small-scale CDM project activity</i></p>					
A.4.3. Does the project qualify as a small scale CDM project activity as defined	/PDD/ (A.4.2, A.4.3	DR	The project fulfils the requirements for SSC project activities, i. e. the emission reductions are below 60000 tCO _{2e} per year.	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?	A.4.4.1) /GS/				
A.4.4. Is the small scale project activity not a debundled component of a larger project activity?	/IM01/ /IM02/	DR, I	The project is not a debundled component.	OK	
A.5. General Topics					
A.5.1. Has the PDD been duly filled?	/PDD/	DR	Depending on closure of several CARs and CRs	Not yet ok	OK
A.5.2. Has all necessary information been made available to the validator?		DR, I	Yes, all necessary information has been made available to the validator. Please refer the table “Documents provided by the project proponent”.	OK	
B. Project Baseline <i>The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.</i>					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.1. Baseline Methodology <i>It is assessed whether the project applies an appropriate baseline methodology.</i>					
B.1.1. Does the project apply an approved methodology and the correct version thereof?	/PDD/ (B.1) /METH/	DR	The project applies the GS VER methodology “Indicative programme, baseline and monitoring methodology for Small Scale Biodigester” (version 1).	OK	
B.1.2. Are the applicability criteria in the baseline methodology all fulfilled?	/PDD/ (B.1.1), /METH/	DR	Yes, the applicability criteria are fulfilled. Nevertheless, all criteria stated in section I of the methodology should be justified in section B.1.1 of the PDD.	CAR B+	OK
B.2. Baseline Scenario Determination <i>The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.</i>					
B.2.1. What is the baseline scenario?	/PDD/ (B.3.) (B.5) /METH/	DR	The baseline scenario is the situation before the implementation of the bio digesters (i. e. Pre-project scenario). The current situation is the utilization of a smaller part of renewable wood; the larger part is the	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			collection of non-renewable firewood in the forests nearby the individual households. Further emissions can be generated in the baseline situation through fossil fuel consumption.		
B.2.2. What other alternative scenarios have been considered and why is the selected scenario the most likely one?	/PDD/ (B.2.) /METH/	DR, I	<p>Alternatives to the project activity are</p> <ul style="list-style-type: none"> • Continuation of the current situation • Biogas installation without the VER activity • Installation of renewable energy technologies. <p>The selected scenario is the most likely one because in this region the income of the households is low; hence the collection of firewood is the normal situation.</p>	OK	
B.2.3. Has the baseline scenario been determined according to the methodology?	/PDD/ (B.2.), /METH/	DR	<p>The baseline emissions involve emissions from use of fossil fuel and non-renewable biomass for cooking and heating. They are determined through surveys at the households in a sample of the total population. However, the choice of this baseline scenario should be considered as per section 4.1. It should be explained, why the other baseline options are not feasible.</p>	CAR B2	OK
B.2.4. Has the baseline scenario been determined using conservative assumptions where possible?	/PDD/ (B.3.), (B.5) /METH/ /NRB/	DR	Yes, the baseline scenario uses conservative assumptions. Since only one hh in the survey has used fossil fuels, this part is set as zero.	OK	
B.2.5. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic	/PDD/ (B.3.),	DR	Yes, there are no political or economical trends or aspirations to prohibit the utilization of non-renewable biomass or kerosene for cooking in households.	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
trends and political aspirations?					
B.2.6. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?	/PDD/ (E.4.) /Annex/ /METH/ /NRB/	DR	Yes, the baseline scenario is based on available data and literature. References are given in the respective sections.	OK	
B.2.7. Have the major risks to the baseline been identified?	/PDD/ (B.4.)	DR	No major risks were identified and are not to be expected.	OK	
B.3. Additionality Determination <i>The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario.</i>					
B.3.1. Is the project additionality assessed according to the methodology?	/PDD/ (B.3.) /ADD/	DR	In section B.3 of the PDD the Additionality is justified with Additionality Tool version 04. The following findings have been detected during validation, related to additionality: <ul style="list-style-type: none"> • Step 2 has to be elaborated in line with the tool. • The baseline scenario as per the methodology para 2.b Section II has to be considered and ruled out. 	CAR B3	OK
B.3.2. Are all assumptions stated in a transparent and conservative manner?	/PDD/ (B.3.) /ADD/	DR	Yes, the assumptions are conservative and referenced if possible with public available data. All necessary information has been provided to the validator.	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.3.3. Is sufficient evidence provided to support the relevance of the arguments made?	/PDD/ (B.3.)	DR, I	Yes, all evidences have been provided during the on-site visit to the validator. Please refer to the table “Documets provided by the project proponent” what additional to publicly available data has been checked.	OK	
B.3.4. If the starting date of the project activity is before the date of validation, has sufficient evidence been provided that the incentive from the CDM was seriously considered in the decision to proceed with the project activity?	/PDD/ (B.3.) /MoU/	DR, I	The starting date of the project is 1 st January 2007, i.e., before the date of validation. Documents have been provided as evidence that the VER project was considered before this date. At 15 th September 2006 an initial meeting was held between all the involved parties. During this time the project was considered to go for CDM, later it was decided to implement the project as VER.	OK	
B.4. Calculation of GHG Emission Reductions – Project emissions <i>It is assessed whether the project emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i>					
B.4.1. Are the calculations documented according to	/PDD/ (E)	DR	The project emissions are estimated as per methodology. The physical leakage of the bio digesters is deducted as		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
the approved methodology and in a complete and transparent manner?	/METH/ /EFF/		10 % of the total methane production. The combustion efficiency of the biogas stoves is taken as 43.8% for semi-controlled conditions. Following the GS conservativeness principle the lowest value should be used as long as no other data are available.	CAR B4	OK
B.4.2. Have conservative assumptions been used when calculating the project emissions	/PDD/ (E.) /EFF/	DR	Please refer CAR B.4.	CAR B4	OK
B.4.3. Are uncertainties in the project emission estimates properly addressed?	/PDD/ (E) /METH/ /EFF/	DR	Please refer CAR B.4.	CAR B4	OK
B.5. Calculation of GHG Emission Reductions – Baseline emissions <i>It is assessed whether the baseline emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i>					
B.5.1. Are the calculations documented according to the approved methodology and in a complete and	/PDD/ (E.4.) /METH/ /IPCC/	DR	Yes, the calculations are according to the methodology.	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
transparent manner?					
B.5.2. Have conservative assumptions been used when calculating the baseline emissions	/PDD/ (E.4.) /NRB/	DR	<p>Because of an inconsistency in the methodology the NRB share was calculated but not further considered for the calculation of the ER. Only the NRB share should be used for the VER calculation.</p> <p>Local values for the annual wood increment should be used for the calculation, i. e. 1.2 m³ per hectare and year^{NRB/}.</p> <p>Some columns in the excel sheet don't include a values of the surveys, revision is necessary.</p> <p>The new constructed plants are built in the first half of each year; hence they can displace baseline emissions only for the 2nd half of the respective year. Revision is necessary.</p>	CAR B5	OK
B.5.3. Are uncertainties in the baseline emission estimates properly addressed?	/PDD/ (E.4.)	DR	No uncertainties are expected in estimating the baseline emissions.	OK	
<p>B.6. Calculation of GHG Emission Reductions – Leakage</p> <p><i>It is assessed whether leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i></p>					
B.6.1. Are the leakage	/PDD/	DR, I	No significant sources of leakage are identified.	n/a	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
calculations documented according to the approved methodology and in a complete and transparent manner?	(E.2.)				
B.6.2. Have conservative assumptions been used when calculating the leakage emissions?	/PDD/ (E)	DR	Not applicable since leakage is not considered.	N/A	
B.6.3. Are uncertainties in the leakage emission estimates properly addressed?	/PDD/ (E.)	DR	Not applicable since leakage is not considered.	N/A	
B.7. Emission Reductions <i>The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change.</i>					
B.7.1. Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change.	/PDD/ (E.5)	DR	The CARs/CRs given in section B have to be closed satisfactorily before forming an opinion.	Not yet OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.8. Monitoring Methodology <i>It is assessed whether the project applies an appropriate baseline methodology.</i>					
B.8.1. Is the monitoring plan documented according to the approved methodology and in a complete and transparent manner?	/PDD/ (D.2)	DR, I	The parameters to be monitored need revision: <ul style="list-style-type: none"> • It should be clearly stated for each parameter whether it is measured, calculated or estimated. • The recording frequency should be adapted for some parameters, e. g. P_L is a fixed parameter over the crediting period. • The proportion of data to be monitored has to be improved. E. g. the parameter 4 is monitored 100%, not on a sample approach. • The parameters marked with an asterisk in the SD matrix shall be monitored (refer also CAR A2). • Comments should be included how long the data will be kept (see also B.8.2) 	CAR B6	OK
B.8.2. Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/PDD/ (D.2.)	DR, I	Please refer CAR B6.	CAR B6	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.9. Monitoring of Project Emissions <i>It is established whether the monitoring plan provides for reliable and complete project emission data over time.</i>					
B.9.1. 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?	/PDD/ (D.2.)	DR	Since the parameter used for the calculation of project emissions are not to be monitored, this is not applicable.	N/A	
B.9.2. Are the choices of project GHG indicators reasonable and conservative?	/PDD/ (D.2.)	DR	However, the combustion efficiency of the biogas stoves is taken as 43.8% for semi-controlled conditions. Following the GS conservativeness principle the lowest value should be used as long as no other data are available.	CAR B4	OK
B.9.3. Is the measurement method clearly stated for each GHG value to be monitored and deemed appropriate?	/PDD/ (D.2.)	DR	Yes. The parameter which are not fixed are measured with the random sampling approach.	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.9.4. Is the measurement equipment described and deemed appropriate?	/PDD/ (D.2.)	DR	The measurement equipment is a questionnaire form, used for surveys once a year. This is as per the methodology.	OK	
B.9.5. Is the measurement accuracy addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements?	/PDD/ (D.2.)	DR	The “measurement” is done on a random sampling approach. Since no equipment is used erroneous measurements are not possible.	N/A	
B.9.6. Is the measurement interval identified and deemed appropriate?	/PDD/ (D.2.)	DR	The surveys are carried out once a year.	OK	
B.9.7. Is the registration, monitoring, measurement and reporting procedure defined?	/PDD/ (D.2.)	DR	Yes, the surveys are carried out by trained BSP-N employees. They submit the questionnaires to the headquarter where all data are converted into electronically databases.	OK	
B.9.8. Are procedures identified for maintenance of monitoring equipment and installations? Are the calibration intervals being observed?	/PDD/ (D.2.)	DR	Not applicable.	N/A	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.9.9. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	/PDD/ (D.2.)	DR	The surveys are carried out once a year. Trained field operators carry out this work. A day to day handling of data is not applicable.	N/A	
B.10. Monitoring of Baseline Emissions <i>It is established whether the monitoring plan provides for reliable and complete baseline emission data over time.</i>					
B.10.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining baseline emissions during the crediting period?	/PDD/ (D.2.)	DR	No, please refer CAR B6.	CAR B6	OK
B.10.2. Are the choices of baseline GHG indicators reasonable and conservative?	/PDD/ (D/E)	DR, I	Yes, the only considered GHG is the NRB consumption. Burning fossil fuels is considered nil.	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.10.3. Is the measurement method clearly stated for each baseline indicator to be monitored and also deemed appropriate?	/PDD/ (D)	DR	No, kindly refer to CAR B6	CAR B6	OK
B.10.4. Is the measurement equipment described and deemed appropriate?	/PDD/ (D.)	DR	No, kindly refer to CAR B6	CAR B6	OK
B.10.5. Is the measurement accuracy addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements?	/PDD/ (D)	DR	No, kindly refer to CAR B6	CAR B6	OK
B.10.6. Is the measurement interval for baseline data identified and deemed appropriate?	/PDD/ (D.)	DR	The data for the baseline calculation are taken via surveys once a year.	OK	
B.10.7. Is the registration, monitoring, measurement and reporting procedure defined?	/PDD/ (D.) /QC/	DR	BSP-N is responsible for the monitoring. They implement a separate data base for this project activity.	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.10.8. Are procedures identified for maintenance of monitoring equipment and installations? Are the calibration intervals being observed?	/PDD/ (D)	DR	Not applicable, since the surveys are the only monitoring equipment.	OK	
B.10.9. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	/PDD/ (D.) /QC/	DR	Not applicable	OK	
B.11. Monitoring of Leakage <i>It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.</i>					
B.11.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/PDD/ (D)	DR	As leakage is not to be considered, monitoring is not necessary.	N/A	
B.11.2. Are the choices of project leakage indicators	/PDD/ (B.7.)	DR	See comment above.	N/A	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
reasonable and conservative?					
B.11.3. Is the measurement method clearly stated for each leakage value to be monitored and deemed appropriate?	/PDD/ (B.7.)	DR	See comment above.	N/A	
B.12. Monitoring of Sustainable Development Indicators/ Environmental Impacts <i>It is assessed whether choices of indicators are reasonable and complete to monitor sustainable performance over time.</i>					
B.12.1. Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host country?	/PDD/ (D.)	DR	As per the host country monitoring of SD or EI are not necessary. However, since the project activity aims to be registered under the GS monitoring of crucial SD indicators is necessary. Please refer CAR A2	CAR A2	OK
B.12.2. Does the monitoring plan provide for the collection and archiving of relevant data concerning environmental, social	/PDD/ (D.)	DR	See comment above.	CAR A2	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
and economic impacts?					
B.12.3. Are the sustainable development indicators in line with stated national priorities in the Host Country?	/PDD/ (D.)	DR	See comment in B.12.1.	CAR A2	OK
B.13. Project Management Planning <i>It is checked that project implementation is properly prepared for and that critical arrangements are addressed.</i>					
B.13.1. Is the authority and responsibility of overall project management clearly described?	/PDD/ (D) /MoU/	DR, I	Yes, section D.4 of the PDD describes the responsibilities of WF and BSP.	OK	
B.13.2. Are procedures identified for training of monitoring personnel?	/PDD/ (D)	DR, I	The monitoring personnel are trained via internal trainings by BSP. Monitoring structures are well implemented since several years.	OK	
B.13.3. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended	/PDD/ (D.)	DR; i	No emergencies are envisaged leading to higher GHG emissions.	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
emissions?					
B.13.4. Are procedures identified for review of reported results/data?	/PDD/ (D)	DR, I	BSP conducts internal review of the data which are manually converted into the electronically database. Procedures are implemented for quality control of the data.	OK	
B.13.5. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	/PDD/ (D.)	DR	BSP has a very well implemented monitoring system. In case any corrective actions are identified the procedures will be improved.	OK	
C. Duration of the Project/ Crediting Period <i>It is assessed whether the temporary boundaries of the project are clearly defined.</i>					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
C.1. Are the project's starting date and operational lifetime clearly defined and evidenced?	/PDD/ (C.1.) /PR/	DR, I	The starting date of the project activity is January 2007, when the first BGPs under this project activity were constructed. The operational lifetime should be extended to 25 years, because the individual BGPs are installed over a period of 3 years and for the lifetime of the BGP is no limitation known.	CAR C1	OK
C.2. Is the start of the crediting period clearly defined and reasonable?	/PDD/ (C.2.)	DR	The starting date of the crediting period should be revised to 1 st July 2007 since this is the point when the first implementation phase is finalized. The length of the first crediting period is 7 years, renewable.	CAR C1	OK
D. Environmental Impacts <i>Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the validator.</i>					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	/PDD/ (F.) /A/ /SC/	DR	No environmental impacts are considered. Environmental impacts have been discussed during the stakeholder consultation processes. No stakeholder could identify any EI, only negligible impacts have been identified. No parameter in the SD matrix is rated negative. Hence the conduction of a EIA is not necessary.	OK	
D.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	/PDD/ (F) /moest/	DR I	Nepal, the host country does not require an EIA for small biodigester projects.	OK	
D.3. Will the project create any adverse environmental effects?	/PDD/ (E)	DR	No, the project will not create environmental impacts.	OK	
D.4. Are transboundary environmental impacts considered in the analysis?	/PDD/ (E.)	DR	No transboundary effects are expected.	OK	
D.5. Have identified environmental impacts been addressed in the project design?	/PDD/ (E.)	DR	Since no environmental impacts could be identified this is not applicable.	OK	
D.6. Does the project comply with environmental	/PDD/ (E.)	DR	Yes, the project activity is in line with the legislation of Nepal.	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
legislation in the host country?					
For Small- scale projects					
D.7. Does host country legislation require an analysis of the environmental impacts of the project activity?			Refer D.2	OK	
D.8. Does the project comply with environmental legislation in the host country?			Refer D.6	OK	
D.9. Will the project create any adverse environmental effects?			Refer D.3	OK	
D.10. Have environmental impacts been identified and addressed in the PDD?			Refer D.5	OK	
E. Stakeholder Comments <i>The validator should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received.</i>					

CHECKLIST QUESTION		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
E.1.	Have relevant stakeholders been consulted?	/PDD/ (G.1.) /LS/	DR	Yes, relevant stakeholders have been consulted. On 20 th August an Initial Stakeholder Consultation Workshop has been carried out in Nepalgunj. Representatives from MoEST, AEPC, CEN, BSP-N, biogas construction companies, CFCCs, local representatives and directly impacted people have attended.	OK	
E.2.	Have appropriate media been used to invite comments by local stakeholders?	/PDD/ (G.) /LS/	DR, I	The stakeholder meeting was not communicated in a newspaper. All identified stakeholders have been invited through invitation letters. Since local residents and members of the local governance have attended, this procedure is considered to be sufficient. During the workshop all attendees had the possibility to ask questions.	OK	
E.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?			The Nepal law does not require the stakeholder consultation request.	OK	
E.4.	Is a summary of the stakeholder comments received provided?	/PDD/ (G.2.), /SC/	DR	A summary of the comments received is provided in the PDD. Additionally an initial stakeholder consultation report was made publicly available by WWF Nepal.	OK	
E.5.	Has due account been	/PDD/ (G.3.)		As the comments were generally positive w. r. t. environmental impact and sustainability no actions has	OK	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
taken of any stakeholder comments received?			been taken.		

Table 2: Gold Standard requirement checklist for VER projects

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A. Project Eligibility Screen					
The project type is assessed					
A.1.1. Is the Project activity a renewable energy or End use energy efficiency improvement project?	/PDD/ (A.4.3)	DR	Yes, the project is the installation of 7500 biogas plants in households to reduce the non-renewable firewood consumption.	OK	
A.1.2. Has the host country a quantitative reduction target under the Kyoto Protocol?	/PDD/ (A.4.1)	DR	The host country is Nepal, which has no quantitative reduction target under the Kyoto protocol.	OK	
A.1.3. Which size has the project per definition of the GS VER requirements (Micro-, Small-, Large Scale)?	/PDD/ (A.4.2)	DR	The projects emission reductions are less than 60 kt CO _{2e} per year. Thus the project fulfils the requirements of Small-Scale definition. Although the emission reduction calculation needs revision, because of the relation to the non-renewable share (refer CAR B5) the draft calculation was overestimated. Hence the SSC criteria are not affected.	OK	

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A.1.4. Is the project activity a bundle and are all project activities that are part of this bundle eligible under GS?	/PDD/ (A.4.2)	DR	No, the project activity is not a bundle.	OK	
B. Additionality Screen					
Public Announcement Check					
B.1.1. Has the project, in its current design, previously been publicly announced to go ahead without the VER, prior to any payment being need for the implementation of the project?	/PDD/ (A.4.4) /IM02/ /MOU/	DR, I	No, since the project has identified several uncertainties, it was not publicly announced to implement it without the carbon financing. During the site visit it was explained by BSP-N ^{/IM02/} that WWF and BSP-N have a MoU since 2005 ^{/MOU/} . Nevertheless the first discussions started with the thoughts were related to toilet constructions. The implementation of this large scale of BGPs with toilet constructions planned under the project activity are considered under the CDM, resp. VER scheme from the beginning.	OK	
B.1.2. If the project is a Micro Scale project, is a written statement included, that the project has not been announced for implementation without seeking carbon finance during the last 3 years?	/PDD/ (A.4.4)	DR	Not applicable	N/A	
Additionality tool Check					
B.1.3. Is the “Tool for the demonstration and assessment of additionality” of the UNFCCC used in its currently available version?	/PDD/ (B) /TA/	DR	The additionality argumentation is described with version 4 of the Tool for the demonstration of Additionality, i. e. the version available at the	OK	

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			time of submission of the PDD to the GS.		
B.1.4. Is the tool used in it's totally and are the additionilty documents satisfactorily?	/PDD/ (B)	DR	The following findings have been detected during validation, related to additionality: <ul style="list-style-type: none"> Step 2 has to be elaborated in line with the tool. The baseline scenario as per the methodology para 2.b Section II has to be considered and ruled out. 	CAR B3	OK
B.1.5. Are the main arguments reasonable and evidenced?	/PDD/ (B)	DR	Yes, all evidences have been provided during the on-site visit to the validator. Please refer to the table "Documets provided by the project proponent" what additional to publicly available data has been checked.	OK	
B.1.6. Are all references up-to date and reliable?	/PDD/ (B)	DR	Yes, actual available references have been used to satisfy the additionality.	OK	
B.1.7. Is the project activity compared to the normal practice in the region?	/PDD/ (B) /TP/	DR	Yes, the project is compared to common practice in the region. Although BGPs are already installed in the Terrai the potential is exploited with only 6% of the total potential.	OK	
B.1.8. Are all assumptions (quantitative or qualitative) used to demonstrate the additionality conservative?	/PDD/ (B)	DR	Please refer CAR B3	CAR B3	OK
ODA Additionality check					
B.1.9. Is a clear and transparent financing plan submitted which allows an assessment of whether the project financing includes ODA?	/PDD/ (Appendix4) /XCS/		Yes, the financing plan is provided in the PDD as well as in excel format to the validator. No ODA funding is used for the financing of the project activity. This is also stated in Appendix	OK	

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			4 of the PDD.		
B.1.10. Is ODA used for the project activity and if yes is the funding eligible for the GS?			Not applicable.	N/A	
Conservative Approach Check					
B.1.11. Is the baseline methodology described and the choice of the baseline scenario substantiated?	/PDD/ (B)	DR	The project applies the GS approved VER small scale methodology Indicative programme, baseline and monitoring methodology for Small Scale Biodigester. Refer CAR B2, B4 and B5 for the necessary corrections.	CAR B2, CAR B4, CAR B5	OK
B.1.12. Are there any legally binding regulatory instruments?	/PDD/ (B)	DR	No, Nepal are no legally binding regulations for the installation of bio digesters.	OK	
B.1.13. Are evidences provided to assess whether the project activity is not considered as “normal practice”?	/PDD/ (B) /TP/	DR	Yes, the technical potential in the Terai is exploited with only 6% of the total potential; hence the project activity can not be considered as normal practice.	OK	
B.1.14. Is leakage to be considered?	/PDD/ (B, E.2)	DR	According to the methodology leakage is not to be considered.	OK	
B.1.15. Is the most convincing and conservative baseline scenario selected?	/PDD/ (B)	DR	Refer CAR B2, B4 and B5 for the necessary corrections.	CAR B2, CAR B4, CAR B5	OK
Technology Transfer and/or Technology					

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
Innovation Check					
B.1.16. Will there be any transfer or knowledge innovation of technology in the host country of project implementation and are the benefits of the transfer substantiated?	/PDD/ (A.2) /QC/	DR	The installed technology is indigenous. However, under the project activity a quality control of the installed plants is implemented to improve the technology if necessary. The day to day handling of the BGPs is introduced to the women of the households.	OK	
C. Sustainable Development Screen The project's contribution to sustainable development is assessed					
C.1. Sustainable Development Assessment					
C.1.1. Does the project activity clearly demonstrate benefits in terms of SD, based on <ul style="list-style-type: none"> Local / global environment sustainability Social sustainability and development Economic and technological development? 	/PDD/ (A.2)	DR	Yes, in section A.2 the benefits of local, global, social economical and technological development are described. Nevertheless, the SD Matrix need revision w. r. t. the following points: <ul style="list-style-type: none"> Employment (quality): With the project activity new jobs will be created e. g. in the construction area as well as financing sector. For most of them trainings are required. Employment (numbers): This parameter is crucial in context of the PA and should be marked with an asterix to make clear that it is a monitoring parameter. 	CAR A2	OK

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<ul style="list-style-type: none"> Balance of payments: since the PA does not involve any foreign currency savings for the country this parameter is not affected and should be scored with 0. <p>Technological self reliance: The PA involves the institutional and capacity building in the region. The parameter should be marked with an asterisk for the inclusion in the monitoring plan.</p>		
C.1.2. Are all statements in the SD Assessment Matrix based on existing sources and referenced?	/PDD/ (A.2) /SD/ /BUS/	DR, I	Yes, the argumentation is well referenced.	OK	
C.1.3. Is the scoring transparent and verifiable?	/PDD/ (A.2)	DR	Please refer CAR A2	CAR A2	OK
C.1.4. Are all SD indicators discussed during stakeholder consultation?	/PDD/ (A.2)	DR	Yes, during the initial stakeholder consultation the SD Matrix had been discussed. This could be assessed with the provided questionnaires.	OK	
C.1.5. Are all points considered relative to the baseline scenario?	/PDD/ (A.2)	DR	Yes, the points are considered relative to the baseline scenario, i. e. the individual households as well as possibilities in the region (e. g. employment, institutional capacity).	OK	
C.1.6. Scoring requirements: <ul style="list-style-type: none"> Have all components a non-negative sub-total score? 	/PDD/ (A.2)	DR	The scoring of the SD matrix fulfilled the requirements of GS VER projects. No negative scoring is expected.		

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
<ul style="list-style-type: none"> • Is the total score positive? • Has one indicator a score of -2? • Are all indicators scoring -1 subjected to the EIA? 			<p>Nevertheless, the SD Matrix need revision w. r. t. the following points:</p> <ul style="list-style-type: none"> • Employment (quality): With the project activity new jobs will be created e. g. in the construction area as well as financing sector. For most of them trainings are required. • Employment (numbers): This parameter is crucial in context of the PA and should be marked with an asterix to make clear that it is a monitoring parameter. • Balance of payments: since the PA does not involve any foreign currency savings for the country this parameter is not affected and should be scored with 0. • Technological self reliance: The PA involves the institutional and capacity building in the region. The parameter should be marked with an asterix for the inclusion in the monitoring plan. 	GAR A2	OK
C.1.7. In case of significant negative impacts of the project, are the identified points included in the monitoring plan?	/PDD/ (A.2, D)	DR	Since no significant negative impacts are considered, the monitoring of such is not necessary.	OK	

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
C.2. Environmental Impact assessment The project's contribution to sustainable development shall be assessed in the sustainability matrix in section K.					
C.2.1. Does the Project Proponent conforms with (local, regional, national) requirements concerning EIAs?	/PDD/ (F)	DR	Yes, no EIA is required by the Nepal Government.	OK	
C.2.2. Is an EIA carried out by the PP?	/PDD/ (F)	DR	No, since no negative impacts were considered by the stakeholders during the ISC an EIA is not necessary.	OK	
C.2.3. Is it clearly demonstrated whether an EIA is required or not (demonstrated with the EIA Pre-Screen Checklist)?	/PDD/ (F) /LS/	DR, I	Yes, the pre-screen checklist is included in section F of the PDD. The rating is based on the local stakeholder consultations.	OK	
C.2.4. Is each question with regard to every significant impact identified fully documented?	/PDD/ (F) /LS/	DR, I	Yes.	OK	
C.2.5. If no EIA has been carried out, could it be assessed whether <ul style="list-style-type: none"> • Environmental impacts or the project are included in the PDD? • Any SD indicator is scored -1? • Stakeholders identified any significant social or environmental impacts? 	/PDD/ (F) /LSC/ /IEIA/	DR	No stakeholder identified social or environmental impacts. No SD indicator is scored negative. Because no environmental impacts are expected nothing could be included in the PDD. An integrated EIA carried out by BSP in 2002 shows the overall positive impact for the social and environmental circumstances.	OK	

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
C.2.6. In cases where SD indicators are scored -1 or stakeholders identify impacts, is a mitigation plan developed?	/PDD/ (F)	DR	Since no negative scoring is identified, no mitigation plan must be developed.	OK	
C.2.7. If a full EIA has carried out, is the documentation submitted to the validator and are all GS criteria fulfilled?	/PDD/ (F)	DR	Not applicable.	OK	
C.2.8. In case of significant negative impacts of the project, are the identified points included in the monitoring plan?	/PDD/ (D)	DR	Since no significant negative impacts are considered, it is not necessary to include an environmental monitoring in the PDD.	OK	
C.3. Public consultation Procedures					
C.3.1. Was an initial stakeholder consultation conducted with invitation of local policy makers, directly impacted people, NGOs (that have endorsed the GS), the GS?	/PDD/ (G) /SC/	DR	Yes, an initial stakeholder consultation has been carried out on 20 th August 2007. Additional a national stakeholder consultation was held on 9 th January 2008.	OK	
C.3.2. Have comments been actively invited and was the publication adequate publicities?	/PDD/ (G) /SC	DR	Yes, the comments have been actively invited during the stakeholder meeting. The invitation to the meeting has been done via mail and e-mail.	OK	
C.3.3. Is the range of stakeholders selected appropriate?	/PDD/ (G) /SC/	DR	Yes, stakeholders from the government, NGO, local communities and residents have attended to the meeting.	OK	
C.3.4. Were all stakeholders asked to address environmental and social impacts ?	/PDD/ (G) /SC	DR	Yes, during a question and answer sections all attendees had the possibility to address impacts. To fulfil the questionnaires the stakeholders had built for groups to address	OK	

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			any impacts.		
C.3.5. Does the initial stakeholder report include <ul style="list-style-type: none"> • a clear description of the invitation and the meeting? • All written comments received? • An argumentation whether or not a comment is taken into account? 	/PDD/ (G) /SC/	DR	The consolidated stakeholder report of both consultations addresses all points.	OK	
C.3.6. Was a main stakeholder consultation conducted?	/PDD/ (G)	DR	A national stakeholder consultation has been conducted in January 2008. The 60 days main stakeholder consultation of the PDD was conducted between 17 th July 2008 and 15 th September 2008 on http://www.global-warming.de/elemente.php .	OK	
C.3.7. Is the main stakeholder procedure clearly described and are all arguments whether or not comments are taken into account demonstrated?	/PDD/ (G)	DR	The main stakeholder consultation is precisely described in the consolidated stakeholder report ^{SC/} . During the web based stakeholder consultation period of 60 days no comments received.	OK	

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D. Monitoring requirements and Monitoring Plan					
SD Indicators and EIA					
D.1.1. Are all indicators of the SD Matrix and the EIA, which are critical for a positive contribution <ul style="list-style-type: none"> Clearly identified Marked with an asterix in the matrix Added to the monitoring plan? 	/PDD/ (D)	DR	Please refer CAR A2	CAR A2	OK
D.1.2. Are the data to be used for monitoring actually available?	/PDD/ (D)	DR	Yes, all references have been provided to the validator. Please refer also the table "Documents provided by the project proponent.	OK	
Public Consultation					
D.1.3. Are all indicators of importance <ul style="list-style-type: none"> Clearly identified Marked with an asterix Included in the monitoring plan? 	/PDD/ (D)	DR	Since during the public consultations no important indicators have been identified no additional monitoring is necessary.	OK	
Potential mitigation/compensation measures					
D.1.4. Are possible mitigation measures discussed and planned for all indicators scored -1?	/PDD/ (D)	DR	No indicators are scored -1.	OK	

CHECKLIST QUESTIONS IN RESPECT TO MAJOR Aspects of Project Eligibility, Additionality and SD	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.1.5. Is a mitigation plan developed?	/PDD/ (D)	DR	Not applicable since no impacts are expected.	OK	
D.1.6. Are compensation measures implemented for all negative impacts where mitigation is not feasible and could these compensations assessed as sufficient?	/PDD/ (D)	DR	No negative impacts are expected.	OK	

Table 3: Resolution of Corrective Action and Clarification Requests

Draft report clarification requests and corrective action requests by validation team	Ref. checklist table 2	Summary of project owner response	Validation team conclusion
Corrective Action Request			
<p>CAR A1 The Makwanpur district is repeated twice in table A.4.1, clarification is needed. The longitude and latitude respectively GPS coordinates should be included for the districts as per the GS-VVM. The district Palpa is in between the Terai and the Hills, this should be stated in the corresponding sections of the PDD.</p>	A.1.1	<p>The correction has been made; with the repetition of Makwanpur deleted resulting finally in 9 districts, 1 Municipality, 38 VDCs and 2 villages.</p> <p>The longitude and latitude for each districts are added in separate columns in the same Table A.4.1 Information regarding Palpa districts is inserted; refer to foot note 8</p>	All requested corrections are done in the final PDD.
<p>CAR A2 Nevertheless, the SD Matrix need revision w. r. t. the following points:</p> <ul style="list-style-type: none"> • Employment (quality): With the project activity new jobs will be created e. g. in the construction area as well as financing sector. For most of them trainings are required. • Employment (numbers): This parameter is crucial in context of the PA and should be marked with an asterix to make clear that it is a monitoring parameter. • Balance of payments: since the PA does not involve any foreign currency savings for the country this parameter is not affected and should be scored with 0. 	A.4.2, B.8, B.12	Matrix is revised accordingly. See table A.2.1	The SD matrix is corrected in the final PDD. All crucial parameters are marked with an asterix.

Draft report clarification requests and corrective action requests by validation team	Ref. checklist table 2	Summary of project owner response	Validation team conclusion
<ul style="list-style-type: none"> • Technological self reliance: The PA involves the institutional and capacity building in the region. The parameter should be marked with an asterix for the inclusion in the monitoring plan. 			
<p>CAR B1 All criteria stated in section I of the methodology should be justified in section B.1.1 of the PDD.</p>	B.1.2	The criteria justifications are made in Section B.1.1. See page 12	All criteria are justified in the correct section of the PDD. Even if one of the districts is not directly located in the Terai, a distinction of climate zones is not required because the middle hills are between two climate zones (Terai and hills) and only 20 plants shall be constructed there, hence any influence is considered as negligible by the validation team.
<p>CAR B2 The choice of this baseline scenario should be considered as per section 4.1. It should be explained, why the other baseline options are not feasible.</p>	B.2.3	The choice of the baseline scenario is presented in Section B.2.1, page 12 & page 13.	The baseline scenario and selection is precisely described. Observation of the surveys show, that the main fuel used is fire

Draft report clarification requests and corrective action requests by validation team	Ref. checklist table 2	Summary of project owner response	Validation team conclusion
			wood, hence this is also the most conservative baseline scenario.
<p>CAR B3 The following findings have been detected during validation, related to additionality:</p> <ul style="list-style-type: none"> • Step 2 has to be elaborated in line with the tool. • The baseline scenario as per the methodology para 2.b Section II has to be considered and ruled out. 	B.3	<p>The correction has been made in the PDD.</p> <ul style="list-style-type: none"> • Step 2 has been elaborated in line with the tool , see page 15 • The baseline scenario as per the methodology para 2.b Section has been considered under various headings. See pg 15- “simple cost and funding gap analysis” and pg 22- “ common practice analysis” 	Step 2 of the additionality tool is considered appropriately as per the simple cost analysis. The baseline scenario as per the methodology is correctly considered.
<p>CAR B4 However, the combustion efficiency of the biogas stoves is taken as 43.8% for semi-controlled conditions. Following the GS conservativeness principle the lowest value should be used as long as no other data are available.</p>	B.4, B.9	<p>The efficiency of biogas stove is found to be 49.44 percent, 43.8 percent and 32.26 percent for perfectly controlled, semi-controlled and uncontrolled conditions respectively, based on the study by CES/IOE: A Study Report on Efficiency Measurement of Biogas, Kerosene and LPG Stoves. Biogas Support Programme, July 2001. 20p. BSP Lib Temp No. 71, pp 2 and available at http://www.bspnepal.org.np/pdfs/cse_50.pdf.</p> <p>All biodigesters under project activity are considered as semi-controlled therefore combustion efficiency of 43.8% is applied for calculations.</p>	Since the individual projects are controlled regularly by the construction companies as well as the BSP observers for the surveys the classification semi-controlled is accepted as conservative.

Draft report clarification requests and corrective action requests by validation team	Ref. checklist table 2	Summary of project owner response	Validation team conclusion
<p>CAR B5 Because of an inconsistency in the methodology the NRB share was calculated but not further considered for the calculation of the ER. Only the NRB share should be used for the VER calculation. Local values for the annual wood increment should be used if available. Some columns in the excel sheet don't include all values of the surveys, revision is necessary. The new constructed plants are built in the first half of each year; hence they can displace baseline emissions only for the 2nd half of the respective year. Revision is necessary.</p>	B.5	<p>The NRB calculation has been revised and is recalculated as The NRB share was calculated as to be 87%. The VER calculations are revised based on that.</p> <p>The local value of 1.2 m3 has been used. An official translation has been attached in the PDD</p> <p>The revision is done accordingly. Reference in PDD</p> <p>The revision is done accordingly. Reference in PDD</p>	The emission reduction calculation is corrected correspondingly. As per a study in 2006 ^{/NRB/} the annual wood increment in Nepal is 1.2 m ³ .
<p>CAR B6 The parameters to be monitored need revision:</p> <ul style="list-style-type: none"> • It should be clearly stated for each parameter whether it is measured, calculated or estimated. • The recording frequency should be adapted for some parameters, e. g. P_L is a fixed parameter over the crediting period. • The proportion of data to be monitored has to be improved. E. g. the parameter 4 is monitored 100%, not on a sample approach. • The parameters marked with an asterisk in the SD matrix shall be monitored (refer also CAR A2). 	B.8, B.10	The monitoring matrix has been revised accordingly. Reference in PDD	Section D.2.2.1 of the final PDD includes all relevant parameter, necessary for the emission reduction calculation as well as the parameters for the monitoring of SD indicators identified as crucial in section A.2 of the PDD:

Draft report clarification requests and corrective action requests by validation team	Ref. checklist table 2	Summary of project owner response	Validation team conclusion
<ul style="list-style-type: none"> Comments should be included how long the data will be kept (see also B.8.2) 			
<p>CAR C1 The operational lifetime of the project activity should be extended to 25 years, because the individual BGPs are installed over a period of 4 years and for the lifetime of the BGP is no limitation known. Additionally the starting date of crediting period should be revised to 1st July 2007 since this is the point of time when the first implementation phase is finalized.</p>	C.1	The operational lifetime is changed to 25 years. The starting date of crediting period has been revised. Refer section C.	The correction has been incorporated in the final PDD. The 25 years are chosen as a minimum lifetime for the project activity, even if the individual BGPs are running for a longer period if they are well operated. The starting date of crediting period has been changed in all corresponding sections.
Clarification Request			
<p>CR A1 Clarification is required whether Winrock International Nepal is involved as project participant because of inconsistency between section A.3 and Annex 1 of the PDD. The type of entity (private or public) is to be stated in the table section A.3.</p>	A.2.1	Winrock International Nepal is not a project participant; For this project, it is a technical backstopping organization for preparation of VER documentation. The Annex 1 has been changed accordingly. The type of the entity has been clarified.	OK
Minor issues to be corrected:			
In some sections of the PDD the CDM is used. To be consistent this should be revised to VER.		The changes have been made accordingly	OK



Draft report clarification requests and corrective action requests by validation team	Ref. checklist table 2	Summary of project owner response	Validation team conclusion
		in the PDD	