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# Validation Report

VALIDATION OF THE CDM-PROGRAMME OF ACTIVITIES:  
HEAT RETENTION COOKING IN SOUTH AFRICA

REPORT NO. 600500380

**03 January 2012**

TÜV SÜD Industrie Service GmbH  
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**Subject:** Validation of a CDM Programme of Activities : Heat Retention Cooking in South Africa

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**Project Participant(s):**

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112 Magdalen Road, Oxford  
OX4 1RQ UK

**Project Site(s):**

South Africa

**Applied Methodology / Version:**

AMS-II.C / Version 13

Demand-side energy efficiency activities for specific technologies

**Scope(s):**

03

**Technical Area(s):**

3.1

**First POA-DD Version (GSP):**

POA-DD version date: 16-09-2009

Version No.: 01

Starting Date of GSP 22-09-2009

**Final POA-DD version:**

POA-DD version date: 12-11-2011

Version No.: 10

**Estimated Annual Emission Reduction:**

N/A

**Assessment Team Leader:**

Robert Mitterwallner

**Assessment Team Members:**

Cyprian Fusi, Sandeep Kanda, Yutaka Yoshida

**Trainee(s):**

None

**Technical Review:**

Javier Castro, Rachel Zhang, Nikunj Agarwal

**Responsible Certification Body:**

Thomas Kleiser

**Summary of the Validation Opinion:**

- ☒ The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence for the determination of the project's fulfilment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Therefore, TÜV SÜD recommends the project for registration by the CDM Executive Board if the letters of approval of all Parties involved will be available before the expiring date of the applied methodology(ies) or the applied methodology version respectively.
- ☐ The review of the project design documentation and the subsequent follow-up interviews have not provided TÜV SÜD with sufficient evidence for the determination of the project's fulfilment of all stated criteria. Therefore, TÜV SÜD will not recommend the project for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board of this decision.

## Abbreviations

<b>AMS</b>	Approved Methodology Small scale
<b>BM</b>	Build Margin
<b>CAR</b>	Corrective Action Request
<b>CDM</b>	Clean Development Mechanism
<b>CDM EB</b>	CDM Executive Board
<b>CER</b>	Certified Emission Reduction
<b>CM</b>	Combined Margin
<b>CMP</b>	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
<b>CPA</b>	CDM Programme activity
<b>CPA-DD</b>	CDM Programme Activity Design Document
<b>CR / CL</b>	Clarification Request
<b>DNA</b>	Designated National Authority
<b>DOE</b>	Designated Operational Entity
<b>EF</b>	Emission Factor
<b>EIA / EA</b>	Environmental Impact Assessment / Environmental Assessment
<b>ER</b>	Emission Reduction
<b>FAR</b>	Forward Action Request
<b>GHG</b>	GreenHouse Gas(es)
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>IRL</b>	Information Reference List
<b>JPMCC</b>	J.P.Morgan Climate Care <a href="http://www.jpmorganclimatecare.com/">http://www.jpmorganclimatecare.com/</a>
<b>JPMVEC</b>	J.P.Morgan Ventures Energy Corporation (project proponent)
<b>loveLife</b>	NGO, South Africa's national HIV prevention programme <a href="http://www.lovelife.org.za/">http://www.lovelife.org.za/</a>
<b>MP</b>	Monitoring Plan
<b>NB</b>	Natural Balance (Pty) Ltd. (project proponent) <a href="http://www.naturalbalancesa.com/index.html">http://www.naturalbalancesa.com/index.html</a>
<b>NGO</b>	Non Governmental Organisation
<b>OM</b>	Operational Margin
<b>POA-DD</b>	Project Design Document
<b>PoA</b>	Programme of Activities
<b>PoA-DD</b>	Programme of activities design document
<b>PP</b>	Project Participant
<b>TÜV SÜD</b>	TÜV SÜD Industrie Service GmbH
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VVM</b>	Validation and Verification Manual

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## 1 INTRODUCTION

### 1.1 Objective

The objective of the validation process is to provide an independent assessment by a third party, a Designated Operational Entity (DOE), of a CDM-Programme of Activities (PoA). The assessment involves the evaluation of the project basis and design identified in the Project Design Document (PoA-DD) using the defined criteria outlined by the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and results in a conclusion by the executing DOE on whether or not a Programme of Activities is valid to be submitted for registration to the CDM Executive Board (CDM-EB). The ultimate decision on the registration of a proposed Programme of Activities rests with the CDM-EB and the Parties involved.

The Programme of Activities (PoA) addressed in this validation report has been submitted under the following project title:

#### Heat Retention Cooking in South Africa

It is within the scope of this validation report to provide the validation opinion for the PoA as such, while the validation opinion of the real case CPA is contained in the respective report

### 1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of CDM project activities, the scope is set by:

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions and specific guidance outlined by the EB which are published under <http://cdm.unfccc.int>
- PoA Design Document Form (CDM-PoA-DD)
- Procedures for registration of a Programme of Activities
- Baselines and monitoring methodologies (including GHG inventories)
- Management systems and auditing methods
- Environmental issues relevant to the applicable sectoral scope
- Applicable environmental and social impacts and aspects of CDM Programme of Activities (PoA)
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice

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

Once TÜV SÜD receives the POA-DD as well as the specific case CPA-DD, it is made publicly

available on the UNFCCC website and on TÜV SÜD's website, which initiates a 30 day global stakeholder consultation process (GSP). In special circumstances, such as when a project design changes, the GSP may need to be repeated. Information on the POA-DDs is presented on page 1 of this report.

The purpose of a validation is to demonstrate compliance or non-compliance of the project with all stated and valid CDM requirements. Additionally, the purpose of validation is to enable the registration of CDM-Programme of Activities (PoA), which is only a part of the total CDM project cycle.

## 2 VALIDATION METHODOLOGY

The PoA assessment is based on the "Clean Development Mechanism Validation and Verification Manual" and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), relevant host country experience and knowledge of PoA-specific regulatory aspects for evaluating the CDM Programme of Activities (PoA) are appointed. Once the project is made available for the stakeholder consultation process, members of the team carry out the desk review, follow-up actions, resolution of issues identified, and the preparation of the validation report. The prepared validation report and other supporting documents then undergo an internal quality control by the CB "climate and energy" before being submitted to the CDM-EB.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. TÜV SÜD has developed a methodology-specific protocol customized for the project. The protocol demonstrates, in a transparent manner, the project criteria (requirements), discussion on each criterion by the assessment team, and the results from validating the identified criteria.

The validation protocol serves the following purposes:

- To organize the details and provision of clarifications on the requirements of which a CDM project is expected to meet
- To elucidate how a particular requirement has been validated as well as to document the results of the validation and any adjustments made to the project design document.

The validation protocol consists of three tables. The different columns in these tables are described in the tables below.

Validation Protocol Table 1: Conformity of Programme of Activities (PoA) and POA-DD				
Checklist Topic / Question	Reference	Comments	POA-DD in GSP	Final POA-DD
<i>The checklist is organised in sections following the arrangement of the applied POA-DD version. Each section is then sub-divided. The lowest</i>	<i>The section gives reference to documents in which the answer to the checklist question or item is found in</i>	<i>The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is used to explain the conclusions reached. In some cases sub-checklists are ap-</i>	<i>The section is used to present conclusions based on the assessment of the first POA-DD version. The POA-DD is either acceptable based on evidence provided (✓) or a <b>Corrective Action Request (CAR)</b> is issued due to non-compliance with the checklist question (See below). <b>Clarification Re-</b></i>	<i>Conclusions are presented in the same manner based on the assessment of the final POA-DD version and further documents including as-</i>

<i>level constitutes a checklist question / criterion.</i>	<i>case the comment refers to documents other than the POA-DD.</i>	<i>plied indicating yes/no decisions on the compliance with the stated criterion. Any <b>Request</b> has to be substantiated within this column.</i>	<i><b>quest (CR)</b> is used when the validation team has identified a need for further clarification. <b>Forward Action Request</b> is issued to highlight issues related to project implementation that require review during the first verification.</i>	<i>sumptions presented in the documentation.</i>
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Validation Protocol Table 2: Compilation and Resolutions of CARs, CRs and FARs			
	Comments and Results	Ref	Conclusion and IRL
Issue	<i>Corrective Action, Clarification or Forward Action Requests.</i>	<i>Reference to the checklist question number in Table 1</i>	<i>Final conclusions and relevant references.</i>
Response	<i>The responses given by the client or other project participants during communication with the validation team.</i>		
Assessment	<i>Summary of the discussion and revision of project documentation together with the validation team's responses</i>		

In case it is found that the Programme of Activities (PoA) does not meet the CDM requirements, more detailed information on this decision is presented in Table 3.

Validation Protocol Table 3: Unresolved Corrective Action and Clarification Requests		
Clarifications and corrective action requests	Id. of CAR/CR	Explanation of the Conclusion for Denial
<i>Referenced request if final conclusions from table 2 resulted in a denial.</i>	<i>Identifier of the Request.</i>	<i>Detailed explanation of why the project is considered non-compliant with a criterion and a clear reference to the criterion</i>

The completed validation protocol is enclosed in Annex 1.

## 2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment, TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body "climate and energy".

The composition of an assessment team has to be approved by the Certification Body (CB) to assure that the required skills are covered by the team. The CB TÜV SÜD operates the following qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL);
- Validator (V);
- Validator Trainee (T);
- Technical Experts (TE).

It is required that the sectoral scope(s) and the technical area(s) linked to the methodology and project have to be covered by the assessment team.

#### Assessment Team:

Name	Qualification	Coverage of scope	Coverage of technical area	Coverage of financial aspect	Host country experience
Robert Mitterwallner	ATL & V	-	-	-	<input checked="" type="checkbox"/>
Cyprian Fusi <sup>1</sup>	-	-	-	-	<input checked="" type="checkbox"/>
Sandeep Kanda <sup>1</sup>	-	-	-	-	-
Yutaka Yoshida	V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-	<input checked="" type="checkbox"/>

#### Technical Reviewer:

- Javier Castro, Rachel Zhang, Nikunj Agarwal

## 2.2 Review of Documents

The POA-DD for the GSP was submitted to the DOE in September 2009. The POA-DD and additional background documents related to the project design and baseline have been reviewed to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done as an initial step of the validation process. A complete list of all documents and evidence material reviewed is attached as annex 2 to this report.

## 2.3 Follow-up Interviews

During 20/10/2009 to 23/10/2009 (first site visit), and from 07/12/09 to 11/12/2009 (second site visit), TÜV SÜD performed interviews and physical site inspections with project stakeholders to confirm relevant information, and to resolve issues identified in the first document review. In both site visit a total of 75 persons were interviewed. The following table provides a list of persons interviewed in this process (not including the extended list of end users. These can be seen from the signed participation list).

#### Persons Interviewed:

Name	Organisation
Adam Harvey	JP Morgan Climate Care(JPMCC) / JPMorgan Ventures Energy Corporation (JPMVEC)
Sarah Collins	Wonderbag Project Owner, Natural Balance (Pty) Ltd.
Scott Burnett	Molara Consulting, Wonderbag Project Manager, Natural Balance (Pty) Ltd.
Charmain Lines	Wonderbag Communications, Natural Balance (Pty) Ltd.

<sup>1</sup> Has left TÜV SÜD



Name	Organisation
Julia Mepha	Wonderbag Outreach Team, Natural Balance (Pty) Ltd.
Moshy Mathe	Wonderbag Manufacturer
Zandile Maubiko	Operator Manager, Natural Balance (Pty) Ltd.
Mocketsi Komone	TbTF Coordinator
Fisokwakhe Myende	Agent / End User
Donna Mirza	Regional Manager Cape Town
Juliet Wells	Agent / End User
Innocent Ncube	Agent / End User
Saskia Schelling	Agent / End User

## 2.4 Cross-check

During the validation process the team has made reference to available information related to similar projects or technologies as the CDM Programme of Activities (PoA). Project documentation has also been reviewed against the approved methodology/ies applied to confirm the appropriateness of formulae and correctness of calculations.

## 2.5 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to resolve the requests for corrective actions, clarifications, and any other outstanding issues which need to be clarified for TÜV SÜD's conclusion on the project design. The CARs and CRs raised by TÜV SÜD are resolved during communication between the project participants and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that have been given are documented in more detail in the validation protocol in Annex 1.

The final POA-DD version submitted 12 November 2011 serves as the basis for the final assessment presented. Additional changes to the project during the validation process are not considered to be significant with respect to the main CDM objectives. The two CDM main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

## 2.6 Internal Quality Control

Internal quality control is the final step of the validation process and is conducted by the CB "Certification Body climate and energy" who checks the final documentation, which includes the validation report and annexes. The completion of the quality control indicates that each report submitted has been approved either by the head of the CB or the deputy (a veto person is used if necessary). In projects where either the Head of the CB or his/her deputy is part of the assessment team, the approval is given by the one not serving on the project team.

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

### 3 SUMMARY

The assessment work and the main results are described below in accordance with the VVM reporting requirements. The reference documents indicated in this section and Annex 1 are stated in Annex 2 of this report.

#### 3.1 Approval

The project participants are Natural Balance (Pty) Ltd.<sup>2</sup> (henceforth referred to as NB) located in South Africa and J.P.Morgan Ventures Energy Corporation (henceforth referred to as JPMVEC) of United Kingdom. JPMVEC serves as the coordinating/managing entities of this PoA. The Host Party, South Africa on one hand and the Annex I Party, United Kingdom of Great Britain and Northern Ireland on the other hand both meet the requirements to participate in CDM project activities including PoAs.

As DOE requested in CR #3, the project participants was requested to comply with Annex 29, EB47 and the applicable paragraphs have been revised in the latest version Annex 38 of EB55 report as follows;

9. *The coordinating/managing entity shall obtain letters of approval from each host Party and Annex I Party which wishes to be involved in the PoA. Letters of approval shall be issued in accordance with the guidance provided by the Board (EB 16 report, Annex 6).*
10. *The coordinating/managing entity shall obtain letters of authorization of its coordination of the PoA from each Host Party.*

The DNA of the United Kingdom, the Department of Energy and Climate Change (DECC)<sup>3</sup> has issued a LoA which is to authorize JPMVEC as a project participant. The DNA of South Africa, the Department of Minerals and Energy (DME)<sup>4</sup> has already issued a LoA which is to authorize NB and JPMVEC as a project participant. In the LoA, South African DNA explicitly confirms that the DNA will cooperate with Natural Balance (Pty) Ltd and JP Morgan Ventures Energy Corporation, as well as the CDM Executive Board to facilitate the CDM project cycle, to the extent possible. This paragraph has been considered to prove the compliance with the paragraph 10 mentioned above.

After TÜV SÜD has received both LoAs submitted by the project participants, the authenticity and consistency among letters, MoC and PDDs has been carefully checked with e.g. the list publicized at above webpages prior to submitting request for registration to UNFCCC, specially whether the title of the project approved in the letters are exactly in line with the title in the PDD "Heat Retention Cooking in South Africa", whether the identical names of project proponents are stated in those letters as one stated in PDD.

Both LoAs also indicate that each participating Party is a Party has ratified the Kyoto Protocol, and that the participation in the "Heat Retention Cooking in South Africa" is voluntary. The South African LoA has already had these applicable statements and also confirms that the proposed CDM project activity contributes to the sustainable development of South Africa (host country) in order to comply with the paragraph 9. Mentioned above, i.e. the first paragraph in Annex 6 of EB16 report.

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<sup>2</sup> <http://www.naturalbalancesa.com/index.html>

<sup>3</sup> [http://www.decc.gov.uk/en/content/cms/what\\_we\\_do/change\\_energy/tackling\\_clima/intl\\_strat/mechanisms/clean\\_developm/clean\\_developm.aspx](http://www.decc.gov.uk/en/content/cms/what_we_do/change_energy/tackling_clima/intl_strat/mechanisms/clean_developm/clean_developm.aspx)

<sup>4</sup> <http://www.dme.gov.za/dna/index.stm>

In case that either of LoAs refers a specific version of the PDD or validation report. TÜV SÜD will ensure that the corresponding references included to LoA, PDD and validation report shall be consistent. But no specific version is stated in LoAs of this PoA.

As the result of confirming those information given in LoAs, TÜV SÜD has considered the approval as unconditional with respect to these items. TÜV SÜD therefore considers that the requirements of VVM (§§ 45-48) have been met.

## 3.2 Participation

The participants of the Programme of Activities (PoA) have been approved by the corresponding Parties, which is confirmed by the issued LoAs.

The means of validation used are similar to the ones described in Section 3.1, specifically in regard to the approval process of the Programme of Activities (PoA).

## 3.3 Programme of activities design document

The POA-DD is compliant with relevant form and guidance as provided by UNFCCC.

The most recent version of the POA-DD form was used.

TÜV SÜD has confirmed that the guidelines for the completion of the POA-DD in their most recent version have been followed. Relevant information was provided by the participants in the applicable POA-DD sections. Completeness was assessed through the protocol included in Annex 1.

## 3.4 Project description

The following description of the programme of activities as per POA-DD was verified during the on-site audit:

The PoA plans to promote wide-spread use of heat-retention cooking devices known as Wonderbags (henceforth referred to as "WB") in each household in South Africa, particularly in low-income communities. This kitchen utensils is a thermally insulation bag which is to be used to cover a half-way cooked pot removed from a stove. The food in the pot continues to cook while the stove is no longer in use, thereby conserving fuel and/or electricity. The WB can also be used just to keep food or water warm.

The programme of activities intends not only to reduce GHG emissions but also to alleviate the poverty issue in the host country by developing a sustainable chain from manufacturing to selling WBs in cooperation with NGOs like loveLife and Youth for Survival – both awareness/social organizations in South Africa. While the pilot project is already underway, income streams from the sales of CERs would be expected to make the programme of activities financially sustainable.

A key partner is the social support organization is Lovelife<sup>5</sup> - South Africa's national HIV prevention programme for youth. Lovelife<sup>5</sup> manages a network of over 1 million families in 730 low-income communities throughout the 9 provinces of South Africa. This network offers a starting-point for large-scale transformation of cooking patterns, as the Program Activity Implementer (PAI) members will largely be recruited from graduates of the Lovelife<sup>5</sup> community training programmes. This link will facilitate the on-the-ground marketing approaches within the communities marketed to these

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<sup>5</sup> <http://www.lovelife.org.za/corporate/index.html>

families but also supported with follow-up from professionals recruited from Lovelife youth training programmes.

The predominant cooking fuels for low-income families in South Africa are electricity and paraffin (Kerosene). The programme described here will reduce the amount of fossil fuels and electricity used for cooking by low-income families. Through reduction in fossil fuel consumption, the programme will decrease both green house gas emissions and cash expenditure on these cooking fuels.

WB allows most of the cooking operation to be done safely without the stove being lit (or switched on in the case of electric stoves). This will lead to decreased incidence of domestic accidents linked to open flames, spillage of paraffin, or hot plates. Furthermore, the food in a WB stays hot for a long period so meal-times are flexible and tasks outside the kitchen or away from the home can be accomplished more easily during the cooking process, as supervision of the stove is no longer needed. Child care can take place safely away from the kitchen or safely within the kitchen with the stove unlit, while cooking is underway.

The Wonderbag cover is made of 100% cotton. It is filled with expanded polystyrene (EPS) that consists primarily of carbon and hydrogen. EPS is ecologically harmless, contains no CFCs and is fully recyclable. The information presented in the POA-DD on the technical design is consistent with the actual planning and implementation of the Programme of Activities (PoA) confirmed in the following ways:

- A review and cross check of data and information (see annex 2).
- An on-site visit with relevant stakeholder and personnel with knowledge of the programme of activities in attendance.
- A review of information related to similar projects or technologies which have been used to validate the accuracy and completeness of the programme of activities description.

In conclusion, TÜV SÜD confirms that the description of programme of activities, as included in the POA-DD, is sufficiently accurate and complete in order to comply with the requirements of the CDM.

## 3.5 Baseline and Monitoring Methodology

### 3.5.1 Applicability of the selected methodology

Compliance with each applicability condition as listed in the chosen baseline and monitoring methodology AMS-II.C Version 13 has been demonstrated in section E.2 of the PoA-DD.

The assessment was carried out for each applicability criterion and included, among other checks, a compliance check of the PoA with the applicability conditions with regard to baseline setting and eligible project measures. This assessment also included the review of secondary or independent sources to demonstrate the compliance with applicability conditions; for example the size of the project (IRL #6).

The methodology-specific protocol, included in Annex 1, documents the assessment process. The results of the compliance check as well as relevant evidence are detailed in the protocol and in the information reference list.

- Under the PoA, there is no replacement of equipment. WB will be an additional kitchen utensils to save energy consumption in each household. This complies with AMS-II.C. version 13 which states: *"This methodology comprises activities that encourage the adoption of energy-efficient equipment/appliance (e.g., lamps, ballasts, refrigerators, motors, fans, air conditioners, pumping*

*systems) at many sites.”* This is also not a greenfield project as WB is supposed to improve energy efficiency of the existing cooking activities.

- On average, each Wonderbag used alongside either an electric or paraffin stove saves approximately 700kWh of energy per year. This is considerably less than 1% of the energy limit for Type II projects and thus CPA of this PoA is exempted from performing de-bundling check in accordance with *GUIDANCE FOR DETERMINING THE OCCURRENCE OF DE-BUNDLING UNDER A PROGRAMME OF ACTIVITIES (PoA)* as Annex 32 in EB47 report.
- As stated above, this project is not considered to be replacement, since WB does not displace equipment or system. WB has been considered to be the adoption of an additional energy-efficient equipment like inverters in industries.

WB does not contain refrigerants including CFC. While use of expanded polystyrene (EPS) was identified as insulator, the report issued by *PRC-Bouwcentrum, Netherlands* (IRL #12) states that EPS contains no CFC's or HCFC's.

TÜV SÜD confirms that the chosen baseline and monitoring methodology is applicable to the Programme of Activities (PoA).

Emission sources, not addressed by the applied methodology and expected to contribute more than 1% of the overall expected average annual emission reductions, have not been identified.

### 3.5.2 Boundary of Programme of Activities

The programme of activities boundary is defined to be the entire host country, South Africa.

TÜV SÜD confirms that this identified boundary is reasonable as one for the programme of activities and is fully in line with the requirements set by CDM EB.

### 3.5.3 Baseline Identification

The POA-DD defines the following baseline scenario:

- *Status-quo, i.e. the continuation of the current situation*

In the absence of the project activity, the baseline scenario is determined to be predominantly the domestic consumption of grid electricity and fossil fuels in South Africa amongst householders not using heat retention cookers. That is, continuation of the current situation is determined to be the baseline. As mentioned in section 3.9.2. below in this report, the baseline determination as well as the additionality of this programme are simultaneously discussed and justified in accordance with the “Tool for the demonstration and assessment of additionality” version 05.2.

Baseline emissions are CO<sub>2</sub> emissions from the consumption of grid electricity in each household as well as CO<sub>2</sub> emissions from fossil fuel combustion which is typically “illuminating paraffin” which may be called “kerosene” outside South Africa and UK.

The CO<sub>2</sub>emission factor for grid displacement is calculated by first assessing the grid operating and build margins, and then calculating a combined margin in accordance with the “Tool for calculation of the emission factor of an electricity system” version 2. Since Eskom owns the national electricity grid in South Africa and generates 96% of its electricity, the data from Eskom website<sup>6</sup> has been used to calculate the grid emission factor. Simple OM method has been chosen since low-cost and must-run power plants, constitute considerably less than 50% of the national grid. While Eskom refers to IPCC default which are actually the center default, the project proponent correctly apply the lowest values of NCV and CO<sub>2</sub> emission factor of 95% confidence interval to recalculate EFOM conservatively to comply with the “Tool for calculation of the emission factor of an electricity system”

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<sup>6</sup> [http://www.eskom.co.za/live/content.php?Item\\_ID=4226&Revision=en%2F0](http://www.eskom.co.za/live/content.php?Item_ID=4226&Revision=en%2F0)



version 2. To calculate EFBM, Step 5-b “the set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built most recently” has been applied amongst the available data. And the grid emission factor has been determined ex-ante to be 1.01 t CO<sub>2</sub>/MWh, which is less than 1.2 kg CO<sub>2</sub>/kWh stated in Eskom’s Annual Report 2008 (IRL #23). Although Eskom does not disclose the way of calculation, they indicate the center default stated in 2006 IPCC guidelines and that is considered to be the reason of the difference. Since the calculation presented in PDD is correct and 1.01 tCO<sub>2</sub>/MWh is more conservative than the one published by Eskom, DOE has accepted this value determined ex-ante.

With regard to CO<sub>2</sub> emission from fossil fuel combustion, PoA-DD plans to apply IPCC default values due to no availability of reliable local or national data for the emission factor. This still comply with the paragraph 5 in AMS II.C. version 13.

The information presented in the POA-DD has been validated by an initial document review of all data. Further confirmation has been made based on the on-site visit and a review of information from similar projects and/or technologies. The sources referenced in the POA-DD have been quoted correctly. The information was verified against credible sources, such as the following:

- Report on the Wonderbag “Kitchen Test” 2009, Duration: 1 February – 16 March 2009 (IRL#6)
- Annual Report 2008 of Eskom stating 1.2 kgCO<sub>2</sub>/kWh referring CDM approved consolidated methodology 0002<sup>7</sup> (IRL#23)
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2 “Energy”, Chapter 1 (IRL#27)
- Specification of Illuminating Paraffin issued by Sasol referring the compliance with CKS 78, Boiling Point 150-280 °C (IRL#14)
- Report of Petro-products in South Africa (written in Japanese)<sup>8</sup> referring CKS 78(1972) as the standard for Illuminating Kerosene issued by IEE Japan<sup>9</sup> (IRL#15)
- Standardization for the oil and gas industry referring SANS 1913, Kerosenne for domestic heating and cooking, web page stating SANS 1913:2008 (IRL#16)
- The articles about Coal in South Africa<sup>10</sup> (IRL#25)

TÜV SÜD has determined that no reasonable alternative scenario has been excluded.

Based on the validated assumptions used for Programme of Activities (PoA) calculations, TÜV SÜD considers that the identified baseline scenario is reasonable.

Taking the definition of the baseline scenario into account, TÜV SÜD confirms that all relevant CDM requirements, including relevant and/or sectoral policies and circumstances, have been identified correctly in the programme of activities POA-DD.

A verifiable description of the baseline scenario has been included in the POA-DD.

In regard to item 86 of VVM, TÜV SÜD confirms the following statements:

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<sup>7</sup> [http://www.eskom.co.za/annreport08/ar\\_2008/downloads.htm](http://www.eskom.co.za/annreport08/ar_2008/downloads.htm)

<sup>8</sup> <http://eneken.ieej.or.jp/data/pdf/422.pdf>

<sup>9</sup> <http://eneken.ieej.or.jp/en/>

<sup>10</sup> <http://www.dme.gov.za/energy/coal.stm>

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

### 3.5.4 Eligibility Criteria for CPA Inclusion

As of para 165 of the VVM, the eligibility criteria of each CPA is sufficiently provided in section A.4.2.2. in PoA-DD including additionality criteria which are consistent to one stated in E.5.2. as follows;

- *[They (=CPAs) are described appropriately in a CPA-DD document which is approved by the CME and validated by the DOE assigned by the CME] as the basic criteria.*
- *[The relevant CPA-DD conforms to the POA-DD and to the applied methodology] as another basic criteria particular to ensure that the overall structure of each CPA complies with the design of this PoA including the applicability of the applied methodology, additionality and monitoring plan.*
- *[Their record-keeping systems follow those of the programme as a whole] in order particularly to make monitoring plan traceable and verifiable*
- *[The projected sales imply a total customer base not exceeding 75,000 in one year, in order to remain approximately within the small-scale energy saving limits defined by the CDM] in order not to exceed the annual energy saving limits prescribed by the CDM EB for small-scale methodology application (specifically, WB users cooking on electricity the CPAs will not exceed energy savings of 60 GWh<sub>elec</sub>/year and WB users cooking on paraffin the CPAs will not exceed energy savings of 180 GWh<sub>thermal</sub>/year).*
- *[The PAI responsible has signed a contract with NB which permits it to participate in the programme.] in order to make monitoring plan verifiable, particularly to prevent from double counting within this PoA*
- *[Additionality Criteria#1 : the conditions under which distribution is to take place are challenging (for example, lack of conventional distribution infrastructure weak safety and security, high crime rates) and give rise to barriers insurmountable without carbon accreditation, implying the specific criterion that this CPA trains and deploys a specialized staff team to promote and secure adoption and continuing usage of the product.] in order to be consistent to the description given for "Other barriers: the distribution challenge" and "Behavioural barriers (prevailing practice)" which requests additional efforts and mechanism to distribute (to sell) WB to end-users including the development of people's awareness, knowledge and motivation with particular personnel have been recruited and trained to sell WB as well as to develop awareness/knowledge of potential end-users of WB.*
- *[Additionality Criteria#2 : the uncertainty amongst potential lenders or funders as to the viability of distribution of Wonderbags within this CPA, constitutes an impassable investment barrier. The evidence submitted for validation of the programme, in the form of refusals by banks and other potential funders to lend or invest, is directly applicable and relevant to this CPA.] in order*

to be consistent to the description given for "Investment barriers" which requires to prove financing difficulty as NB actually has the difficulty of financing the programme due to the considerable uncertainty as a business recognized by potential lenders like a bank.

- [Additionality Criteria#3 : *the predominant prevailing practice and behavioural conditions found in this CPA do not reflect any considerable change from reliance on conventional technologies (electric and kerosene cooking without heat retention and without equivalent energy-saving practice or technology), as evidenced specifically for this CPA in relevant literature and reports.*] this corresponds to "Behavioural barriers (prevailing practice)" which requests to prove no considerable change reported in any credible literature on kitchen activities which currently rely on the conventional technologies but not on particular energy-saving technologies like WB. Currently there is no article found in which a new trend or considerable change on the peoples' energy consuming behavior in the kitchen is referred, while an article found in the journal (IRL#28) and a report issued by the Ministry of South Africa (IRL#29) refers energy saving potential.

The managing entity therefore employs clear and unambiguous criteria for the inclusion of the CPAs which also complies with the applicability of the applied methodology AMS-II.C. This will enable the eligibility criteria to be checked at the CPA level by the managing entity and will be confirmed by the DOE during inclusion. And, to comply with the paragraph 6.(g) in the "procedures for registration of a programme of activities as a single CDM project activity and issuance of certified emission reductions for programme of activities", Annex 38 of EB55 report, the additionality criteria determined at section E.5.2 has correctly been added in section A.4.2.2. as the eligibility criteria for inclusion of a SSC-CPA in the PoA.

### 3.5.5 Operational and Management Plan

A clear and transparent description of the operational and management arrangement has been provided in section A.4.4.1. of the PoA-DD.

The programme is operated by Natural Balance (Pty) Ltd.<sup>11</sup> (NB), whose role is to devise and implement a regulatory and incentive framework under which WBs will be manufactured by appropriate bodies and marketed by Programme Activity Implementers (PAIs). NB is to provide technical support, secure purchasing Wonderbag from manufacturers, wholesale to retail entrepreneurs (PAIs) and oversight of record-keeping by all parties involved in Wonderbag manufacture and distribution. NB is responsible to spot check PAI records and assures their accuracy, including annual monitoring surveys by a credible 3rd party consultant and reports a summary of CPA sales records and to correlate these records with manufacturing and shipping records, and also with results of annual monitoring surveys as described in the operational diagram.

JPMVEC as the coordinating and managing entity (CME) will support the process of data collection by analysis of quarterly reports and co-operation with regard to preparation of annual reports for submission to the verifying DOE.

Manufacturing of WBs will be undertaken by sub-contractors located in different cities in South Africa. The initial contract will be signed with the voluntary organization Youth for Survival, under the leadership of Moshy Mathe. Youth for Survival is expected to train at least 1000 young female entrepreneurs to manufacture Wonderbags for the Programme. Distribution will be undertaken by the PAIs. One of the sources of recruitment for the PAIs will be graduates of the mpintshi and groundBREAKER programmes of the lovelife network.

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<sup>11</sup> <http://www.naturalbalancesa.com/index.html>



The mechanism to avoid double counting has been included in this section of PoA-DD. Each PAI will maintain a unique sales record, which will be correlated against wholesale purchase contracts between the PAI and NB, manufacturing records, shipping records, and stock records kept by NB and the manufacturers/shippers.

NB will maintain up-to-date and clear manufacturing, shipping, and stock records. NB will also provide guidance to manufacturing, shipping, storage, retail (PAIs) and other sub-contractors, on record keeping while providing quality control through supervision and spots checks. It will be possible therefore for a verifier to confirm the accuracy of the sales record, and to confirm that no WB has been double-counted.

NB will ensure that no PAI is conducting a similar activity as a stand-alone CDM project activity, nor as another CPA within another PoA, e.g. with checking the latest information at UNFCCC website and the website of South African DNA, the Department of Minerals and Energy (DME) in addition to the 5th eligibility criteria listed in the above section 3.5.4.

The potential for double-counting is further eliminated by annual monitoring of the baseline. This minimizes the risk that a carbon saving claimed by another project is counted also by this programme. For example if there is a trend whereby a fraction of households of the type purchasing WBs switch from kerosene to non-fossil alternative, the baseline will reduce as this trend will be apparent from the randomized survey approach. WB users who have switched to low or zero-emission cooking methods/fuels will also be treated as drop-offs, thereby introducing a conservative multiplying effect.

As per EB 47, Annex 32, paragraph 9, it is clearly indicated that the CPA of PoA is exempted from performing a de-bundling check i.e. the energy saved by each WB is estimated to be 700 kWh of energy per year based on the “Kitchen Test 2009” survey. This is far less than 1% of the limit set for small-scale PoAs (i.e. 60 GWh for electrical savings and 180 GWh for thermal savings).

Provisions are in place to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA. The contract signed between Natural Balance (Pty) Ltd.<sup>7</sup> and each PAI ensures that the PAI is aware of and has agreed that their activity is being subscribed to the PoA.

### 3.6 Additionality

The additionality of the programme of activities has been presented in the POA-DD using following approach: “Tool for the demonstration and assessment of additionality” version 05.2, Annex 10 of EB 39 Report (IRL#2)

The approach used in the POA-DD has been assessed initially through the document review in accordance to para 165 of the VVM, during which the following documents were reviewed:

- Report on the Wonderbag “Kitchen Test” 2009, Duration: 1 February – 16 March 2009 (IRL#6)

On site, the additionality was discussed principally with Ms. Sarah Collins, one of the proponents of this PoA, the representative of Natural Balance (Pty) Ltd. and documents have been reviewed on-site (see Annex 2).

Finally, the data, rationales, assumptions, justifications, and documentation provided have been verified using local knowledge as well as sectoral and financial expertise. This information was also confirmed through the following documentation:

- Report of Petro-products in South Africa (written in Japanese)<sup>12</sup> referring CKS 78(1972) as the standard for Illuminating Kerosene issued by IEE Japan<sup>13</sup> (IRL#15)
- Standardization for the oil and gas industry referring SANS 1913, Kerosenne for domestic heating and cooking, web page stating SANS 1913:2008 (IRL#16)
- The articles about Coal in South Africa<sup>14</sup> (IRL#25)
- the Government Gazette No. 34 of 2008: National Energy Act, 2008<sup>15</sup> (IRL #24)

Based on the aforementioned approach, TÜV SÜD confirms that the documentation provided is appropriate for this programme of activities.

### 3.6.1 Prior consideration of CDM

The starting date of the project activity is determined by the day of starting pilot market trials on 1st June 2009. This Pilot Marketing involves a very low volume of trial sales and hand-outs mainly accomplished in order to run household tests on the WB to establish methods of measuring emission reductions in different areas of the country (as tests in only one area were considered invalid for baseline measurement purposes). These early trials may not qualify as the real action of the project, using the defining words of the CDM glossary, and have not required contracts or considerable expenditures for project implementation; indeed they qualify as Minor pre-project expenses, e.g. the contracting of services /payment of fees for feasibility studies or preliminary surveys and as pre-project planning. And these pilot marketing trials was necessary to establish emission reduction measurement methods in more than one area of the country. In order to finance the programme, the project proponent considered it wise to submit the emission reductions based on a voluntary carbon crediting scheme for pre-CDM registration crediting. Thus the start date was set at 1/6/09, even though it is known that sales levels have been very low and declining to zero for lack of finance; indeed the programme has been unable to start in any real way. Nevertheless there was expectation of the project proponent that once considerable progress in this validation could be recognizable positively, some loans may be available to launch the project in these 4 CPAs on the understanding that carbon finance will very likely be available after verification.

As the project proponent aimed to start making emission reductions, DOE has accepted that the starting date of pilot market trials is considered to be the starting date of this programme.

Although the project had already started with 4 CPAs prior to the start of validation process, the level of activities has been low. In fact, marketing activities have not yet been started since NB is waiting for an apparent progress toward CDM registration in order to obtain a loan.

Date	Activity	Document	Auditor Conclusion
17/10/2008	Letter of Declination from PFS	IRL #18	Considered to be one of evidences about financial barrier existed at this early stage.

<sup>12</sup> <http://eneken.ieej.or.jp/data/pdf/422.pdf>

<sup>13</sup> <http://eneken.ieej.or.jp/en/>

<sup>14</sup> <http://www.dme.gov.za/energy/coal.stm>

<sup>15</sup> <http://www.dme.gov.za/pdfs/energy/acts/Energy%20Act%202008.pdf>

19/12/2008	ERPA between Natural Balance (Pty) Ltd, and J.P.Morgan Ventures Energy Corporation	IRL #7	Considered to be one of key evidences about the serious consideration of CDM registration at this early stage.
01/02/2009 – 16/03/2009	KitchenTest 2009, the comprehensive field survey	IRL #6	WB were distributed free of charge. PoA-DD and CPA-DD estimate ERs based on this result.  And annual monitoring survey mentioned in the monitoring plan is developed based on this survey.
01/06/2009	Sales Start of 4 CPAs  Southwest Gauteng, Tshwane, Johannesburg, Caperown	IRL #21	While the activities started with a low volume of trial sales and hand-outs, the project proponents had clear intention of starting the programme as mentioned above. Thus, accepted as the starting date.
13/08/2009	WB Local Stakeholder Consultation Event	IRL #8	Considered as one of the continual actions toward CDM registration.
22/09/2009	Starting validation process (Global Stakeholder Consultation process)	UNFCCC & TÜV SÜD Websites	Same as above
19/10/2009	Draft of expert's opinion on KT2009 and statistical approach to monitor emission reductions	IRL #9	Considered to be the sufficient basis of ERs estimation in PoA-DD and CPA-DD.
20-23/10/2009	DOE's 1 <sup>st</sup> on-site visit	-	-
21/10/2009	Letter of Declination from IDC	IRL #17	Considered to be an additional evidences about the difficulty on the financing the project as this refers the uncertainty of CDM registration as well as of the business model.
07-11/12/2009	DOE's 2nd on-site visit to target communities, Botshabelo in Bloemfontein, Worcester in Cape Town and Umzinto / Hibberdene in Durban	-	-
29/01/2010	submission of the list of CPAs which have started prior to the start of validation process to UNFCCC	IRL #21	Submitted to UNFCCC to comply with the paragraph 72 of EB47 report

The original of the documentation presented has been reviewed and cross checked based on interviews with Ms. Sarah Collins the representative of Natural Balance (Pty) Ltd., Mr. Scutt Burnett, Mol-ora Consulting and with Dr. Adam Harvey of J.P. Morgan Climate Care. The document can be considered appropriate to confirm the serious consideration of CDM registration according to Annex 13 EB62 as well as the continual actions toward CDM registration as demonstrated by the timeline above.

### 3.6.2 Additionality at the Programme level

To begin with, the additionality at the PoA level has been demonstrated as follows:

- The proposed PoA is a voluntary action by the project proponents since South Africa has no national law, policies or mandatory requirements stipulating the adoption of heat retention cookers.
- There is neither a legislation restricting the use of specific fossil fuel in South Africa nor any incentives enforced to promote the use of natural gas in any sector found in the Government Gazette No. 34 of 2008: National Energy Act, 2008<sup>16</sup> (IRL #24).
- References in which illuminating paraffin is stated as predominant fuel particularly in rural districts/communities where electricity is not available (IRL #15)
- The proposed voluntarily coordinated action would not be implemented in the absence of the PoA due to the presence of Investment barriers described below. At the same time the baseline situation, the continuous use of fossil fuels and electricity for cooking at current levels of consumption is not prevented by these barriers.

In section A.4.3 of PoA-DD, additionality of the PoA is demonstrated here following the guidance given in EB 39 Report Annex 10 - "Tool for the demonstration and assessment of additionality" version 05.2.1. Then, the alternative scenarios are listed as follows;

- a) Implementation of the CPA without being registered as a CDM project
- b) Adoption by low-income families of low-emission or zero-emission cook-stoves and fuels
- c) Continuation of the current situation whereby no CPA or other alternatives are undertaken

The alternative scenario b) is immediately excluded at sub-step 1a due to the cost and practicality in the host country. This has been considered reasonable since this programme of activities is supposed to be implemented mainly in low income communities in South Africa.

PoA-DD states that all alternative scenarios are in compliance with mandatory laws and regulations, and this has been considered quite reasonable according to Government Gazette No. 34 of 2008: National Energy Act, 2008<sup>17</sup>.

The alternative scenario a) is excluded at the subsequent steps mainly with "Behavioural barriers" (prevailing practice) in addition to "Investment barriers" and "Other barriers" (the distribution challenge).

Despite the financial savings and convenience associated with a device like the WB, end users seem to prefer their usual cooking habits and/or regime. The programme therefore revolves around an intense, pervasive, and sustained effort to support customers through pre-sales, sales and after-sales familiarisation activities and the availability of specialised skills and organisational capacity (in

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<sup>16</sup> <http://www.dme.gov.za/pdfs/energy/acts/Energy%20Act%202008.pdf>

<sup>17</sup> <http://www.dme.gov.za/pdfs/energy/acts/Energy%20Act%202008.pdf>

the form of a close relationship between NB and the partner organisation - Lovelife). The programme therefore constitutes a very clear example of “first-of-its-kind” with respect to large scale diffusion of WB within the low-income majority population in the country.

In the absence of a secured source of finance and the role played by J.P.Morgan Climate Care, investment and the on-going costs for sensitisation, manufacture, marketing, distribution and quality control would not be affordable to the target project population in the form of high WB prices. Without this unsustainable practice by J.P.Morgan Climate Care, Natural Balance (Pty) Ltd. will not be able to remain viable. Natural Balance (Pty) Ltd. has decided to keep prices artificially low and sell below cost to maintain sales levels in hopes that income from CER sales would soon fill the gap and improve the state of the project to a level which could be sustainable in a long run.

Even with a commercial loan, which is difficult to obtain due to the nature of the business, the project will still not be viable and sustainable because of high WB prices.

Based on the validation of the barriers presented above, the assessment team can confirm, with reasonable certainty, that the barriers are credible and correctly presented to demonstrate the additionality of the project.

And to reinforce Investment barriers as well as the risk as a business, letters of declination about financing the programme have been submitted as evidences (IRL #17, #18)

Based on the site visit of several target communities including Gauteng, Johannesburg, Botshabelo in Bloemfontein, Worcester in Cape Town and Umzinto / Hibberdene in Durban as well as the on-site interviews with NB, JPMCC and Molara Consulting, the audit team has accepted these justification about the identified baseline scenario and has determined that no reasonable alternative scenario has been excluded.

Taking the definition of the baseline scenario into account, TÜV SÜD confirms that all relevant CDM requirements, including relevant and/or sectoral policies and circumstances, have been identified correctly in the project PoA-DD. And verifiable description of the baseline scenario has been included in the PoA-DD.

In regard to item 86 of VVM, TÜV SÜD confirms the following statements:

- (f) All the assumptions and data used by the project participants are listed in the PoA-DD, including their references and sources;
- (g) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PoA-DD;
- (h) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence, and can be deemed reasonable;
- (i) Relevant national and/or sectoral policies and circumstances are considered and listed in the PoA-DD;
- (j) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario, and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

Based on the aforementioned approach, TÜV SÜD confirms that the proposed PoA is additional..

### **3.6.3 Additionality of a typical SSC-CPA**

The additionality of a typical SSC-CPA is justified with barriers in section E.5.1. in PoA-DD using the same approach as in the programme presented in section A.4.3. in PoA-DD in accordance with the approach stated in the guidance given in EB 39 Report Annex 10 - “Tool for the demonstration and assessment of additionality” version 05.2.1.

WB is not a popular product which is commonly available in the market like CFL. WB is supposed to be supplied by this specific programme. In other words, CPA significantly relies on the supply chain of WB which is going to be established by the programme. It is therefore considered reasonable to



discuss the barriers common between the programme and CPAs. And both Investment barriers, Behavioural barriers and the distribution challenge are considered applicable to a typical CPA too.

To ensure the additionality of CPAs, PoA-DD identifies the key criteria for assessing the additionality of a SSC-CPA consistent with the barriers explained in section E.5.2. in PoA-DD.

The first criterion, "the conditions under which distribution is to take place are challenging (for example, lack of conventional distribution infrastructure weak safety and security, high crime rates) and give rise to barriers insurmountable without carbon accreditation, implying the specific criterion that this CPA trains and deploys a specialized staff team to promote and secure adoption and continuing usage of the product." correspond to " **Other barriers: the distribution challenge**" and " **Behavioural barriers (prevailing practice)**" which requests additional efforts and mechanism to distribute (to sell) WB to end-users including the development of people's awareness, knowledge and motivation.

The second criteria, "uncertainty amongst potential lenders or funders as to the viability of distribution of Wonderbags within this CPA, constitutes an impassable investment barrier. The evidence submitted for validation of the programme, in the form of refusals by banks and other potential funders to lend or invest like IRL#17 and #18, is directly applicable and relevant to this CPA." correspond to " **Investment barriers**" which requires to prove financing difficulty as NB actually has the difficulty of financing the programme due to the considerable uncertainty as a business recognized by potential lenders like a bank.

The third criteria, "the predominant prevailing practice and behavioural conditions found in this CPA do not reflect any considerable change from reliance on conventional technologies (electric and kerosene cooking without heat retention and without equivalent energy-saving practice or technology), as evidenced specifically for this CPA in relevant literature and reports like IRL#28 and #29 correspond to " **Behavioural barriers (prevailing practice)**" which requests to prove no considerable change reported in any credible literature on kitchen activities which currently rely on the conventional technologies but not on particular energy-saving technologies like WB.

Based on the aforementioned approach, TÜV SÜD confirms that additionality can be appropriately demonstrated for a typical CPA, consistently based on the barriers identified in the additionality discussion presented in PoA-DD.

### 3.6.4 Emission Reductions from a typical CPA

The procedures provided in the methodology are correctly depicted in the PoA-DD and the template CPA-DD.

- The description provided in PoA-DD complies well with the requirements of the applied methodology on how to determine baseline emissions and project emissions, e.g. the paragraph 5, 6-Option 2, 8
- As WB is considered to have "variable current (ampere) characteristics" stated in paragraph 15 of the applied methodology, annual monitoring survey justifies the inclusion of annual checks of a sample of non-metered systems.
- The CO<sub>2</sub>emission factor for grid displacement is correctly calculated in accordance with the "Tool for calculation of the emission factor of an electricity system" version 2. Since Eskom owns the national electricity grid in South Africa and generates 96% of its electricity, the data from Eskom website<sup>18</sup> has been used to calculate the grid emission factor. And the project

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<sup>18</sup> [http://www.eskom.co.za/live/content.php?Item\\_ID=4226&Revision=en%2F0](http://www.eskom.co.za/live/content.php?Item_ID=4226&Revision=en%2F0)

proponent correctly apply the lowest values of NCV and CO<sub>2</sub> emission factor of 95% confidence interval stated in 2006 IPCC Guidelines.

- The transmission & distribution (T&D) losses is currently determined to be 8% in accordance with the page 105 of the Eskom Annual Report 2008 to comply with the requirements, "The SSC-CPA shall obtain the transmission & distribution (T&D) losses from the most recent data published either by a national utility or an official governmental body. Where these are not available a default value of 10% is to be used."
- CO<sub>2</sub> emission from fossil fuel combustion, PoA-DD plans to apply IPCC default values due to no availability of reliable local or national data for the emission factor. This still comply with the paragraph 5 in AMS II.C. version 13.

The formulae are correctly presented for the determination of emission reductions.

While emission reduction can be estimated in PoA-DD and CPA-DD based on the result of Kitchen Test 2009, actual emission reduction achieved will be determined based on annual monitoring survey using the equations and the formulae described in PoA-DD and CPA-DD.

The assumptions and data used to estimate the emission reductions are very clearly presented in the report of Kitchen Test 2009.

Based on the information reviewed it is confirmed that the sources used are correctly quoted and interpreted in the PoA-DD.

In summary, the calculation of emission reductions are considered correct and the baseline methodology has been applied correctly according to requirements.

### 3.7 Monitoring plan

The monitoring plan is presented in section E.7.2 in PoA-DD which has been considered to comply with the requirements of the applicable methodology. The assessment team has verified all parameters in the monitoring plan against the requirements of the methodology and no deviations have been found.

In addition, the validation team has agreed that it is not economically practical to install an additional electricity meter at a kitchen at all sample households, although even low income households have electricity meters (as a main meter for the total purchased/consumed). And it is very difficult quantitatively to monitor the performance of WB even if an additional electricity meter is installed at a kitchen, because the changes on other factors like the size of families, cooking behavior, other energy consuming kitchen appliances, etc. can impact on the energy consumption at a kitchen more than the effect of WB. In other word, the simple comparison between before and after WB will not provide accurate monitoring data

Therefore, the validation team has agreed that PP will implement statistical survey on both Wonder Bag users (project samples) and Non Wonder Bag users (baseline samples) simultaneously to extract the effect of WB in comparison. All factors like the size of families, income level, cooking behaviors, other energy consuming kitchen appliances, even economic growth etc. are supposed to take place in both sample groups. And thus the performance of WB can theoretically be extracted with a statistical survey. If WB works considerably to reduce energy consumption mainly at Kitchen, there will be considerable difference of total energy consumption between 2 groups. If statistical survey does not indicate statistically considerable difference, then the PP will not be able to claim CERs even if they sell many WB.

And as the target households are in low income communities (but not limited to), we can not expect very accurate measurement if the project implementer relies just on questionnaires. That's why

“trained people” is supposed to visit sample households to implement a survey. And it is relatively easy to monitor electricity consumption in transparent way, e.g. with photos of meter reading, receipts of purchased electricity (either pre-paid or invoiced). Compared, it is difficult to monitor the consumption of kerosene as the most of low-income households occasionally purchase a small portion of kerosene from a very small seller like a street stall who never issue a receipt. That is why the duration of survey would be short e.g. a week or few weeks “as far as the statistical credibility can be justified theoretically by an expert of statistics” considering various factors including seasonal factors. And trained people are supposed to measure the consumption based on the “established” procedures including ways of measurement e.g. with a measurement container in transparent way like photos, statistical filtering of abnormal data, etc.

The validation team has accepted this approach as the best possible way because the programme is implemented at low-income households in Africa. (And because it can be considered verifiable.)

The procedures have been reviewed by the assessment team through document review and interviews with the relevant personnel. The information provided has allowed the assessment team to confirm that the proposed monitoring plan is feasible within the project design. The relevant points of monitoring plan have been discussed with the PoA managing entity and the CPA implementers. Specifically, these points include the monitoring methodology, data management, and the quality assurance and quality control procedures to be implemented in the context of the project. Therefore, the PoA managing entity and/or CPA implementer(s) will be able to implement the monitoring plan and the achieved emission reductions can be reported ex-post and verified.

### 3.7.1 Parameters determined ex-ante

The parameters that are determined ex-ante are sufficiently identified in section E.6.3. This includes:

$EF_{CO_2, Fossil, i}$  – Emission factor for the fossil fuel displaced ( $kgCO_2/TJ$ ) is fixed using IPCC default values ex-ante due to no availability of country or project specific data in accordance with the methodology applied

$EF_{CO_2, ELEC}$  – The grid emission factor ( $tCO_2/MWh$ ) is fixed ex-ante. The inclusion of this parameter has been done in accordance with the methodology and tool applied. The latest version of CDM baseline  $CO_2$  emission database by Eskom the time of the submission of PoA-DD and CPA-DD to DOE was used. The lowest values of NCV and  $CO_2$  emission factor of 95% confidence interval were correctly used to recalculate  $EF_{OM}$  conservatively to comply with the “Tool for calculation of the emission factor of an electricity system” version 2.

In summary, the parameters determined ex-ante have been presented correctly according to requirements are considered in accordance with the applied methodology.

### 3.7.2 Parameters determined ex-post

The parameters that are to be monitored ex-post are sufficiently identified in section E.7. This includes:

$EER_{BL, y} / EER_{PJ, y}$  – The total household electricity consumption representing either a WB using household (in project group) or a no WB using household (in baseline group). The source of data is electricity meter reading installed at each household.

$Q_y$  - Total quantity of supply in project year ‘y’ (unit) to users of electricity /usage. The units are Wonderbag sales and the number of WB sales will be measured based on sales records.

$I_y$  – Currently 8% in accordance with the page 105 of the Eskom Annual Report 2008. The average annual technical grid losses (transmission and distribution) would be updated and determined from recent audited data published either by Eskom or an official governmental body.



$F_{BL,i,y} / F_{PJ,i,y}$  – Specific Fossil Fuel Energy consumption determined with ex-post survey for both baseline households and project households in order to comply with the paragraph 5 in AMS II.C. version 13.

$Q_{SalesElec,i,y} / Q_{SalesFossil,i,y}$  – The quantity of Wonderbag sales to either electricity users or users of fossil fuels type  $i$ , determined with ex-post survey

$DOF_{Elec,i} / DOF_{Fossil,i}$  – The portion of households which purchased a Wonderbag and are using either electricity or fossil fuel, and are estimated to be no longer using it, determined with ex-post survey. As mentioned at 3.7. above, ex-post statistical monitoring survey is planned in section A.4.4.2 of PoA-DD to determine emission reductions comparing baseline emissions and project emissions including the determination of electricity and fossil fuel consumption in the both cases. This is called “annual monitoring survey” in sections A.4.4.2. and E.7.2. of the PoA-DD. And the way to comply with “90/10 precision” referred in the draft general guideline<sup>19</sup> is stated in section E.7.2. of PoA-DD based on the opinion of statistics expert.

In summary, the parameters determined ex-post have been presented correctly according to requirements in the applied methodology.

### 3.7.3 Monitoring and Reporting System and Quality Assurance

The operational and management structure has been clearly described and in compliance with the envisioned situation. The responsibilities and institutional arrangements for data collection and archiving has been clearly provided. The information provided in the PoA-DD can be confirmed based on the on-site interviews.

## 3.8 Sustainable development

The LoA of the host country presented a statement that the programme of activities contributes to the sustainable development of the host party.

## 3.9 Local stakeholder consultation

It has been indicated that the local stakeholder consultation is done at the PoA level due to the similarity of the interest of stakeholders between the programme and CPAs.

A public invitation to a Wonderbag national stakeholder consultation (SHC) was published in the Mail & Guardian newspaper. The advert elicited reaction from as far afield as Cape Town and Bloemfontein. The SHC event took place on 13 August 2009 at the Central Energy Fund (CEF) premises in Sandton, Johannesburg. A total of 35 people attended the event. The invitation list for the national SHC included representatives from government, DNA, the energy industry, NGOs, the media and civil society. Also invited were developers of similar technologies, members of PAIs (also known as Wonderbag Outreach Teams - WOTs) and potential investors.

Comments presented by the local stakeholders have been taken into account by the PoA managing entity and has been verified with information obtained during interviews with stakeholders conducted on-site.

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<sup>19</sup> [http://cdm.unfccc.int/EB/047/eb47\\_repan27.pdf](http://cdm.unfccc.int/EB/047/eb47_repan27.pdf)

Hence, the local stakeholder consultation has been performed adequately according to the CDM requirements.

### **3.10 Environmental impacts**

It has been indicated that the environmental analysis is done at the PoA level. There is no host country requirements for EIA for this kind of programme in South Africa according to the section 53(1) of the National Environmental Management: Biodiversity Act (No. 10) 2004, and in sections 24 and 24D of the National Environmental Management Act (1998); specifically, notices No. R. 386 and R. 387 (2006) where the 25 activities (under Notice 386) and 10 activities (under Notice 387) are specified to require EIAs but do not include this type of activities planned in the programme. This is considered reasonable because EIA is required usually for considerable construction work and specific plants which are supposed to emit pollutant.

## 4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the programme of activities documents on the UNFCCC website and invited comments by affected Parties, stakeholders, and non-governmental organisations during a 30 day period.

All key information gathered is presented in the table bellow.

### GSP Comments

<b>website:</b> <a href="http://www.netinform.de/KE/Wegweiser/Guide2_1.aspx?ID=6287&amp;Ebene1_ID=26&amp;Ebene2_ID=2051&amp;mode=1">http://www.netinform.de/KE/Wegweiser/Guide2_1.aspx?ID=6287&amp;Ebene1_ID=26&amp;Ebene2_ID=2051&amp;mode=1</a> <a href="http://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/QWUIDIMQZ3L3Z8O0N1HQQFH8J7258AL/view.html">http://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/QWUIDIMQZ3L3Z8O0N1HQQFH8J7258AL/view.html</a>	
<b>Starting date of the global stakeholder consultation process:</b> 22/09/2009	
<b>Comment submitted by:</b> None	<b>Issues raised:</b> -
<b>Response by TÜV SÜD:</b> -	

## 5 VALIDATION OPINION

TÜV SÜD has performed a validation of the following proposed CDM Programme of Activities (PoA):

### Heat Retention Cooking in South Africa

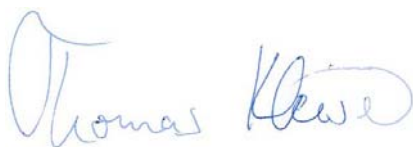
Standard auditing techniques have been used for the validation of the programme of activities. A methodology-specific protocol for the programme of activities has been prepared to conduct the validation process in a transparent and comprehensive manner.

The review of the programme of activities design documentation, subsequent follow-up interviews, and further verification of references have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the protocol. In the opinion of TÜV SÜD, the programme of activities meets all relevant UNFCCC requirements for the CDM if the underlying assumptions do not change. TÜV SÜD recommends the programme of activities for registration by the CDM Executive Board.

An analysis, as provided by the applied methodology, demonstrates that the proposed Programme of Activities (PoA) is not a likely baseline scenario. Emission reductions attributable to the programme of activities are additional to any that would occur in the absence of the Programme of Activities (PoA). Considering that the programme of activities will be implemented as designed, the programme of activities is likely to achieve the estimated amount of emission reductions of 1,013,625 tCO<sub>2</sub>e over the seven year crediting period, amounting to a calculated annual average of 144,804 tCO<sub>2</sub>e with the phased introduction of 7 CPAs in the 1<sup>st</sup> crediting period.

The validation has been performed following the requirements of the latest version of the CDM VVM and on the basis of the contractual agreement. The single purpose of this report is its use during the registration process as part of the CDM programme of activities cycle. Based on the work described in this report, nothing has come to our attention that causes us to believe that any programme component or issue has not been covered by the validation process.

Munich, 03/01/2012



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Thomas Kleiser

Certification Body "climate and energy"  
TÜV SÜD Industrie Service GmbH

Munich, 03/01/2012



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Robert Mitterwallner  
Assessment Team Leader



Industrie Service

## **Annex 1**

### **Validation Protocol**

## Validation Protocol CDM-PoA-DD

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	GSP	Final
<b>A. General description of small-scale programme of activities (PoA)</b>				
<b>A.1. Title of the small-scale programme of activities (PoA)</b>				
A.1.1. Does the used PoA title clearly enable to identify the unique CDM programme of activities?	1	Yes, the PoA title clearly enables to identify the unique CDM PoA.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.2. Are there any indications concerning the revision number and the date of the revision?	1	Yes, the GSP-PoA-DD is indicated version number 01, dated 17/08/2009.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.1.3. Is this consistent with the time line of the programme's history?	1	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.2. Description of the small-scale programme of activities</b>				
A.2.1. Is the description delivering a transparent overview of the general operating and implementing framework of the PoA?	1	Yes, PoA-DD is describing the overview of this small scale programme of activities being implemented in South Africa by the coordinating/managing entity, J.P. Morgan Energy Ventures Corporation (JPMVEC) and Natural Balance Ltd (NB) who establish and regulate a group of Programme Activity Implementers (PAIs) who has the responsibility of the implementation as well as managing each CPA.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.2. Is the policy/measure or stated goal of the PoA clearly and unambiguously presented?	1	Yes, it has been clearly presented that the PoA objective is to improve the livelihoods of between 1 and 3 million low-income families through reduction in cash expenditure on cooking fuels and electricity, while also reducing global greenhouse gas emissions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.3. What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	4, 6	"Kitchen Test 2009" report was submitted as the initial survey to estimate baselines, project performance and the uncertainty. This survey was done in all 9 provinces in South Africa planned in this PoA-DD. Provincial coordinators recruited 30 households and collected the data through their actual visit and questionnaires.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.4. Is the information provided by these proofs consistent with the information provided by the PoA-DD?	4, 6	<b><u>Clarification Request No. 1.</u></b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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		Although KT report comprehensively addresses important issues including concerns/risks and statistical characters, such issues have not sufficiently been clarified in order to determine the baseline, project performance and the uncertainty of the information. For an instance, the duration of the investigation is very short. A week for baseline and 1+1 weeks for the project. In addition, there are many other negative factors, e.g. significant ineffective results including one defined as nonconformance compared to the total investigated. And, as mentioned in the report, there can be seasonal variation. Therefore 1 week investigation is likely to be insufficient to determine the baseline emissions and other assumptions/conditions shall clearly be mentioned to explain and justify the way how 1 week investigation results can be extended to estimate or to determine annual figures..And, although fuel consumption as well as the fuel saving with WB is thought to rely on the variation of cooking pattern, its' not really investigated but done mainly about fuel mix which is used not only for cooking.		
A.2.5. Is there a valid confirmation that the proposed PoA is a voluntary action by the coordinating/managing entity?	1	Yes, no applicable law and requirement is considered reasonable as this project is going to introduce a new type of cooker in kitchens.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.6. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance?	1	<b><u>Clarification Request No. 2.</u></b> Technology applied is simple. However the performance is thought to rely very much on ways of usage, baseline energies and/or cooking styles at each households. In other words, there can be big variation on the performance. At the validation, sufficient data should be provided reasonably to justify the appropriateness of the estimation stated.	CR #2	<input checked="" type="checkbox"/>
A.2.7. Is the brief explanation how the programme will reduce greenhouse gas emission transparent and suitable?	1	Please refer above CR #1 & CR #2 above	CR #2	<input checked="" type="checkbox"/>

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<b>A.3. Coordinating/managing entity and participants of SSC-PoA</b>				
A.3.1. Is the form required for the indication of project participants correctly applied?	1	Yes, the form has been correctly applied.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3.2. Is the participation of the listed entities or Parties in the PoA confirmed by each one of them?	26	<p><b><u>Clarification Request No. 3.</u></b></p> <p>Please comply with Annex 29, EB47 as follows;</p> <p><u>7.</u> The coordinating/managing entity shall obtain letters of approval for the implementation of the PoA from each Host Party and Annex I Party involved in the PoA. Letters of approval shall be issued in accordance with the guidance provided by the CDM Executive Board (EB16, Annex 6).</p> <p><u>8.</u> The coordinating/managing entity shall obtain letters of authorization of its coordination of the PoA from each Host Party.</p>	CR #3	
A.3.3. Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	26	JPMVEC has been indicated as the coordinating/managing entity and has been consistently included in Annex-1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3.4. Is it evident that the coordinating or managing entity of the PoA is the entity which communicates with the Executive Board (EB)?	20	<p>Yes, JPMVEC is clearly stated to be a focal point to all scopes.</p> <p><b><u>Clarification Request No. 4.</u></b></p> <p>Please submit MoC before the end of this validation process, which complies with the following requirements stated in Annex 29, EB47;</p> <p><u>9.</u> The latest version of the "Procedures for modalities of communication between project participants and the CDM Executive Board" shall apply, with the exception that the coordinating/managing entity shall be either sole or joint focal point for each area of communication.</p>	CR #4	<input checked="" type="checkbox"/>
A.3.5. Is it evident whether individual project participants are involved in one of the CPAs	1	Yes, both NB and JPMVEC are consistently stated in CPA-DD sub-	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



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related to the PoA?		mitted too.		
<b>A.4. Technical description of the small-scale programme of activities</b>				
<i>A.4.1. Location of the programme of activities</i>				
A.4.1.1. Does the information provided on the location of the programme allow for a clear definition identification of the boundary for the PoA in terms of a geographical area, within which all CPAs included in this PoA will be implemented?	1	The CPAs under the PoA will be implemented throughout the host country – South Africa.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.1.2. Is the consideration of all applicable national and/or sectoral policies and regulations of each host country within the boundary evident and substantiated?	1	Yes, no applicable law and requirement is considered reasonable as this project is going to introduce a new type of cooker in kitchens.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.1.3. Is/are the Host Party(ies) stated?	1	South Africa has been stated as the host party.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>A.4.2. Description of a typical small-scale CDM programme activity (CPA)</i>				
A.4.2.1. Is it unambiguously stated which technology or measures are to be employed by the SSC-CPA?	1	Yes. However please see CR #2 at A.2.6.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.2. Does the implementation of the project activity require any technology transfer from Annex-I-countries to the host country (ies)?	1	<b><u>Corrective Action Request No.1.</u></b> Please indicate whether the implementation of the project activity require any technology transfer from Annex-I-countries to the host country.	CAR #1	<input checked="" type="checkbox"/>
A.4.2.3. Is the technology implemented by the project activity environmentally safe?	1	<b><u>Clarification Request No. 5.</u></b> As WB consists of a filling of polystyrene granules sown in to a cotton bag, no significant environmental impact currently is expected. However please submit a safety data sheet or any alternative to ensure, as previous polystyrene form included chlorofluorocarbon and some VOC.	CR #5	<input checked="" type="checkbox"/>

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A.4.2.4. Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	1	As far as end-users at each household utilize WB properly, that will result in better performance than one common in host country in terms of energy conservation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.5. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1	No specific technology is currently supposed as apparently more efficient one.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.6. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	1	No, as WB is just a cooking appliances at each household.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.2.7. Is a schedule available for the implementation of the project and are there any risks for delays?	19	<b><u>Clarification Request No. 6.</u></b> Please submit project implementation schedule	CR #6	<input checked="" type="checkbox"/>
A.4.2.8. Are there clear and unambiguous eligibility criteria for the inclusion of a SSC-CPA into the PoA?	1	<b><u>Clarification Request No. 7.</u></b> Not clear. For an instance, "within South Africa" is not enough as each CPA must define the clear geographical boundary to make it unique and not to have double counting. The conformance with both PoA-DD registered and the applied methodology is not stated. Please make the description conform to Annex 49, EB47, "Definition of eligibility criteria for inclusion of a project activity as a CPA under the PoA, which shall include, as appropriate, criteria for demonstration of additionality of the CPA, and the type and/or extent of information (e.g. criteria, indicators, variables, parameters or measurements) that shall be provided by each CPA in order to ensure its eligibility; "	CR #7	<input checked="" type="checkbox"/>

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<b>A.4.3. Description of how the anthropogenic emissions of GHG by sources are reduced by a SSC-CPA below those that would have occurred in the absence of the registered PoA (assessment and demonstration of additionality of the PoA as a whole)</b>				
A.4.3.1. Is it evident and clearly documented that the proposed PoA is a voluntary coordinated action?	1	Yes, it is evident.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.2. Is it evident and substantiated that this voluntary coordinated action would not be implemented in the absence of the PoA?	1	No, since Wonderbag is not commonly available at the market	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.3. Is it evident and substantiated that in case the PoA implements a mandatory policy or regulation this would not be enforced otherwise?	1	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.3.4. Is it evident and substantiated that in case the PoA implements a mandatory policy or regulation that is enforced the PoA will lead to a greater level of enforcement?	1	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.4.4. Operational, management and monitoring plan for the programme of activities (PoA)</b>				
A.4.4.1. Is there a clear and transparent description of the operational and management arrangements established by the coordinating/managing entity?	1	<b><u>Corrective Action Request No.2.</u></b> Please add further information on post-validation i.e. verification activities need to be indicated, e.g. who is in charge of monitoring	CAR #2	<input checked="" type="checkbox"/>
A.4.4.2. Is there a record keeping system for each CPA under the PoA?	1	<b><u>Corrective Action Request No.3.</u></b> The current description is mainly about sales record. Please add one for e.g. records of monitoring parameters specified in AMS II.C.	CAR #3	<input checked="" type="checkbox"/>
A.4.4.3. Is there a system or procedure to avoid double accounting, i.e. to avoid that an included CPA under this PoA already is a registered CDM project or CPA in another PoA?	1	<b><u>Corrective Action Request No.4.</u></b> Please describe ways how to avoid double counting more specifically. Because double counting can happen not only with other CPA implemented under this PoA but also with other types of PoAs or CDMs. For an instance, fuel might be changed to bio-fuel with other	CAR #4	<input checked="" type="checkbox"/>

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		CDMs. Or, other energy efficient equipment might be introduced to households, e.g. with CFL PoA which also reduces electricity consumption.		
A.4.4.4. Is there a system or procedure to detect whether a SSC-CPA to be included in the PoA is not a de-bundled component of another CPA or CDM project?	1	As per EB 47, Annex 32, paragraph 9, it is clearly explained that the CPA of PoA is exempted from performing de-bundling check.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.4.4.5. Are provisions in place to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA?	1	<b><u>Clarification Request No. 8.</u></b> Please submit an evidence, e.g. an agreement between PPs.	CR #8	<input checked="" type="checkbox"/>
A.4.4.6. Is there a <b>monitoring plan</b> for the PoA, including a description of the proposed statistically sound sampling methods or procedures to be used by the DOE for the verification (please consider sampling among CPAs and within CPAs)?	1	<b><u>Corrective Action Request No.5.</u></b> This project has the fundamental difficulty to identify the quantity of both baseline emissions and project emissions because electricity or fuel are used not only for cooking but also heating, lighting, bath, TV etc. It is practically difficult to separate fuel or electricity consumption due to cooking. In addition, there are many factors of variation, e.g. cooking style, baseline fuels, fuel or electricity, atmospheric temperature, i.e. seasons, etc. which affects emissions from cooking. Therefore, we can not basically assume the minimum variation of both baseline emissions and project performance. And we must consider the significant uncertainty in the result of monitoring if the project proponent is not going to monitor the exact quantity of CO2 emissions from cooking at every households. As a result, the sampling size currently is expected to be big at present.  So far, there is no specific sampling plan indicated including at Annex 4 in this PoA-DD. And there is no justification on the sampling plan consequently. In general, the appropriateness of the size of sampling depends on the characteristics of the objective. In case the	CAR #5	<input checked="" type="checkbox"/>

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		<p>variation can be assumed to be small, e.g. only 5% is assumed to be the standard deviation based on the preliminary survey or an official information like an analysis report, the sampling size can easily be the minimum to discuss "90/10 precision" referred in the draft general guideline <a href="http://cdm.unfccc.int/EB/047/eb47_repan27.pdf">http://cdm.unfccc.int/EB/047/eb47_repan27.pdf</a></p> <p>As the variation is supposed to be significant in this project in general, the size of sampling should be increased statistically reasonably. However there is no sufficient information provided to discuss the uncertainty of both baseline emissions and project performance.</p> <p>Kitchen Test 2009 refers very comprehensive factors, however this does not look successful to have statistically reliable analysis in order to discuss the uncertainty of both baseline emissions and project performance. The duration of the investigation is very short for an instance. A week for the determination of baseline emissions and 1+1 weeks for the determination of project emissions . In addition, there were significant invalid elements in the result of the survey, e.g. many inappropriate answers in questionnaires, strange results defined as non-conformance. And, although fuel consumption as well as the fuel saving with WB is thought to rely on the variation of cooking style, such factor was not really discussed. As cooking consumes just a part of fuel/energy at each household, separated and quantitative investigation would be incorporated as a part of the study, e.g. more scientific and experimental study to determine the potential and/or the variation of energy saving, in addition to the survey visiting relatively many households.</p>		
A.4.4.7. In case the coordinating/managing entity opts for a verification method that does not use sampling but verifies each CPA, does the monitoring plan provide a transparent system to ensure that no double accounting oc-	-	Not applicable at the moment as the project proponent is going to provide and justify the sampling method.	NA	NA

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curs and that the status of verification can be determined any time for each CPA?				
<b>A.4.5. Public funding of the small-scale project activity</b>				
A.4.5.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1, 8	No public funding is stated.  <b>Clarification Request No. 9.</b> Please submit an evidence, e.g. any document indicates the way of financing the project.	CR #9	<input checked="" type="checkbox"/>
A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PoA-DD (in particular annex 2)?	1, 8	Yes, the information has been consistently provided.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B. Duration of the programme of activities</b>				
<b>B.1. Starting date of the programme of activities</b>				
B.1.1. Is the programme's starting date clearly defined and reasonable?	1	Yes, stated as "Date of registration (or 1 <sup>st</sup> January 2010 if after Date of Registration)"	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.2. Length of the programme of activities (PoA)</b>				
B.2.1. Is the assumed length of the PoA clearly defined by the coordinating managing entity and reasonable (max 28 years)?	1	Yes, stated as "28 years"	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>C. Environmental Analysis</b>				
<b>C.1. Definition of the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken:</b>				
C.1.1. Is it defined whether the environmental analysis takes place at PoA or CPA level?	1	Yes, it has been indicated that the environmental analysis takes place at PoA level.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.1.2. Is the choice whether the environ-	1	Yes, it has been appropriately justified.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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mental analysis takes place at PoA or CPA level justified?				
<b>C.2. Documentation on the analysis of the environmental impacts of the PoA, including transboundary impacts:</b>				
C.2.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved?	11	No requirement of EIA sounds reasonable for this kind of project.  <b><u>Clarification Request No. 10.</u></b> Please submit the response from DEA as this PoA-DD states, "The DNA was represented at the local stakeholder meeting of 13 August 2009, on which occasion it voiced support for the programme. The DNA further requested that the Department of Environment (DEA) was contacted with regard to EIAs for CPAs. Accordingly a request for exemption from EIA has been sent to the DEA and a response is awaited."	CR #10	<input checked="" type="checkbox"/>
C.2.2. Has the analysis of the environmental impacts of the project activity been sufficiently described?	1	Please see CR #5 at A.4.2.3.	CR #5	<input checked="" type="checkbox"/>
C.2.3. Will the project create any adverse environmental effects?	1	Please see CR #5 at A.4.2.3.	CR #5	<input checked="" type="checkbox"/>
C.2.4. Were trans-boundary environmental impacts identified in the analysis?	-	Not applicable.	NA	NA
<b>C.3. Please state whether in accordance with the host Party laws/regulations, an environmental impact assessment is required for a typical CPA of the PoA:</b>				
C.3.1. Have the identified environmental impacts been addressed in the project design sufficiently?	1	Please see above C.2.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.3.2. Does the project comply with environmental legislation in the host country?	1, 11	Please see above C.2.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



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C.3.3. Is, per host country laws/regulations, an environmental impact assessment necessary for a typical CPA?	11	Please see above C.2.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D. Stakeholders' comments</b>				
<b>D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:</b>				
D.1.1. Is there a clear statement whether the stakeholder comments will be invited at PoA or CPA level?	1	Yes, it has been indicated that the stakeholder comments will be invited at PoA level.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.2. Is the choice justified in a clear and reasonable manner?	1	<b><u>Corrective Action Request No.6.</u></b> Please justify the choice of doing local stakeholder consultation at the PoA level.	CAR #6	<input checked="" type="checkbox"/>
D.1.3. If the stakeholder comments will be invited at PoA level, is there sufficient information provided, on how comments by local stakeholders were invited?	1	Yes, the various media used for the stakeholder consultation has been clearly indicated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.4. If the stakeholder comments will be invited at PoA level, is there a summary of the contents?	1	Yes, in D.2. section of PoA-DD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.5. If the stakeholder comments will be invited at PoA level, is there sufficient information provided, on how due account was taken of any comments received?	1	Yes, in D.4. section of PoA-DD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.2. Brief description how comments by local stakeholders have been invited and compiled</b>				
D.2.1. Have relevant stakeholders been consulted?	1	<b><u>Clarification Request No. 11.</u></b> Please submit a list of local stakeholders been consulted.	CR #11	<input checked="" type="checkbox"/>



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D.2.2. Have appropriate media been used to invite comments by local stakeholders?	1, 8	Yes, a public invitation published in the <i>Mail &amp; Guardian</i> newspaper, and e-mails & telephone call to the members of PAIs and the Love-Life network.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1, 8, 11	<b>Clarification Request No. 12.</b> Please clarify if no stakeholder consultation is required in host country for this kind of programme.	CR #12	<input checked="" type="checkbox"/>
D.2.4. Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1, 8	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.3. Summary of the comments received</b>				
D.3.1. Is a summary of the received stakeholder comments provided?	1, 8	Yes, presented in PoA-DD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D.4. Report on how due account was taken of any comments received</b>				
D.4.1. Has due account been taken of any stakeholder comments received?	1, 8	Yes, presented in PoA-DD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E. Application of a baseline and monitoring methodology to a typical SSC-CPA</b>				
<b>E.1. Title and reference of the approved SSC baseline and monitoring methodology applied to SSC-CPA included in the PoA</b>				
E.1.1.1. Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	1	Yes, the methodology AMS II.C.- <i>Demand-side energy efficiency activities for specific technologies</i> , is --- Version 13 - has been indicated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.1.2. Is the applied version the most recent one and / or is this version still applicable?	1	Yes, the version used is the most recent one at the time of uploading the project for GSP.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.1.3. Is the applied SSC methodology approved by the board, for use in PoA?	1, 2	Yes, the applied SSC methodology has been approved by the board, for use in PoA.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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E.2. Justification of the choice of the methodology and why it is applicable to a SSC-CPA												
E.2.1. Is the applied methodology considered the most appropriate one?	1, 2	Yes, the applied methodology AMS II.C.- <i>Demand-side energy efficiency activities for specific technologies</i> , is the most appropriate small scale methodology for this kind of programme which involves distribution of heat retention cooking appliance to conserve fuel consumption and/or electricity consumption at households.	☑	☑								
E.2.2. Does the SSC methodology account for leakage in the context of a SSC-CPA?	1, 2	Not applicable to this PoA as leakage is to be considered if the energy efficiency technology is equipment transferred from another activity.	NA	NA								
Integrate the required amount of sub-checklists on the applicability criteria as given by the applied methodology and comment on at least every line answered with “No”;												
E.2.2.1. Criterion 1: Energy Efficient Equipment - This methodology comprises activities that encourage the adoption of energy-efficient equipment/appliance (e.g., lamps, ballasts, refrigerators, motors, fans, air conditioners, pumping systems) at many sites. These technologies may replace existing equipment or be installed at new sites.	1, 2	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	Yes	Compliance provable?	Yes	Compliance verified?	Yes	☑	☑
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	Yes											
Compliance provable?	Yes											
Compliance verified?	Yes											
E.2.2.2. Criterion 2: Greenfield Project - In the case of new facilities, the determination of baseline scenario shall be as per the procedures described in the general guidance to SSC methodologies under the section ‘Type II and III Greenfield projects (new facilities)’.	1, 2	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr><tr><td>Criterion discussed in the PDD?</td><td>NA</td></tr><tr><td>Compliance provable?</td><td>NA</td></tr><tr><td>Compliance verified?</td><td>NA</td></tr></table>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	NA	Compliance provable?	NA	Compliance verified?	NA	NA	NA
Applicability checklist	Yes / No / NA											
Criterion discussed in the PDD?	NA											
Compliance provable?	NA											
Compliance verified?	NA											
E.2.2.3. Criterion 3: Energy Savings Limit - The aggregate energy savings by a single	1, 2	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr></table>	Applicability checklist	Yes / No / NA	CR #13	☑						
Applicability checklist	Yes / No / NA											

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project may not exceed the equivalent of 60 GWh per year for electrical end use energy efficiency technologies. For fossil fuel end use energy efficient technologies, the limit is 180 GWh thermal per year in fuel input.		<table><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>No</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table> <b>Clarification Request No. 13.</b> PDD states that the average performance of WB is expected to be approximately 700kWh per year. This is considerably less than 1% of the energy limit for Type II projects and thus CPA of this PoA is exempted from performing de-bundling check in accordance with <i>GUIDANCE FOR DETERMINING THE OCCURRENCE OF DE-BUNDLING UNDER A PROGRAMME OF ACTIVITIES (PoA)</i> as Annex 32 in EB47 report.. Please justify 700kWh per year as the average performance of WB based on objective evidences.		Criterion discussed in the PDD?	Yes	Compliance provable?	No	Compliance verified?	No				
Criterion discussed in the PDD?	Yes												
Compliance provable?	No												
Compliance verified?	No												
E.2.2.4.Criterion 4: Performance -. For each replaced appliance / equipment /system the rated capacity or output or level of service (e.g., light output, water output, room temperature and comfort, the rated output capacity of air-conditioners etc.) is not significantly smaller (maximum - 10%) than the baseline or significantly larger (maximum + 50%)1 than the baseline.	1, 2	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr><tr><td>Criterion discussed in the PDD?</td><td>No</td></tr><tr><td>Compliance provable?</td><td>No</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table> <b>Corrective Action Request No.7.</b> E.2. section in PoA-DD does not discuss and justify about this applicability condition.		Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	No	Compliance provable?	No	Compliance verified?	No	CAR #7	<input checked="" type="checkbox"/>
Applicability checklist	Yes / No / NA												
Criterion discussed in the PDD?	No												
Compliance provable?	No												
Compliance verified?	No												
E.2.2.5.Criterion 5: Refrigerant - If the energy efficient equipment contains refrigerants, then the refrigerant used in the project case shall be CFC free. Project emis-sions from the baseline refrigerant	1, 2	<table><tr><td>Applicability checklist</td><td>Yes / No / NA</td></tr><tr><td>Criterion discussed in the PDD?</td><td>NA</td></tr><tr><td>Compliance provable?</td><td>NA</td></tr><tr><td>Compliance verified?</td><td>No</td></tr></table>		Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	NA	Compliance provable?	NA	Compliance verified?	No	NA	NA
Applicability checklist	Yes / No / NA												
Criterion discussed in the PDD?	NA												
Compliance provable?	NA												
Compliance verified?	No												

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and/or project refrigerants shall be considered in accordance with the guidance of the Board (EB 34, paragraph 17). This methodology credits emission reductions only due to the reduction in electricity consumption from use of more efficient equipment/appliances.				
<b>E.3. Description of the sources and gases included in the SSC-CPA boundary</b>				
E.3.1. Does the SSC-CPA boundary include the physical and geographical location where the programme activities take place?	1	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.2. Are all sources and gases within the boundary considered in a clear manner?	1	<b><u>Corrective Action Request No.8.</u></b> Please make words a little more specific to identify the CO2 emissions from each household in case of fuel and from the power plants connected to the grid in case of electricity.	CAR #8	<input checked="" type="checkbox"/>
E.3.3. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PoA-DD?	1	Yes. South Africa.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.4. Description of how the baseline scenario is identified and description of the identified baseline scenario:</b>				
E.4.1. Have all technically feasible baseline scenario alternatives to the PoA been identified and discussed by the PoA-DD? Why can this list be considered as being complete?	1, 2	While the additionality can be demonstrated using the guidance given in 'Attachment A to Appendix B' of the "Simplified modalities and procedures for small-scale CDM project activities", this PoA-DD refers "Tool for the demonstration and assessment of additionality" version 05.2.  <b><u>Corrective Action Request No.9.</u></b>	CAR #9	<input checked="" type="checkbox"/>

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			There is no discussion and justification at this E.4. section while the baseline and additionality discussion are presented at A.4.3. section.  To talk about the discussion at A.4.3., 3 alternatives are listed. The project without CDM, adoption of low or zero emission cook-stove or fuel at low income families, and continuation of the current situation. These 3 options are considered reasonable to discuss the baseline.										
E.4.2.	Is a complete list of barriers developed that prevents the project activity to occur?	1, 2	<p><b><u>Corrective Action Request No.10.</u></b></p> <p>The discussion about the option b) is made only for solar cookers. However there should be other plausible ways to have lower emissions, e.g. electricity instead of fuel, paraffin instead of coal. If such change can not excluded in the baseline discussion, the way of monitoring shall consider such factor too.</p> <p><b><u>Corrective Action Request No.11.</u></b></p> <p>The financial barrier is explained with the threshold at ZAR150 (Euro14.00) as the price of WB. Please justify this barrier based on the objective information.</p> <p>And with regard to “Non-availability of equity investment or commercial loans” and “Non-availability of adequate non-commercial finance”, the discussion here sounds one for CDM project. If we do not assume CDM project, we do not need to assume cost of human resource for an instance. But an end-user of WB is supposed to purchase WB on a voluntary basis in the option a).</p>			CAR #10 & #11	<input checked="" type="checkbox"/>						
E.4.3.	Does this list include at least one of the following barriers?	1	<table><tr><th>Barrier</th><th>Discussed?</th><th>Verifiable?</th></tr><tr><td>Investment</td><td>Yes</td><td>Yes</td></tr></table>			Barrier	Discussed?	Verifiable?	Investment	Yes	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Barrier	Discussed?	Verifiable?											
Investment	Yes	Yes											

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			Technological	No	No		
			Due to prevailing practice	Yes	Yes		
			Other	Yes	Yes		
E.4.4.	Does project identify correctly and exclude those options not in line with regulatory or legal requirements?	1	Yes, all options have the conformity.			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.4.5.	Have applicable regulatory or legal requirements been identified?	1	NA as mentioned above.			NA	NA
E.4.6.	Does the PoA-DD identify the most likely baseline scenario in absence of the project activity?	1	The continuation of the current situation has been identified as the most likely baseline scenario.			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.4.7.	Is this identification supported by official and/or verifiable documents (e.g. studies, web pages, certificates, etc)?	1	Please see CAR #11 at E.4.2.			CAR #11	<input checked="" type="checkbox"/>
E.4.8.	Is the identified baseline scenario in line with regulatory or legal requirements?	1	Yes.			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.4.9.	Is it appropriately explained how the approval of the project activity will help to overcome the identified barriers?	1	Yes, particularly in relation to Investment barrier			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.5.Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of a typical SSC-CPA, included in a registered PoA (assessment and demonstration of additionality):							
E.5.1.	Are the key criteria and data for assessing additionality of a SSC-CPA that is to be included into the PoA clearly and unambiguously stated?	1	<b><u>Corrective Action Request No.12.</u></b> There is no key criteria identified but refers only a contract. Please also note that the barriers being presented at the PoA-DD level would be updated with the latest available information and project specific data. Also, the barrier check-list and summary assessment needs to be presented in the CPA-DD.			CAR #12	<input checked="" type="checkbox"/>



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E.5.2. Does it become evident how these criteria would be applied to assess the additional-ity of a typical CPA at the time of inclu-sion?	1, 2	Please see above.	CAR #12	<input checked="" type="checkbox"/>
E.5.3. If the starting date of the programme ac-tivity is before the date of validation, is evidence available to prove that incentive from the CDM was seriously considered in the decision to proceed with the pro-gramme activity?	1	Not applicable.	NA	NA
<b>E.6. Estimation of Emission reductions of a CPA</b>				
<i>E.6.1. Explanation of methodological choices, provided in the approved baseline and monitoring methodology applied, selected for a typical CPA</i>				
E.6.1.1. Is it explained how the procedures pro-vided in the methodology are applied by the proposed SSC-CPA?	1, 2	<b><u>Corrective Action Request No.13.</u></b> Please provide general description to comply with the title of this sec-tion including the methodology applied.	CAR #13	<input checked="" type="checkbox"/>
E.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situa-tion verified on-site?	1, 2	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>E.6.2. Equations, including fixed parametric values, to be used for calculation of emission reductions of a SSC-CPA:</i>				
E.6.2.1. Are the formulae required for the de-termination of emission reductions cor-rectly presented, enabling a complete identification of parameters to be used and / or monitored?	1	<b><u>Clarification Request No. 14.</u></b> The equations will be discussed during the on-site visit. e.g.; 1) "national average" of fuel consumption both in the baseline sce-nario and in the project is too ambiguous as it is not easy at all to determine this parameter	CR #14	<input checked="" type="checkbox"/>

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		2) While significant variation is expected, will “average” really works? Because there can be big variation on fuel consumption and energy mix, depending on the living of each household. 3) As each parameters shall be determined based on statistically sound sampling survey, such way of determination shall be presented. 4) Why NCV is missing in the equation of PE?																				
E.6.2.2.Are the equations, including fixed parametric values, to be used for calculation of emission reductions of a SSC-CPA, completely presented?	1	Please refer above	CR #14	<input checked="" type="checkbox"/>																		
E.6.3. Data and parameters that are to be reported in CDM-SSC-CPA-DD form																						
E.6.3.1.Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?	1	Yes, the table specified in the template of PoA-DD is used.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																		
E.6.3.2.Comment on any line answered with “No”																						
E.6.3.2.1. Parameter Title: EF <sub>CO2,f</sub> – Emission factor of fossil fuel (kgCO2/TJ)	1, 2	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>NoYes</td></tr><tr><td>Correct value provided?</td><td>NoYes</td></tr><tr><td>Has this value been verified?</td><td>NoYes</td></tr><tr><td>Choice of data correctly justified?</td><td>NoYes</td></tr><tr><td>Measurement method correctly described?</td><td>NoYes</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	NA	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	NoYes	Correct value provided?	NoYes	Has this value been verified?	NoYes	Choice of data correctly justified?	NoYes	Measurement method correctly described?	NoYes	CR #15	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																					
Title in line with methodology?	NA																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	NoYes																					
Correct value provided?	NoYes																					
Has this value been verified?	NoYes																					
Choice of data correctly justified?	NoYes																					
Measurement method correctly described?	NoYes																					

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		<b>Clarification Request No. 15.</b> Please submit an analysis result of each fuel used to justify the appropriateness of the choice of IPCC defaults listed in the table 1.4 of 2006 IPCC Guidelines. E.g.; If “Paraffin” actually used complies with the definition, “Kerosene comprises refined petroleum distillate intermediate in volatility between gasoline and gas/diesel oil. It is a medium oil distilling between 150°C and 300°C.” If coal actually used complies with the definition for either Coking Coal, Other Bituminous Coal or Sub-Bituminous Coal. And how 63,000 was determined for LPG. Please clarify about NCV simultaneously.																				
E.6.3.2.1. Parameter Title: NCVi – Net Calorific Value of the fossil fuel (TJ/Gg)	1, 2	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>NoYes</td></tr><tr><td>Correct value provided?</td><td>NoYes</td></tr><tr><td>Has this value been verified?</td><td>NoYes</td></tr><tr><td>Choice of data correctly justified?</td><td>NoYes</td></tr><tr><td>Measurement method correctly described?</td><td>NoYes</td></tr></table> Please see above CR #14	Data Checklist	Yes / No / NA	Title in line with methodology?	NA	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	NoYes	Correct value provided?	NoYes	Has this value been verified?	NoYes	Choice of data correctly justified?	NoYes	Measurement method correctly described?	NoYes	CR #15	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																					
Title in line with methodology?	NA																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	NoYes																					
Correct value provided?	NoYes																					
Has this value been verified?	NoYes																					
Choice of data correctly justified?	NoYes																					
Measurement method correctly described?	NoYes																					
E.6.3.2.2. Parameter Title: F <sub>b,i,y</sub> – Quantity of Fossil Fuel consumed in the baseline scenario(kg/household)	1, 2	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	NA	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	CR #16	<input checked="" type="checkbox"/>										
Data Checklist	Yes / No / NA																					
Title in line with methodology?	NA																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					

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		<table><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>NoYes</td></tr><tr><td>Choice of data correctly justified?</td><td>NoYes</td></tr><tr><td>Measurement method correctly described?</td><td>NoYes</td></tr></table> <b>Clarification Request No. 16.</b> Please clarify how the quantity of fossil fuel consumed both in the baseline scenario and in the project will be determined and how the value applied was estimated in conservative manner. Please clarify how the consumption of fossil fuel for cooking can be separately determined or monitored.	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	NoYes	Choice of data correctly justified?	NoYes	Measurement method correctly described?	NoYes										
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	NoYes																					
Choice of data correctly justified?	NoYes																					
Measurement method correctly described?	NoYes																					
E.6.3.2.3. Parameter Title: F <sub>p,i,y</sub> – Quantity of Fossil Fuel consumed in the project (kg/household)	1, 2	<table><tr><td>Data Checklist</td><td>Yes / No / NA</td></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>NoYes</td></tr><tr><td>Choice of data correctly justified?</td><td>NoYes</td></tr><tr><td>Measurement method correctly described?</td><td>NoYes</td></tr></table> Same as CR #15	Data Checklist	Yes / No / NA	Title in line with methodology?	NA	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	NoYes	Choice of data correctly justified?	NoYes	Measurement method correctly described?	NoYes	CR #15	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																					
Title in line with methodology?	NA																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	NoYes																					
Choice of data correctly justified?	NoYes																					
Measurement method correctly described?	NoYes																					
E.6.3.2.4. Parameter Title: N – Number of households using WB	1, 2	<table><tr><td>Data Checklist</td><td>Yes / No / NA</td></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	NA	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	CR #17	<input checked="" type="checkbox"/>										
Data Checklist	Yes / No / NA																					
Title in line with methodology?	NA																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					

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CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS		GSP	Final																		
		<table><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>NoYes</td></tr><tr><td>Choice of data correctly justified?</td><td>NoYes</td></tr><tr><td>Measurement method correctly described?</td><td>NoYes</td></tr></table>	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	NoYes	Choice of data correctly justified?	NoYes	Measurement method correctly described?	NoYes											
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						
Has this value been verified?	NoYes																						
Choice of data correctly justified?	NoYes																						
Measurement method correctly described?	NoYes																						
		<p><b>Clarification Request No. 17.</b></p> <p>Please clarify how the number of households which keep using WB will be determined in the conservative manner. based on the number sold? or with ex-post sampling survey?</p>																					
E.6.3.2.5. Parameter Title: E <sub>b,elec,y</sub> – Annual Electricity Consumption in the baseline scenario (kWh/year per household)	1, 2	<table><tr><td>Data Checklist</td><td>Yes / No / NA</td></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>NoYes</td></tr><tr><td>Choice of data correctly justified?</td><td>NoYes</td></tr><tr><td>Measurement method correctly described?</td><td>NoYes</td></tr></table>	Data Checklist	Yes / No / NA	Title in line with methodology?	NA	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	NoYes	Choice of data correctly justified?	NoYes	Measurement method correctly described?	NoYes		CR #18	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																						
Title in line with methodology?	NA																						
Data unit correctly expressed?	Yes																						
Appropriate description of parameter?	Yes																						
Source clearly referenced?	Yes																						
Correct value provided?	Yes																						
Has this value been verified?	NoYes																						
Choice of data correctly justified?	NoYes																						
Measurement method correctly described?	NoYes																						
		<p><b>Clarification Request No. 18.</b></p> <p>Please clarify how the value, annual electricity consumption both in the baseline scenario and in the project will be determined or monitored and how the value applied was estimated in conservative manner.</p> <p>Please clarify how the consumption of electricity for cooking can be separately determined or monitored.</p>																					

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E.6.3.2.6. Parameter Title: E <sub>p,elec,y</sub> – Annual Electricity Consumption in the project (kWh/year per household)	1, 2	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>NoYes</td></tr><tr><td>Choice of data correctly justified?</td><td>NoYes</td></tr><tr><td>Measurement method correctly described?</td><td>NoYes</td></tr></table> See CR #18 above.	Data Checklist	Yes / No / NA	Title in line with methodology?	NA	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	NoYes	Choice of data correctly justified?	NoYes	Measurement method correctly described?	NoYes	CR #18	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																					
Title in line with methodology?	NA																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	NoYes																					
Choice of data correctly justified?	NoYes																					
Measurement method correctly described?	NoYes																					
E.6.3.2.7. Parameter Title: EF <sub>CO2,elec,y</sub> – Emission Factor of Electricity consumed (tCO2/kWh)	1, 2	<table><tr><th>Data Checklist</th><th>Yes / No / NA</th></tr><tr><td>Title in line with methodology?</td><td>NA</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>NoYes</td></tr><tr><td>Choice of data correctly justified?</td><td>NoYes</td></tr><tr><td>Measurement method correctly described?</td><td>NoYes</td></tr></table> <b><u>Corrective Action Request No.14.</u></b> Please indicate how the electricity grid emission factor would be calculated. Whether it would be fixed ex-ante or updated ex-post? And please submit the calculations in the spreadsheet.	Data Checklist	Yes / No / NA	Title in line with methodology?	NA	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided?	Yes	Has this value been verified?	NoYes	Choice of data correctly justified?	NoYes	Measurement method correctly described?	NoYes	CAR #14	<input checked="" type="checkbox"/>
Data Checklist	Yes / No / NA																					
Title in line with methodology?	NA																					
Data unit correctly expressed?	Yes																					
Appropriate description of parameter?	Yes																					
Source clearly referenced?	Yes																					
Correct value provided?	Yes																					
Has this value been verified?	NoYes																					
Choice of data correctly justified?	NoYes																					
Measurement method correctly described?	NoYes																					

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E.7.Application of the monitoring methodology and description of the monitoring plan																												
E.7.1. Data and parameters to be monitored by each SSC-CPA																												
E.7.1.1.Is the list of parameters presented in chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology?	1, 2	No, the list of parameters presented is not complete. Please refer to CARs and CRs below. <b><u>Corrective Action Request No.15.</u></b> Please use the table format as provided in section E.7.1 of the PoA-DD template and please complete each table including method of monitoring, QA/QC procedures.	CAR #15	<input checked="" type="checkbox"/>																								
E.7.1.1.1. Parameter Title: EF <sub>CO2,f</sub> – Emission factor of fossil fuel (kgCO2/TJ)	1, 2	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	Yes																											
Has this value been verified?	Yes																											
Measurement method correctly described?	Yes																											
Correct reference to standards?	Yes																											
Indication of accuracy provided?	Yes																											
QA/QC procedures described?	Yes																											
QA/QC procedures appropriate?	Yes																											
E.7.1.1.2. Parameter Title: NCVi – Net Calorific Value of the fossil fuel (TJ/Gg)	1, 2	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr></table>	Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>										
Monitoring Checklist	Yes / No																											
Title in line with methodology?	Yes																											
Data unit correctly expressed?	Yes																											
Appropriate description of parameter?	Yes																											
Source clearly referenced?	Yes																											
Correct value provided for estimation?	Yes																											
Has this value been verified?	Yes																											



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		Measurement method correctly described?	Yes			
		Correct reference to standards?	Yes			
		Indication of accuracy provided?	Yes			
		QA/QC procedures described?	Yes			
		QA/QC procedures appropriate?	Yes			
E.7.1.1.3. Parameter Title: F <sub>b,l,y</sub> – Quantity of Fossil Fuel consumed in the baseline scenario(kg/household)	1, 2				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Monitoring Checklist	Yes / No			
		Title in line with methodology?	Yes			
		Data unit correctly expressed?	Yes			
		Appropriate description of parameter?	Yes			
		Source clearly referenced?	Yes			
		Correct value provided for estimation?	Yes			
		Has this value been verified?	Yes			
		Measurement method correctly described?	Yes			
		Correct reference to standards?	Yes			
		Indication of accuracy provided?	Yes			
		QA/QC procedures described?	Yes			
		QA/QC procedures appropriate?	Yes			
E.7.1.1.4. Parameter Title: F <sub>p,l,y</sub> – Quantity of Fossil Fuel consumed in the project (kg/household)	1, 2				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		Monitoring Checklist	Yes / No			
		Title in line with methodology?	Yes			
		Data unit correctly expressed?	Yes			
		Appropriate description of parameter?	Yes			
		Source clearly referenced?	Yes			
		Correct value provided for estimation?	Yes			
		Has this value been verified?	Yes			
		Measurement method correctly described?	Yes			
		Correct reference to standards?	Yes			
		Indication of accuracy provided?	Yes			
		QA/QC procedures described?	Yes			

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		QA/QC procedures appropriate?	Yes																											
E.7.1.1.5. Parameter Title: N – Number of households using WB	1, 2	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>			Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																													
Title in line with methodology?	Yes																													
Data unit correctly expressed?	Yes																													
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Indication of accuracy provided?	Yes																													
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QA/QC procedures appropriate?	Yes																													
E.7.1.1.6. Parameter Title: E <sub>b,elec,y</sub> – Annual Electricity Consumption in the baseline scenario (kWh/year per household)	1, 2	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>			Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	Data unit correctly expressed?	Yes	Appropriate description of parameter?	Yes	Source clearly referenced?	Yes	Correct value provided for estimation?	Yes	Has this value been verified?	Yes	Measurement method correctly described?	Yes	Correct reference to standards?	Yes	Indication of accuracy provided?	Yes	QA/QC procedures described?	Yes	QA/QC procedures appropriate?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Monitoring Checklist	Yes / No																													
Title in line with methodology?	Yes																													
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Correct reference to standards?	Yes																													
Indication of accuracy provided?	Yes																													
QA/QC procedures described?	Yes																													
QA/QC procedures appropriate?	Yes																													
E.7.1.1.7. Parameter Title: E <sub>p,elec,y</sub> – Annual Electricity Consumption in the project (kWh/year)	1, 2	<table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr></table>			Monitoring Checklist	Yes / No	Title in line with methodology?	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																				
Monitoring Checklist	Yes / No																													
Title in line with methodology?	Yes																													

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per household)		Data unit correctly expressed?	Yes		
		Appropriate description of parameter?	Yes		
		Source clearly referenced?	Yes		
		Correct value provided for estimation?	Yes		
		Has this value been verified?	Yes		
		Measurement method correctly described?	Yes		
		Correct reference to standards?	Yes		
		Indication of accuracy provided?	Yes		
		QA/QC procedures described?	Yes		
		QA/QC procedures appropriate?	Yes		
E.7.2. Description of the monitoring plan for a SSC-CPA					
E.7.2.1.Is the operational and management structure clearly described and in compliance with the envisioned situation?	1	No, this section just refers A.4.4.2.  <b><u>Corrective Action Request No.16.</u></b> Please state the monitoring plan for a SSC-CPA in details including the operational and management structure.		CAR #16	<input checked="" type="checkbox"/>
E.7.2.2.Are responsibilities and institutional arrangements for data collection and archiving clearly provided?		No, please see above.		CAR #16	<input checked="" type="checkbox"/>
E.7.2.3.Does the monitoring plan provide current good monitoring practice?	1	No, please see above.		CAR #16	<input checked="" type="checkbox"/>
E.7.2.4.If applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?	1	Yes		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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<b>E.8.Date of completion of the application of the baseline study and monitoring methodology and the name of the responsible person(s)/entity(ies)</b>				
E.8.1.1.Is there any indication of a date when the baseline was determined?	1	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.8.1.2.Has dd/mm/yyyy format been used to indicate the date?	1	<b><u>Corrective Action Request No.17.</u></b> Please identify the date too, instead of "March 2009"	CAR #17	<input checked="" type="checkbox"/>
E.8.1.3.Is this consistent with the time line of the PoA-DD history?	1	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.8.1.4.Is the information on the person(s) / entity (ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1, 20	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.8.1.5.Is information provided whether this person / entity is also considered a project participant?	1, 20	No, its' stated as a consultant.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F. Annexes 1 – 4</b>				
<b>F.1.Annex 1: Contact Information</b>				
F.1.1. Is the information provided consistent with the one given under section A.3?	1, 20	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.2. Is the information on all private participants and directly involved Parties presented?	1, 20	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F.2.Annex 2: Information regarding public funding</b>				
F.2.1. Is the information provided on the	1, 20		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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inclusion of public funding (if any) in consistency with the actual situation presented by the project participants?		Please see CR #9 at A.4.5.1.		
F.2.2. If necessary: Is an affirmation available that any such funding from Annex-I countries does not result in a diversion of ODA?	1, 20	Please see CR #9 at A.4.5.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>F.3. Annex 3: Baseline information</b>				
F.3.1. If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD?	1, 6, 9, 13	<b><u>Corrective Action Request No.18.</u></b> Yes, the report of Kitchen Test 2009 is referred here. However the analysis is being elaborated. This section should be updated accordingly.	CAR #18	<input checked="" type="checkbox"/>
F.3.2. Is the data provided verifiable? Has sufficient evidence been provided to the validation team?	1, 6, 9, 13	Please see above.	CAR #18	<input checked="" type="checkbox"/>
F.3.3. Does the additional information substantiate / support statements given in other sections of the PDD?	1, 6, 9, 13	Please see above.	CAR #18	<input checked="" type="checkbox"/>
<b>F.4. Annex 4: Monitoring information</b>				
F.4.1. If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PoA-DD?	1, 6, 9, 13	<b><u>Corrective Action Request No.19.</u></b> No sampling plan is stated in this Annex 4. Before that, statistically sound information, e.g. the result of survey shall be provided in order to justify the appropriateness of the sampling plan being provided. Please see CAR #5 at A.4.4.6.	CAR #19	<input checked="" type="checkbox"/>
F.4.2. Is the information provided verifi-	1, 6,	Please see above.	CAR	<input checked="" type="checkbox"/>

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able? Has sufficient evidence been provided to the validation team?	9, 13		#19	
F.4.3. Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PoA-DD?	1, 6, 9, 13	Please see above.	CAR #19	<input checked="" type="checkbox"/>

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

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of programme owner response	Validation team Conclusion
<p><b><u>Clarification Request No. 1.</u></b></p> <p>Although KT report comprehensively addresses important issues including concerns/risks and statistical characters, such issues have not sufficiently been clarified in order to determine the baseline, project performance and the uncertainty of the information. For an instance, the duration of the investigation is very short. A week for baseline and 1+1 weeks for the project. In addition, there are many other negative factors, e.g. significant ineffective results including one defined as nonconformance compared to the total investigated. And, as mentioned in the report, there can be seasonal variation. Therefore 1 week investigation is likely to be insufficient to determine the baseline emissions and other assumptions/conditions shall clearly be mentioned to explain and justify the way how 1 week investigation results can be extended to estimate or to determine annual figures..And, although fuel consumption as well as the fuel saving with WB is thought to rely on the variation of cooking pattern, its' not really investigated but done mainly about</p>	A.2.4.	<p>The issues mentioned were considered carefully during design of the Kitchen Survey and Kitchen Tests. 3rd party advisers were consulted, principally Dr Amber Tomas, a qualified statistics expert working at the Oxford University Statistics Department. The advice given on the specific issues mentioned was:</p> <ol style="list-style-type: none"> <li>Duration of KTs and seasonal variation: Expert advice was that under specific conditions, a comparison of two week-long tests (one with WB and one without) was preferable to long-duration tests as they could capture household energy consumption accurately and effectively. The key specific condition asserted was that the tests should not be carried out in the winter months in order to ensure a conservative result by avoiding periods when more hot food may be eaten. The general condition or context was that tests are carried out according to the protocol recommended, which is designed to ensure that two week-long tests provide accurate results.</li> <li>Fuel saving from variation in cooking pattern: Expert advice was that savings made by Wonderbag use will be captured more reliably by comparing total household energy use with and without the WB in operation, given that the KT protocol demands that</li> </ol>	<p><input checked="" type="checkbox"/></p> <p>Clarified with the ex-post statistical survey planned to compare and to measure both baseline emissions and project emissions. This is called "annual monitoring survey" at E.7.2. section in PoA-DD.</p> <p>As this survey is simultaneously to compare the total energy consumption at the baseline group (households without WB sampled randomly) and at the project group (households with WB sampled randomly), it will theoretically abstract the effect of WB on the total energy consumption, encompassing any individual factors, including even quitting WB.</p> <p>And this way has been considered to comply with the Option 2 stipulated in the</p>



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fuel mix which is used not only for cooking.		<p>the test includes investigation of energy usage and detects any non-normal usage occurring in either of the two weeks. Subjects showing non-normal usage or any evidence of a changed pattern of household energy consumption between the two test weeks, are excluded from the sample as non-conformers.</p> <p>c. Non-conformance and non-compliance. Expert advice was that in the context of this survey, the removal of samples not conforming to the test protocol was appropriate, especially with regard to ensuring that unusual energy consumption events are identified and the any test showing these is excluded.</p> <p>Further detail on these issues, together with further advice on similar issues, and details of the KT protocol followed, can be found in the supporting document &lt;WB3-Conf-Draft WB Survey Protocol AT 091019&gt;</p>	<p>page 3/8 of AMS II.C. version 13, "This option can only be used where comparable conditions for the output in the baseline and project can be established."</p> <p>As far as such survey can justify its' statistical appropriateness, the effect measured among samples chosen will be considered to represent the mother population, while the project proponent is simultaneously taking the risk of having no emission reduction in case of no statistical significance found at the survey.</p>
<p><b><u>Clarification Request No. 2.</u></b></p> <p>Technology applied is simple. However the performance is thought to rely very much on ways of usage, baseline energies and/or cooking styles at each households. In other words, there can be big variation on the performance. At the validation, sufficient data should be provided reasonably to justify the appropriateness of the estimation stated.</p>	A.2.6.	<p>Variation in performance was captured in the survey undertaken in 2009 which involved extensive sampling to satisfy appropriate confidence levels. The survey revealed that the WB saves approximately 700 kWh/year amongst cooks using electricity, and 100 litres/year kerosene amongst cooks using kerosene. The report on the survey &lt;WB2-Conf-KS-KT-30March09&gt; provides further detail as does the accompanying analysis documents which are &lt;WB4-Conf-KT2009Datsummary091020&gt; and &lt; WB3-Conf-DraftSurveyProtocol-AT-091019&gt;</p>	<p><input checked="" type="checkbox"/></p> <p>Because of the above reason, there is no ex-ante determination of both the baseline emissions and the project emissions.</p> <p>And thus, the estimation based on the the survey, called Kitchen Test 2009 has been considered acceptable for the estimation purpose considering the opinion of the statistical expert.</p>
<b><u>Clarification Request No. 3.</u></b>	A.3.2.	A letter to the DNA has been prepared as follows. This	(not yet clarified)

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<p>Please comply with Annex 29, EB47 as follows;</p> <p><u>7.</u> The coordinating/managing entity shall obtain letters of approval for the implementation of the PoA from each Host Party and Annex I Party involved in the PoA. Letters of approval shall be issued in accordance with the guidance provided by the CDM Executive Board (EB16, Annex 6).</p> <p><u>8.</u> The coordinating/managing entity shall obtain letters of authorization of its coordination of the PoA from each Host Party.</p>	<p>letter will be sent to the DNA together with this VP and validation report (and together with a copy of the MOC) once all Validation conclusions are positive and the Validation report is forwarded to QA dept.</p> <p>To : DNA, South Africa</p> <p>Dear Sir</p> <p><b>Programme of Activities: Heat Retention Cookers South Africa</b></p> <p>The CDM in its document "Procedures for registration of a PoA..." (Annex 29 of EB 47, paras 7 and 8) requests that a letter of approval is issued by the DNA following guidance given in Annex 6 of EB 16 and confirming co-ordination role of JPM Climate Care.</p> <p>Accordingly please confirm in the letter that:</p> <ol style="list-style-type: none"> <li>1. South Africa has ratified the Kyoto Protocol.</li> <li>2. Voluntary participation in the proposed CDM PoA is voluntary</li> <li>3. The project proponents are Natural Balance (Pty) Ltd of South Africa and JPMorgan ClimateCare of UK</li> <li>4. The proposed CDM PoA contributes to sustainable development in South Africa</li> <li>5. JPMorgan ClimateCare is authorized to act as the coordinating and management entity for this PoA, as per the attached MOC</li> <li>6. The DNA of south Africa approves of this project.</li> </ol> <p>A letter is also prepared and ready to send to the UK government once the approval is received from the DNA of South Africa. This letter will ask:</p> <p>Chris Dodwell Head of International Climate Change DEFRA</p> <p>Dear Mr Dodwell,</p> <p>JPMorganClimateCare is a project participant in a proposed CDM programme of activities entitled "Heat Retention Cookers in South Africa". We have submitted all documents and information required, to the DNA of South Africa.</p> <p>The DNA of the South Africa has confirmed that the PoA contributes to sustainable development. In order that we can submit this PoA to</p>	<p>DOE waits for the approval letters of the both Parties</p> <p>Please make sure that South African LoA refers Natural Balance (Pty) Ltd. as one of the project proponent in the approval letter, in addition.(See point 3 in letter)</p> <p>And, if JPM takes the role of sole Focal Point, please make MoC consistent (while such issue is explained below.)</p> <p><i>Please make sure that the identical name shall refer in LoAs, MoC and PDD (JPM climate care, Natural Balance)</i></p>
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		<p>the CDM Executive Board for registration could we ask you to confirm, stating that you are acting as the DNA for the UK, that:</p> <ul style="list-style-type: none"> <li>• The UK is a voluntary participator in the CDM</li> <li>• The UK ratified the Kyoto Protocol on 31<sup>st</sup> may 2002</li> <li>• You authorize our participation in this PoA</li> <li>• You are not acting as a host to this PoA and will not be issuing instructions or participating in issuance of CERs with respect to this PoA</li> </ul>	
<p><b><u>Clarification Request No. 4.</u></b></p> <p>Please submit MoC before the end of this validation process, which complies with the following requirements stated in Annex 29, EB47;</p> <p><u>9.</u> The latest version of the "Procedures for modalities of communication between project participants and the CDM Executive Board" shall apply, with the exception that the coordinating/managing entity shall be either sole or joint focal point for each area of communication..</p>	A.3.4.	<p>The modalities of communication form has been completed. The CME is the sole focal point for each area of communication. The ERPA signed between the two project participants stipulates that JPMVEC is the CME and is the sole focal point in all aspects of communication. We have been informed by UNFCCC secretariat that the MOC is to be provided from the DOE as part of submission for registration.</p>	<p><input checked="" type="checkbox"/></p> <p>MoC has been submitted in the form specified by UNFCCC.</p>
<p><b><u>Corrective Action Request No.1.</u></b></p> <p>Please indicate whether the implementation of the project activity require any technology transfer from Annex-I-countries to the host country.</p>	A.4.2.2.	<p>No technology transfer is required.</p>	<p><input checked="" type="checkbox"/></p> <p>This finding will be cancelled. (will be deleted.)</p>
<p><b><u>Clarification Request No. 5.</u></b></p> <p>As WB consists of a filling of polystyrene granules sown in to a cotton bag, no significant environmental impact currently is expected. However please submit a safety data sheet or any alternative to ensure, as previ-</p>	A.4.2.3.	<p>This matter has been investigated and no risk of adverse environmental impact from expanded polystyrene (EPS) was identified. An independent study was carried out in 1998 by PRC-Bouwcentrum, Netherlands in accordance ISO 14040. It found that EPS contains no CFC's or HCFC's, and that the amounts of carbon monoxide and styrene monomer given off when EPS is</p>	<p><input checked="" type="checkbox"/></p> <p>No CFC or HCFC as well as the insignificance of toxic agent has been proved.</p>

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ous polystyrene form included chlorofluoro-carbon and some VOC.		burnt, are insignificant. It also found that pentane (which is used to expand the polystyrene in place of CFCs) is non-toxic and constitutes no threat to the ozone layer.  The study is available as a supporting document < WB8-EPS Environmental Fact Sheet.pdf >	
<b><u>Clarification Request No. 6.</u></b> Please submit project implementation schedule	A.4.2.7.	In June 2009 a planning sheet was prepared by the Project Operator Natural Balance. This is provided as a supporting document. The project timeline has been and is expected to be as follows:  <b>Oct-November 2008</b> Discussions between NB and JPMCC as to energy saving potential of mass dissemination of Wonderbags in SA and the absence of finance to launch this. Decision that carbon finance would be critical to realization of the idea.  <b>December 2008</b> Legally binding agreement between NB and JPMCC as to forward purchase of ERs from a potential CER program (with possible pre-reg VERs) – first payment made to NB in order that preparation work in the field (market trials and performance measurement) could commence See < WB1-conf-NB-JPMCC-Contract-19Dec08>  <b>Jan-March 2009</b> Market trials and performance measurement. See < WB2-Conf-KS-KT-30March09>  <b>June 2009</b> Promotional launch and community consultation in SW Gauteng (CPA01) and market trials continuing with a view to financing by sale of pre-reg VERs from low-level sales rates  <b>June 09</b> Engagement in principle of validating DOE TUVsud	<input checked="" type="checkbox"/> Planning sheet June 2009 attached as supporting doc has been submitted

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		<p><b>August 09</b> POA-level stakeholder consultation</p> <p><b>August 09</b> Contract with validating DOE TUVsud and submission of Version 1 of POA-DD and CPA-DD</p> <p><b>Sept 09</b> Start of GSP.</p> <p><b>Oct 09</b> Validation process underway including first site visit</p> <p><b>Dec 09</b> Validation process ongoing with submission of responses to Before-on-site Validation protocol documents and submission of Draft version 2 POA-DD and CPA-DD</p> <p><b>January 10</b> Expected date of submission of Validation report for POA and first CPA</p> <p><b>February 10</b> Funding of market launch expected to be agreed on strength of validation</p> <p><b>March 10</b> Expected Funding of market launch expected to be agreed on strength of validation</p> <p><b>April 10</b> Registration</p> <p><b>April 10</b> Validation of first group of CPAs</p> <p><b>May 10</b> Funding of market launch expected to be paid on strength of registration</p> <p><b>May 10</b> Market launch. Start of operation of first group of CPAs.</p>	
<p><b><u>Clarification Request No. 7.</u></b></p> <p>Not clear.</p> <p>For an instance, “within South Africa” is not enough as each CPA must define the clear geographical boundary to make it unique and not to have double counting. The conformance with both PoA-DD registered and the applied methodology is not stated. Specially</p>	A.4.2.8.	<p>In accordance with Annex 32 of EB 47 “Guidelines on assessment of de-bundling for SSC project activities” , it is legitimate that each CPA can operate throughout South Africa. Although the CPAs in this PoA are head-quartered and focused primarily and initially in a specific geographic area, they are in fact permitted to sell WBs to users located in any part of the country. This is a practical measure, as it allows the CPAs to build effective businesses without geographic constraints which</p>	<p><input checked="" type="checkbox"/></p> <p>Clarified. The additionality of each CPA is sufficiently provided at E.5.2. section in PDD. The section A.4.2.2. has been revised to add the record keeping system which enables to make the sales</p>

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the criteria for demonstrating additionality should be specifically described. Please make the description conform to Annex 49, EB47, "Definition of eligibility criteria for inclusion of a project activity as a CPA under the PoA, which shall include, as appropriate, criteria for demonstration of additionality of the CPA, and the type and/or extent of information (e.g. criteria, indicators, variables, parameters or measurements) that shall be provided by each CPA in order to ensure its eligibility;		would be unfeasible to implement. A successful CPA will act competitively within the nominal borders of neighbouring CPAs. The risk of double-counting has been fully addressed. The relevant eligibility criteria are listed in versions 2 of both CPA01-DD and the POA-DD.	records traceable in order to prevent from double-counting WB among more than 1 CPA in South Africa. And the annual monitoring survey mentioned above is thought to negate the effect of other activities. These QA and check on double-counting is stated in the page 47 of the revised PoA-DD.
<b><u>Corrective Action Request No.2.</u></b> Please add further information on post-validation i.e. verification activities need to be indicated, e.g. who is in charge of monitoring	A.4.4.1.	The programme is operated by Natural Balance Ltd, whose role is to manufacture and supply the WBs, manage the retail activities of the Programme Activity Implementers (PAIs), collect accurate sales records from all CPAs, commission 3rd party monitoring surveys each year, and submit quarterly and annual monitoring reports to the CME, in line with the Monitoring Plan set out in the POADD and CPADD version 2. The CME will work with NB on this, and provide expert statistics advice as needed to ensure that the plan is followed. The CME will the commission the verifying DOE.	<input checked="" type="checkbox"/> The overall structure of operating and managing the projects is much more specifically described at A.4.4.1. in PDD.
<b><u>Corrective Action Request No.3.</u></b> The current description is mainly about sales record. Please add one for e.g. records of monitoring parameters specified in AMS II.C.	A.4.4.2.	The versions 2 of the POADD and CPADD include a list of ex-post (monitoring) parameters and explanation of these parameters.	<input checked="" type="checkbox"/> The section E.7. in the revised PDD sufficiently and consistently describe the monitoring parameters.
<b><u>Corrective Action Request No.4.</u></b>	A.4.4.3.	Comprehensive measures are taken to prevent double-	<input checked="" type="checkbox"/>



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<p>Please describe ways how to avoid double counting more specifically. Because double counting can happen not only with other CPA implemented under this PoA but also with other types of PoAs or CDMs. For an instance, fuel might be changed to bio-fuel with other CDMs. Or, other energy efficient equipment might be introduced to households, e.g. with CFL PoA which also reduces electricity consumption.</p>		<p>counting, as detailed in the Monitoring Plan. The primary method is by maintenance of accurate and up-to-records of manufacture, shipping, and wholesale supply to PAIs. Correlation of these records in the annual monitoring report ensures that the verifier can check effectively for double-counting between CPAs. A further prevention is provided by annual monitoring of the baseline. This eliminates the risk that a carbon saving claimed by another project is counted also by this programme. For example if there is trend whereby a fraction of households of the type purchasing WBs switch from kerosene to non-fossil alternative, the baseline will reduce as this trend will be apparent from the randomised survey approach. WB users who have switched to a non-fossil cooking fuel will be treated as drop-offs, so introducing a conservative multiplier effect.</p>	<p>As mentioned above, the ex-post statistical survey is thought to abstract either the significance or the insignificance of the effect of WB in the total energy consumption without being disturbed with other projects or other irrespective factors. And the traceable record keeping system planned is thought further to prevent from double-counting.</p>
<p><b><u>Clarification Request No. 8.</u></b> Please submit an evidence, e.g. an agreement between PPs.</p>	<p>A.4.4.5.</p>	<p>In the previous version of this VP, this question was associated with the question: "Are provisions in place to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA?". CPA managers sign a contract under which they agree that: "The Wonderbag programme is a Clean Development Mechanism (CDM) Programme of Activity titled Heat Retention Cookers in South Africa. In signing this contract you agree you are not currently, nor will you in future, subscribe to any other CDM activity, whether project or programme, for the duration of this contract, nor will be involved in any way or provide assistance to such programmes". Reference &lt;WB5-Conf-WOTManagerContract090906&gt;</p>	<p style="text-align: right;"><input checked="" type="checkbox"/></p> <p>Clarified. This request is to collect additional evidences to ensure the circumstances to implement the CPA. The contract with CPA managers have been considered enough to demonstrate the actual progress.</p>
<p><b><u>Corrective Action Request No.5.</u></b> This project has the fundamental difficulty to identify the quantity of both baseline emis-</p>	<p>A.4.4.6</p>	<p>Taking each of the questions in turn: a. Electricity and fossil fuels are used not only for</p>	<p style="text-align: right;"><input checked="" type="checkbox"/></p> <p>As mentioned above, the ex-</p>



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<p>sions and project emissions because electricity or fuel are used not only for cooking but also heating, lighting, bath, TV etc. It is practically difficult to separate fuel or electricity consumption due to cooking. In addition, there are many factors of variation, e.g. cooking style, baseline fuels, fuel or electricity, atmospheric temperature, i.e. seasons, etc. which affects emissions from cooking. Therefore, we can not basically assume the minimum variation of both baseline emissions and project performance. And we must consider the significant uncertainty in the result of monitoring if the project proponent is not going to monitor the exact quantity of CO2 emissions from cooking at every households. As a result, the sampling size currently is expected to be big at present.</p> <p>So far, there is no specific sampling plan indicated including at Annex 4 in this PoA-DD. And there is no justification on the sampling plan consequently. In general, the appropriateness of the size of sampling depends on the characteristics of the objective. In case the variation can be assumed to be small, e.g. only 5% is assumed to be the standard deviation based on the preliminary survey or an official information like an analysis report, the sampling size can easily be the minimum to discuss "90/10 precision" referred in the draft general guideline  <a href="http://cdm.unfccc.int/EB/047/eb47_repan27.p">http://cdm.unfccc.int/EB/047/eb47_repan27.p</a></p>		<p>cooking but for other applications: Expert advice was that savings made by Wonderbag use will be captured more reliably by comparing total household energy use with and without the WB in operation, given that the monitoring test protocol demands that the test includes investigation of overall household energy usage and detects any non-normal usage occurring in either of the two weeks. Subjects showing non-normal usage or any evidence of a changed pattern of household energy consumption between the two test weeks, are excluded from the sample as non-conformers.</p> <p>b. Atmospheric temperature, seasons: Expert advice was that the tests should not be carried out in the winter months in order to ensure a conservative result by avoiding periods when more hot food may be eaten. The general condition or context was that tests are carried out according to the protocol recommended, which is designed to ensure that two week-long tests provide accurate results.</p> <p>c. Cooking style, baseline fuels, sampling approach: The variation in cooking style and other characteristics, is captured through a random sampling approach which takes into account the extent of variation. The coefficient of variation calculated from the previous year's survey (or the 2009 survey in the case of the first year monitored) is used to predict the required sample size, and if the required precision is not achieved in practice due to increased variation, the sample size is increased to take account of this.</p> <p>d. One week + one week duration of KT's and seasonal variation: Expert advice was that under spe-</p>	<p>post statistical survey is thought to abstract either the significance or the insignificance of the effect of WB in the total energy consumption without being disturbed with other projects or other irrespective factors. And the traceable record keeping system planned is thought further to prevent from double-counting.</p> <p>And as the project proponent is explaining in the left column, Kitchen Test 2009 is considered to be the basis to develop the ex-post annual monitoring survey which is used to determine emission reductions. "90/10 precision" is also discussed to suggest the way of determination of the sampling size in the expert's opinion (IRL #9). A.7.2. section in PoA-DD refers it accordingly.</p> <p>As the conclusion, the validation team has considered that this PoA provides "measurable" emission reductions.</p>
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<p><a href="#">df</a></p> <p>As the variation is supposed to be significant in this project in general, the size of sampling should be increased statistically reasonably. However there is no sufficient information provided to discuss the uncertainty of both baseline emissions and project performance. Kitchen Test 2009 refers very comprehensive factors, however this does not look successful to have statistically reliable analysis in order to discuss the uncertainty of both baseline emissions and project performance. The duration of the investigation is very short for an instance. A week for the determination of baseline emissions and 1+1 weeks for the determination of project emissions. In addition, there were significant invalid elements in the result of the survey, e.g. many inappropriate answers in questionnaires, strange results defined as non-conformance. And, although fuel consumption as well as the fuel saving with WB is thought to rely on the variation of cooking style, such factor was not really discussed. As cooking consumes just a part of fuel/energy at each household, separated and quantitative investigation would be incorporated as a part of the study, e.g. more scientific and experimental study to determine the potential and/or the variation of energy saving, in addition to the survey visiting relatively many households.</p>		<p>cific conditions, a comparison of two week-long tests (one with WB and one without) was preferable to long-duration tests as they could capture household energy consumption accurately and effectively. The key specific condition asserted was that the tests should not be carried out in the winter months in order to ensure a conservative result by avoiding periods when more hot food may be eaten. The general condition or context was that tests are carried out according to the protocol recommended, which is designed to ensure that two week-long tests provide accurate results.</p> <p>e. Non-conformance and non-compliance. Expert advice was that in the context of this survey, the removal of samples not conforming to the test protocol was appropriate, especially with regard to ensuring that unusual energy consumption events are identified and the any test showing these is excluded.</p> <p>Further detail is available in version 2 of the POADD and also in the attached papers by Dr Amber Tomas, a qualified statistics expert working at the Oxford University Statistics Department. &lt; WB3-Conf-DraftSurveyProtocol-AT-091019&gt; and &lt; WB9-Conf-StatisticsCPAsamplingAT091201&gt;</p>	
<p><b><u>Clarification Request No. 9.</u></b></p>	<p>A.4.5.1.</p>	<p>The two financing modalities currently in place are</p>	<p><input checked="" type="checkbox"/></p>

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<p>Please submit an evidence, e.g. any document indicates the way of financing the project.</p>		<p>a) an advance purchase of ERs by the sum of 100,000 USD as first agreed between JPMCC and NB in the Term Sheet of 19 Dec 2008 (see attached file &lt; WB1-conf-WB-JPMCC-NB-TS-081219.pdf&gt; This agreement was later confirmed within the programme ERPA signed between JPMCC and NB.</p> <p>A loan from H Collins and Son Pty Ltd sufficient to cover costs in 2009 but insufficient for further activity (and without a loan grace period). The loan agreement is titled Loan Agreement with H. Collins &amp; Son and Sarah Collins, 30 June 2009</p>	<p>Evidences have been considered sufficient to indicate non-ODA diversion financing.</p>
<p><b><u>Clarification Request No. 10.</u></b></p> <p>Please submit the response from DEA as this PoA-DD states, "The DNA was represented at the local stakeholder meeting of 13 August 2009, on which occasion it voiced support for the programme. The DNA further requested that the Department of Environment (DEA) was contacted with regard to EIAs for CPAs. Accordingly a request for exemption from EIA has been sent to the DEA and a response is awaited."</p>	<p>C.2.1.</p>	<p>Under South African law and regulation, none of the activities or processes constituting a typical CPA of this programme require Environmental Impact Assessments. The relevant law and regulations are found in section 53(1) of the National Environmental Management: Biodiversity Act (No. 10) 2004, and in sections 24 and 24D of the National Environmental Management Act (1998); specifically, notices No. R. 386 and R. 387 (2006). The 25 activities (under Notice 386) and 10 activities (under Notice 387) that require EIAs do not include any activities of a typical CPA.</p> <p>See &lt; WB7-EIA reg docs&gt;</p> <p>The DNA request that the DEA was contacted was therefore erroneous, as no reason existed for application for an exemption.</p>	<p><input checked="" type="checkbox"/></p> <p>Clarified. No request of EIA is quite reasonable considering the type of the project.</p>
<p><b><u>Corrective Action Request No.6.</u></b></p> <p>Please justify the choice of doing local stakeholder consultation at the PoA level.</p>	<p>D.1.2.</p>	<p>This was done for two reasons:</p> <p>a. Market trials in various different parts of the country demonstrated a very high level of similarity with regard to any matters addressed by a SHC, especially in regard of customers, local authorities, and volun-</p>	<p><input checked="" type="checkbox"/></p> <p>Accepted considering the similarity and the CPA's dependence on the project design in PoA.</p>

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		<p>tary organizations at local level.</p> <p>b. The key stakeholders with important inputs to make to the design of the project and its CPAs, were much more easily accessible at a national meeting in Johannesburg.</p> <p>Information on the POA-level SHC is recorded in the file &lt; WB6-National SHC Report 090823&gt;</p>	
<p><b><u>Clarification Request No. 11.</u></b></p> <p>Please submit a list of local stakeholders been consulted.</p>	D.2.1.	<p>This list is included as Annex A (invitations) and Annex B (attendees) of the national stakeholder consultation report. See attached file &lt;&lt;WB6-National SHC Report 090823&gt;. The report also provides detail of comments received in writing as well as during the meeting.</p>	<p>☑</p> <p>Clarified. 50 in total was invited including representatives from government, the energy industry, NGOs the media, civil society, developers of similar technologies, members of Wonderbag Outreach teams (WOTs) and potential investors.</p>
<p><b><u>Clarification Request No. 12.</u></b></p> <p>Please clarify if no stakeholder consultation is required in host country for this kind of programme.</p>	D.2.3.	<p>In South Africa, the official term for a stakeholder consultation when it is required by law is a “public participation process” (PPP). The PPP is one step in the process of an EIA. The project is not required to apply for EIA (see response to CL9 above), and is therefore not required to conduct a PPP.</p>	<p>☑</p> <p>Clarified as mentioned at CL#9 above.</p>
<p><b><u>Clarification Request No. 13.</u></b></p> <p>PDD states that the average performance of WB is expected to be approximately 700kWh per year. This is considerably less than 1% of the energy limit for Type II projects and thus CPA of this PoA is exempted from performing de-bundling check in accordance with <i>GUID-</i></p>	E.2.2.3.	<p>Performance of the WB was measured in the survey undertaken in 2009 which involved extensive sampling to satisfy appropriate confidence levels. The survey revealed that the WB saves approximately 790 kWh/year amongst cooks using electricity, and 86 litres/year kerosene amongst cooks using kerosene. The report on the survey &lt;WB2-Conf-KS-KT-30March09&gt;</p>	<p>☑</p> <p>Clarified simultaneously with the effectiveness of Kitchen Test 2009 as the basis of the estimation as well as to develop the statistical monitor-</p>

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<i>ANCE FOR DETERMINING THE OCCURRENCE OF DE-BUNDLING UNDER A PROGRAMME OF ACTIVITIES (PoA) as Annex 32 in EB47 report.. Please justify 700kWh per year as the average performance of WB based on objective evidences.</i>		provides further detail as does the accompanying analysis documents which are <WB4-Conf-KT2009Datasummary091020> and < WB3-Conf-DraftSurveyProtocol-AT-091019>	ing method.
<b><u>Corrective Action Request No.7.</u></b> E.2. section in PoA-DD does not discuss and justify about this applicability condition.	E.2.2.4.	The condition is not applicable in this case because WB does not replace an appliance.	<input checked="" type="checkbox"/> Accepted about no applicability of the 2 <sup>nd</sup> paragraph in AMS II.C. since WB does not displace equipment or system. WB has been considered to be the adoption of an additional energy-efficient equipment like inverters in industries.
<b><u>Corrective Action Request No.8.</u></b> Please make words a little more specific to identify the CO2 emissions from each household in case of fuel and from the power plants connected to the grid in case of electricity.	E.3.2.	Combustion of fossil fuels such as kerosene in the home; generation of electricity in power stations using fossil fuels	<input checked="" type="checkbox"/> The scope has been revised as responded in the left.
<b><u>Corrective Action Request No.9.</u></b> There is no discussion and justification at this E.4. section while the baseline and additionality discussion are presented at A.4.3. section.	E.4.1.	This section of version 2 of the POADD provides the following discussion and justification: In the absence of the project activity, the baseline scenario is the domestic consumption of grid electricity and fossil fuels in South Africa amongst householders not using heat retention cookers. Baseline measurement is included in the monitoring plan, and will be evaluated by way of annual sampling of such households throughout the project period. The baseline households will be identified as homes with socio-economic and cultural status equivalent to the homes purchasing Wonderbags. In	<input checked="" type="checkbox"/> The summary has been described consistently to other sections.



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		practice this will be accomplished by augmentation of the random sampling approach used to identify project households selected for energy measurement. For each project household visited, a group of neighbouring homes of equivalent status will be identified and a random selection made of one. Sample size will be sufficiently large to achieve a precision of at least 90/10 with a proviso that should such a sample size not be achievable in practical terms the more conservative approach of adopting the lower bound of a 90% confidence interval, may be adopted.	
<p><b><u>Corrective Action Request No.10.</u></b></p> <p>The discussion about the option b) is made only for solar cookers. However there should be other plausible ways to have lower emissions, e.g. electricity instead of fuel, paraffin instead of coal.</p> <p>If such change can not excluded in the baseline discussion, the way of monitoring shall consider such factor too.</p>	E.4.2.	Version 2 of the POADD defines Alternative b) as the adoption by low-income families of low-emission or zero-emission cook-stoves and fuels. It gives the following examples: bio-coal, bio-fuel-gels, solar cook-stoves.	<p style="text-align: center;">☑</p> <p>An alternative of using lower emission fuel or energy has been added in the additionality discussion and properly eliminated with the cost &amp; behavioural barriers.</p>
<p><b><u>Corrective Action Request No.11.</u></b></p> <p>The financial barrier is explained with the threshold at ZAR150 (Euros14.00) as the price of WB. Please justify this barrier based on the objective information.</p> <p>And with regard to “Non-availability of equity investment or commercial loans” and “Non-availability of adequate non-commercial finance”, the discussion here sounds one for CDM project. If we do not assume CDM project, we do not need to assume cost of human resource for an instance. But an end-</p>	E.4.2.	Version 2 of the POADD provides justification as to the threshold price of ZAR150 (Euros14.00). A study consisting of pilot manufacturing and pilot distribution together with market trials, was made in 2008 and 2009. This demonstrated the purchasing behaviour of the target market population, the acceptability of the Wonderbag, and its the dissemination costs. Pricing comparisons of comparable appliances and goods indicated that the Wonderbag is not acceptable to a large population if its price exceeds ZAR 150. Affordability at ZAR 150 was found to be questionable in view of data collected on the monthly spend by South African house-	<p style="text-align: center;">☑</p> <p>The way of the determination has been presented in PoA-DD. While there is no decisive criteria in general, the determination has been based on the comparison to other household appliances and monthly expenditure for fuels &amp; appliances. As purchasing WB will be additional expenditure for end-users</p>

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user of WB is supposed to purchase WB on a voluntary basis in the option a).		holds on Electricity, gas, and other fuels, and Household appliances. Details of the comparison and on the monthly spend figures, are supplied with references in the POADD.	and ZAR150 is approximately twice more expensive than monthly expenditure of fuel, the effectiveness of the barrier is accepted.
<p><b><u>Corrective Action Request No.12.</u></b></p> <p>There is no key criteria identified but refers only a contract.</p> <p>Please also note that the barriers being presented at the PoA-DD level would be updated with the latest available information and project specific data. Also, the barrier check-list and summary assessment needs to be presented in the CPA-DD.</p>	E.5.1.	<p>The key criteria for assessing additionality of a CPA will be as follows:</p> <ul style="list-style-type: none"> <li>• That the overall costs (manufacture, marketing, distribution, overheads, management, after-sales and monitoring, and others) exceed revenue achievable from sales at affordable prices, in the context of achieving the projected sales volumes</li> <li>• That alternative scenarios, such as availability of low or zero-emission cooking technologies are not adopted widely to a degree not accounted for by the baseline tracking approach adopted in the monitoring plan</li> <li>• That the conditions under which distribution is to take place are challenging and give rise to barriers insurmountable without carbon accreditation</li> <li>• That the prevailing practice, and behavioural conditions are also challenging and give rise to barriers insurmountable without carbon accreditation</li> </ul>	<p>☑</p> <p>As mentioned above, the discussion has been sufficiently elaborated with the references, i.e. the data and the sources used.</p>
<p><b><u>Corrective Action Request No.13.</u></b></p> <p>Please provide general description to comply with the title of this section including the methodology applied.</p>	E.6.1.	<p>The emission reductions achieved by a typical CPA will be estimated and measured by application of the following options within AMS II.C:</p> <ul style="list-style-type: none"> <li>• For fossil fuels users within the CPA: as prescribed by the methodology and detailed in Section E.6.2 below. Both baseline and project national fuel con-</li> </ul>	<p>☑</p> <p>The description has been revised to refer the methodology applied. The project is to adopt WB as the energy-efficient appliance at house-</p>



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		<p>sumption will be measured for each fossil use through representative sampling each year and multiplied by the emission factor of the relevant fossil fuel.</p> <p>For electricity users within the CPA: as prescribed by the methodology and detailed in Section E.6.2 below, applying Option 2 for assessment of electricity-using baseline. Both baseline and project electricity national consumption will be measured by way of representative sampling each year and multiplied by the emission factor of the South African grid.</p>	holds and it complies with the 1 <sup>st</sup> paragraph of AMS II.C. version 13.
<p><b><u>Clarification Request No. 14.</u></b></p> <p>The equations will be discussed during the on-site visit. e.g.;</p> <p>5) “national average” of fuel consumption both in the baseline scenario and in the project is too ambiguous as it is not easy at all to determine this parameter</p> <p>6) While significant variation is expected, will “average” really works? Because there can be big variation on fuel consumption and energy mix, depending on the living of each household.</p> <p>7) As each parameters shall be determined based on statistically sound sampling survey, such way of determination shall be presented.</p> <p>8) Why NCV is missing in the equation of PE?</p>	E.6.2.	<p>The equations used to calculate emission reductions depend on parameter values found from random sampling. The ex-post parameters measured by the annual survey are:</p> <ul style="list-style-type: none"> <li>• Household energy consumption (both baseline and project values), both electricity and fossil fuels</li> <li>• Relative numbers of electricity-using and fossil-fuel-using Wonderbag users</li> <li>• Fraction of Wonderbags sold, which have dropped out of use (the “Drop-off Fraction”)</li> </ul> <p>The annual monitoring survey shall determine these parameter values for application to all active CPAs with respect to a specific monitoring and verification period which is identical for all CPAs. The sampling procedure may either consist of a single-stage process which randomly samples households across all the CPAs, or it may consist of a two-stage process whereby a sample of CPAs are randomly selected and within these, a random selection is made of households. Both procedures are statistically sound and either one may be adopted each year by the CME depending on practical feasibility</p>	<p>☑</p> <p>Clarified. As mentioned above, the project is going to make the annual statistical survey and various factors will be encompassed in that survey without being identified.</p>

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		<p>and costs.</p> <p>Wherever reasonably possible, sample sizes will be sufficient to ensure that the precision of the sample means for each parameter are 90/10 or better, in which cases the sample means will be used to estimate emissions reductions. If such samples sizes are difficult to achieve in practice, a conservative 90% lower bound on emissions reductions will be used. This is the value for which there is 90% confidence that the true mean parameter value is at least as large.</p> <p>NCV is included as an ex-ante parameter.</p>	
<p><b><u>Clarification Request No. 15.</u></b></p> <p>Please submit an analysis result of each fuel used to justify the appropriateness of the choice of IPCC defaults listed in the table 1.4 of 2006 IPCC Guidelines. E.g.;</p> <p>If “Paraffin” actually used complies with the definition, “Kerosene comprises refined petroleum distillate intermediate in volatility between gasoline and gas/diesel oil. It is a medium oil distilling between 150°C and 300°C.” If coal actually used complies with the definition for either Coking Coal, Other Bituminous Coal or Sub-Bituminous Coal. And how 63,000 was determined for LPG.</p> <p>Please clarify about NCV simultaneously.</p>	E.6.3.2.1.	<p>Calculations of emission reductions from savings in fossil fuels will be based on IPCC default values for these fuels, in accordance with the methodology in the context where direct information is not available as in this case.</p> <p>All domestic kerosene (also known as paraffin) in South Africa is made and supplied by Sasol. It is made in two refineries, Natref and Secunda. At Natref the kerosene is crude-derived with some synthetic oil (from coal), and has a NCV between 39 and 40 MJ/kg. At the Secunda refinery, the kerosene is entirely synthetic, and has a higher NCV at between 40 and 41 MJ/kg. Since these figures are both less than the IPCC default NCV for kerosene (44 MJ/kg), a conservative approach is taken and emission reductions are calculated using the IPCC default value of 44 MJ/kg.</p> <p>In the context of consumption of coal and kerosene in power stations the POADD contains a calculation of grid emission factor which follows the guidance of the “Tool to calculate the emission factor of an electricity system v2” namely application of Table 1.4 of Chapter 1</p>	<p><input checked="" type="checkbox"/></p> <p>Clarified. "CKS 78" referred in the specification “SASOL Illuminating Paraffin” has been confirmed to be the standard for Illuminating Paraffin (attached) in accordance with the report about Oil Products in South Africa <a href="http://eneken.iecej.or.jp/data/pdf/422.pdf">http://eneken.iecej.or.jp/data/pdf/422.pdf</a> (written in Japanese)</p> <p>For fossil fuels, the default specified in 2006 IPCC Guidelines are planned to be applied due to no national value. This still complies with the methodology.</p>

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		of Vol 2 of the IPCC 2006 Guidelines lower bound of the 95% confidence interval. This approach is also recommended by Eskom.	
<p><b><u>Clarification Request No. 16.</u></b></p> <p>Please clarify how the quantity of fossil fuel consumed both in the baseline scenario and in the project will be determined and how the value applied was estimated in conservative manner.</p> <p>Please clarify how the consumption of fossil fuel for cooking can be separately determined or monitored.</p>	E.6.3.2.2.	<p>In both cases, these quantities are measured ex-post by virtue of random sampling each year of homes not using the WB, and homes using the WB. This process is described in detail in the Monitoring Plan sections of the POADD version 2.</p> <p>With regard to separate determination of cooking fuel advice from an expert 3rd party statistician is that separate determination is less valid than measurement of household energy as a whole, so capturing the ancillary as well as direct effects of the WB.</p>	<p><input checked="" type="checkbox"/></p> <p>The survey has been planned including utilizing independent consultant to make the measurement verifiable. While the details about the traceability as well as the verifiability will be one of the key issues at the verifications, the current description has been accepted as the plan at the validation stage.</p>
<p><b><u>Clarification Request No. 17.</u></b></p> <p>Please clarify how the number of households which keep using WB will be determined in the conservative manner. based on the number sold? or with ex-post sampling survey?</p>	E.6.3.2.4.	<p>The number sold is reduced by the drop-off fraction found in random sampling survey. The rate of drop-off of usage is monitored ex-post by way of random sampling. Conservativeness is assured by virtue of assumption that any bag which is not in use, was never in use throughout the relevant monitoring period (ie the full year monitored), while in fact it is likely it was in use for some part of the year or indeed in use somewhere else having become untraceable.</p>	<p><input checked="" type="checkbox"/></p> <p>Clarified. Because drop-off has been considered in the planning of the survey.</p>
<p><b><u>Clarification Request No. 18.</u></b></p> <p>Please clarify how the value, annual electricity consumption both in the baseline scenario and in the project will be determined or monitored and how the value applied was estimated in conservative manner.</p> <p>Please clarify how the consumption of elec-</p>	E.6.3.2.5.	<p>In both cases, these quantities are measured ex-post by virtue of random sampling each year of homes not using the WB, and homes using the WB. This process is described in detail in the Monitoring Plan sections of the POADD version 2.</p> <p>With regard to separate determination of cooking fuel advice from an expert 3rd party statistician is that separate determination is less valid than measurement of</p>	<p><input checked="" type="checkbox"/></p> <p>As mentioned above, the survey has been planned including utilizing independent consultant to make the measurement verifiable. While the details about the traceability as well as the</p>

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tricity for cooking can be separately determined or monitored.		household energy as a whole, so capturing the ancillary as well as direct effects of the WB.	verifiability will be one of the key issues at the verifications, the current description has been accepted as the plan at the validation stage.
<b><u>Corrective Action Request No.14.</u></b> Please indicate how the electricity grid emission factor would be calculated. Whether it would be fixed ex-ante or updated ex-post? And please submit the calculations in the spreadsheet.	E.6.3.2.7.	The CO2 emission factor for grid displacement is calculated ex-ante. The factor is calculated by first assessing the grid operating and build margins, and then calculating a combined margin. This is done following the procedure prescribed in the "Tool for calculation of the emission factor of an electricity system" version 2. The calculations are provided as a supporting spreadsheet document < WB10-conf-GRID CALC SA 091125>	<input checked="" type="checkbox"/> The grid emission factor is determined ex-ante. The latest database by Eskom was used. The lowest values of NCV and CO2 emission factor of 95% confidence interval were correctly used to recalculate EF <sub>OM</sub> conservatively to comply with the "Tool for calculation of the emission factor of an electricity system" version 2.
<b><u>Corrective Action Request No.15.</u></b> Please use the table format as provided in section E.7.1 of the PoA-DD template and please complete each table including method of monitoring, QA/QC procedures.	E.7.1.1.	This has been done in version 2 of the POADD and CPADD.	<input checked="" type="checkbox"/> Corrected to use the template specified in the PoA-DD template.
<b><u>Corrective Action Request No.16.</u></b> Please state the monitoring plan for a SSC-CPA in details including the operational and management structure.	E.7.2.1.	Each CPA is subject to annual monitoring by way of a survey undertaken each year which determines national values for the following parameters: <ul style="list-style-type: none"> <li>Household energy consumption (both baseline and project values), both electricity and fossil fuels</li> <li>Relative numbers of electricity-using and fossil-fuel-using Wonderbag users</li> <li>Fraction of Wonderbags sold, which have dropped</li> </ul>	<input checked="" type="checkbox"/> The overall structure of operating and managing the projects is much more specifically described at A.4.4.1. in PDD.

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		<p>out of use (the “Drop-off Fraction”) with respect both to fossil users and electricity users</p> <p>The annual monitoring survey shall determine these parameter values for application to all active CPAs with respect to a specific monitoring and verification period which is identical for all CPAs. The sampling procedure may either consist of a single-stage process which randomly samples households across all the CPAs, or it may consist of a two-stage process whereby a sample of CPAs are randomly selected and within these, a random selection is made of households. Both procedures are statistically sound and either one may be adopted each year by the CME depending on practical feasibility and costs.</p> <p>Further details are provided in the POADD and CPADD.</p>	
<p><b><u>Corrective Action Request No.17.</u></b></p> <p>Please identify the date too, instead of “March 2009”</p>	E.8.1.2.	<p>The date is 30 March 2009. Please see &lt;WB2-Conf-KS-KT-30March09-pdf&gt;</p>	<p>☑</p> <p>Corrected in PoA-DD</p>
<p><b><u>Corrective Action Request No.18.</u></b></p> <p>Yes, the report of Kitchen Test 2009 is referred here.</p> <p>However the analysis is being elaborated. This section should be updated accordingly.</p>	F.3.1.	<p>The KT 2009 survey revealed that the WB saves approximately 700 kWh/year amongst cooks using electricity, and 100 litres/year kerosene amongst cooks using kerosene. Analysis of the data collected was undertaken by a statistics expert and is presented in &lt;WB4-Conf-KT2009Datsummary091020&gt; and &lt; WB3-Conf-DraftSurveyProtocol-AT-091019&gt; .</p>	<p>☑</p> <p>The statistical effectiveness of KT2009 has been endorsed by the expert (IRL #9)</p>
<p><b><u>Corrective Action Request No.19.</u></b></p> <p>No sampling plan is stated in this Annex 4. Before that, statistically sound information, e.g. the result of survey shall be provided in order to to justify the appropriateness of the</p>	F.4.1.	<p>The 2009 survey provided essential ground experience from which an effective sampling plan for monitoring purposes could be devised. This was undertaken by a statistics expert and is summarized in &lt;WB4-Conf-KT2009Datsummary091020&gt; and &lt; WB3-Conf-</p>	<p>☑</p> <p>The report issued by the expert of the statistics has been submitted. PoA-DD has been sufficiently revised ac-</p>

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sampling plan being provided. Please see CAR #5 at A.4.4.6.		DraftSurveyProtocol-AT-091019> .	cordingly.
<b><u>Corrective Action Request No.20.</u></b> How is it confirm that the approach of public communication (see first sentence of chapter D.2 in the PDD) is appropriate, taking into account that the project is for low income families that may have no access to a newspaper or may cannot read?		The PDD has been revised by adding a footnote with explanation that the communication with families with low income is ensured via the NGOs that are in contact with these families.	<input checked="" type="checkbox"/> The revised PoA-DD gives now comprehensive information about the approach how to reach low income families not having access to official information sources.
<b><u>Corrective Action Request No.21.</u></b> The applicability of the methodology AMS II C is not fully clear and transparently defined in the PoA DD however there are some justifications / explanations in the VR. Nevertheless is still not finally clear how the project complies with the applicability criteria of the methodology as in the meth it is stated "This methodology comprises activities that encourage the adoption of energy-efficient equipment/appliance (e.g., lamps, ballasts, refrigerators, motors, fans, air conditioners, pumping systems) at many sites." The project does not adopt any equipment/appliance that is –stand-alone - energy-efficient. It is correct that the system (cooking food) is more efficient in the project activity, but this seems not have been the intention of the methodology. The equipment itself is equipment for energy saving.		<p>The project clearly does adopt an appliance or system that is energy-efficient, because the energy input to the HRC system, is relatively less than the energy input compared to a conventional cooker system, for the same energy output.</p> <p>The applicability of AMS II.C. is due to the Heat Retention Cooker being an energy efficient device for cooking, used at many sites, just as for example the compact fluorescent lamp is an energy efficient device for lighting, used at many sites. In order for a CFL lamp to provide light using less energy than a conventional lamp, it is necessary that it is energized using electricity generated locally or in a power station. In the same way, the HRC depends on the food it cooks being energized from a heat source.</p> <p>Another cited example of an applicable energy efficient device is an electric pump. The reason it is more efficient could for the sake of illustration, be that a capacitor has been added. The capacitor would add to the</p>	Not closed, see CAR No. 25 below



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		<p>cost, and there is no reason for it to be built into the casing of the pump – the pump can remain unchanged, and the capacitor placed in a box supplied separately. This would qualify for AMS II.C in either case, as an efficient pumping system. Equally, the HRC can either be built into a cook-stove, or can be supplied separately, in both cases the technology for the efficient cooking system being identical.</p> <p>The reference in AMS II.C to “pumping systems” shows very clearly that the technology does not have to be in one box. A system for pumping includes pipework, energy sources such as diesel generators, electric motors, foot-treadles, paddles/turbines moved by flowing water, etc. Each of these components of the system are separate, and not in one box, and any one of these separate components could be the key to improved efficiency.</p>	
<p><b><u>Corrective Action Request No.22.</u></b></p> <p>There is no discussion in the PoA-DD related to para 17 of AMS II C version 13</p>		<p>AMS II.C para 17 stipulates certain requirements for cases where “.....the project activity involves the replacement of equipment...”. In this project activity, no equipment is replaced, and therefore the requirements of this clause are not applicable.</p>	<p>☑</p> <p>In chapter E.6.2 of the PoA-DD is clearly stated why leakage can be excluded.</p>
<p><b><u>Corrective Action Request No.23.</u></b></p> <p>In the GSP version of the DDs, bagasse and wood was being mentioned while in the final version of the DDs the same has been taken out without any CAR/CL addressed in the VR. Hence this change on the project definition is not transparently presented.</p>		<p>The CPADD v1 (GSP version) nowhere mentions wood or bagasse, nor does the final version. In terms of the project definition, it states:</p> <p><i>The predominant cooking fuels for low-income families in the area are electricity and paraffin. This CPA reduces the amount of fossil fuels used for cooking by low-income families. Through reduction in fossil fuel consumption, the project will decrease both green house gas emissions and cash expenditure on these cooking fuels.</i></p>	<p>☑</p> <p>The PP explanation in terms of definition of the baseline scenario is all-embracing to close this request.</p>



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		<p>The POADD v1 (GSP version) also states the project definition as follows:</p> <p><i>The predominant cooking fuels for low-income families in South Africa are electricity, paraffin and wood. In coal-mining regions, coal is also an important fuel. The programme described here reduces the amount of fossil fuels and electricity used for cooking by low-income families<sup>1</sup>. Through reduction in fossil fuel consumption, the programme will decrease both green house gas emissions and cash expenditure on these cooking fuels.</i></p> <p>Here the POADD mentions wood as one of the common cooking fuels in South Africa, in order to give background contextual information, but it does not attempt to include wood in the project definition.</p> <p>Under the heading: Contribution of the proposed SSC-PoA to sustainable development, sub-heading: Air Quality the POADD states that “<i>The Wonderbag improves air quality in the home, because less fuels such as paraffin (kerosene), wood, coal, LPG gas, paraffin gel, animal dung, or bagasse need to be burned for cooking. Wonderbag also reduces electricity use; as a result it prevents some of the devastating ambient air pollution associated with coal-burning power stations</i>”.</p> <p>This is provided as contextual information about the co-benefits of the project over and beyond atmospheric GHG reduction, which co-benefits are not relevant to project definition.</p> <p>In both cases, GSP version and final version, it is clear that the project definition is to reduce fossil fuel consumption, whether used in electricity generation, as coal, gas or paraffin in the kitchen.</p> <p>There is therefore no relevance to project definition and no relevance to CARs/CL in the VR.</p>	
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<p><b><u>Corrective Action Request No.24.</u></b></p> <p>Regarding monitoring, the clear and transparent information on the assumptions to be done in the surveys, the standard ways of measuring that will be used and the possible bias and how to deal with those is missing in all DDs.</p>		<p>The DDs are written to transparently and comprehensively follow all clauses of the methodology AMS II.C, including the clauses related to Monitoring.</p> <p>The methods used for measurement and assumptions of the surveys are clearly stated under the heading “Sampling Protocol” in section E.7.2 and in the “Parameters Monitored” Table in Annex 4 of the CPADD and in the equivalent Table in section E.7 of the POADD. For example:</p> <p><i>Wherever reasonably possible, sample sizes will be sufficient to ensure that the precision of the sample means are 90/10 or better, in which cases the sample means will be used to estimate emissions reductions. If such samples sizes are difficult to achieve in practice, a conservative 90% lower bound on emissions reductions will be used. This is the value for which there is 90% confidence that the true mean emission reduction is at least as large. To ensure a conservative result when converting energy measurement to annual energy values, the monitoring surveys will be carried out in weeks not containing holidays or feasts nor in unusually cold weather. Energy measurement will take place over a period of seven days in sampled households. Baseline measurements will take place in homes randomly picked from homes of equivalent socio-economic to neighbouring sampled project households.</i></p> <p>Examples from the tables:</p> <p><i>Survey of sample of Wonderbag users, together with detailed information specific to each parameter, such as: A. (Electricity consumption) Electrical energy consumption measured during annual monitoring survey, by virtue of readings of household KWhr meters. B (Drop-Off) Each home selected for sampling from the sales record will be visited and the number of homes in which the Wonderbag is not used will be counted. If the purchased Wonderbag has been moved to another address, this will be recorded in the interest of conservativeness as a Drop-Off, unless a further visit is made to the new address and the use of the Wonderbag is confirmed. C. other</i></p>	<p style="text-align: right;">☑</p> <p>Based on the “South Africa Wonderbag Sampling Protocol 2009 with summary of Analysis of 2009 samples and recommendations for Monitoring Plan” from the expert Dr. Amber Tomas, bith the generic CPA-DD and PoA-DD define comprehensively the approach on monitoring, survey and sampling. Hence, this request is closed.</p>
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# Validation Protocol CDM-PoA-DD

Programme (PoA) Title: Heat Retention Cooking in South Africa

Date of Completion: 03-11-2011

Number of Pages: 56



Industrie Service

		<p><i>examples as comprehensively set out in the DDs.</i></p> <p>Further the method adopted to provide clear an transparent information on assumptions and on ways of deal with possible bias is clearly stated for all relevant parameters in these tables and indeed is highly rigorous, as follows:</p> <p>A. <i>The monitoring survey will be conducted by a <u>credible independent consultant, and will follow the statistical method outline in section E.7.</u></i></p> <p>B. <i><u>Expert 3rd party input will be sought on statistical validity of the survey.</u></i></p> <p>The rigour and practical applicability of the monitoring plan and these statements is clearly proven and demonstrated by the expert statistical protocol which was provided for validation as an supporting document (and attached here again):</p> <p><i>South Africa Wonderbag Sampling Protocol</i>  <i>Dr Amber Tomas</i>  <i>Statistical Consultant</i>  <i>Oxford, UK</i></p> <p>The above independent expert from Oxford University Statistics department, defines all possible sources of bias and confirms that the methods used by the protocol deal with them.</p> <p>The rigour and practical applicability of the monitoring plan and the transparency of assumptions and methods of measurement is also proven and demonstrated by the expert consultant's report on the sampling survey of March 2009 which was provided for validation as a supporting document (and attached here again). This</p>	
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## Validation Protocol CDM-PoA-DD

Programme (PoA) Title: Heat Retention Cooking in South Africa

Date of Completion: 03-11-2011

Number of Pages: 56



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		acts as a template for the monitoring surveys, which are to be conducted by credible independent consultants and reviewed by expert statisticians. <i>Wonderbag Kitchen Survey &amp; Tests Report</i> <i>Scott Burnett, Molora Consulting, South Africa</i>	
<b><u>Corrective Action Request No.25.</u></b> Referring to CAR No. 21, there is a need to revise the PoA-DD accordingly in order to provide more transparency.		The PoA-DD has been revised to include detail as to the applicability of the methodology to the technology disseminated under the proposed PoA.	<input checked="" type="checkbox"/> The revised PoA-DD (IRL-No. 01) has been checked by the DOE. The applicable criteria are clearly indicated in the PoA-DD.

**Table 3 Unresolved Corrective Action and Clarification Requests (in case of denials)**


Clarifications and / or corrective action requests by validation team	Id. of CAR/CR	Explanation of Conclusion for Denial
-	-	-



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## **Annex 2**

### **Information Reference List**

Validation Report	14/11/2011	Validation of the CDM Project: "Heat Retention Cooking in South Africa" Information Reference List	Page 1 of 4	 Industrie Service
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Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer
1	17/08/2009 – 14/11/2011	<ul style="list-style-type: none"> <li>PoA-DD "Heat Retention Cooking in South Africa", Version 01, 17/08/2009</li> <li>Specific CPA-DD "Heat Retention Cooking in South Africa-CPA01", CPA-DD HRC SA SWGauteng 090824</li> <li>CPA-DD template, "Heat Retention Cooking in [xxxx]", CPA-DD HRC SA Template 090824</li> <li>Draft PoA-DD "Heat Retention Cooking in South Africa", Version 02, 17/08/2009 (21/10/2009)</li> <li>PoA-DD "Heat Retention Cooking in South Africa", Version 02, 12/04/2010</li> <li>Specific CPA-DD "Heat Retention Cooking in South Africa-CPA01", CPA-DD HRC SA SWGauteng v2 100412</li> <li>CPA-DD template, "Heat Retention Cooking in [xxxx]", CPA-DD HRC SA TEMPLATE v2 100412</li> <li>PoA-DD "Heat Retention Cooking in South Africa", Version 04, 04/02/2011</li> <li>Specific CPA-DD "Heat Retention Cooking in South Africa-CPA01", CPA-DD HRC SA SWGauteng v4 04/02/2011</li> <li>CPA-DD template, "Heat Retention Cooking in [xxxx]", CPA-DD HRC SA TEMPLATE v4 04/02/2011</li> <li>Specific CPA-DD "Heat Retention Cooking in South Africa-CPA01", CPA-DD HRC SA SWGauteng v4 04/02/2011</li> <li>PoA-DD "Heat Retention Cooking in South Africa", Version 05, 16/02/2011</li> <li>PoA-DD "Heat Retention Cooking in South Africa", Version 06, 18/03/2011</li> <li>PoA-DD "Heat Retention Cooking in South Africa", Version 07, 27/04/2011</li> <li>PoA-DD "Heat Retention Cooking in South Africa", Version 07, 10/06/2011</li> <li>Specific CPA-DD "Heat Retention Cooking in South Africa-CPA01", CPA-DD HRC SA SWGauteng v5 16/02/2011</li> <li>CPA-DD template, "Heat Retention Cooking in [xxxx]", CPA-DD HRC SA TEMPLATE v5 16/02/2011</li> <li>PoA-DD "Heat Retention Cooking in South Africa", Version 08, 26/07/2011</li> <li>Specific CPA-DD "Heat Retention Cooking in South Africa-CPA01", CPA-DD HRC SA SWGauteng Version 8 26/07/2011</li> <li>CPA-DD template, "Heat Retention Cooking in [xxxx]", CPA-DD HRC SA TEMPLATE v8 26/07/2011</li> <li>PoA-DD "Heat Retention Cooking in South Africa", Version 09, 24/08/2011</li> <li>Specific CPA-DD "Heat Retention Cooking in South Africa-CPA01", CPA-DD HRC SA SWGauteng Version 09 24/08/2011</li> <li>CPA-DD template, "Heat Retention Cooking in [xxxx]", CPA-DD HRC SA TEMPLATE v9 24/08/2011</li> <li>Letter of Early CPAs including this CPA submitted to UNFCCC secretariat on 29<sup>th</sup> Jan. 2010 to comply with the paragraph 72 of EB47 report.</li> </ul>	J.P.Morgan Ventures Energy Corporation

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Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer																						
		<ul style="list-style-type: none"><li>PoA-DD “Heat Retention Cooking in South Africa””, Version 10, 12/11/2011</li><li>CPA-DD template, “Heat Retention Cooking in [xxxx]”, CPA-DD HRC SA TEMPLATE v10, 01/11/2011</li></ul>																							
2		<ul style="list-style-type: none"><li>The applied methodology, AMS-II.C. : Demand-side energy efficiency activities for specific technologies, version 13</li><li>General guidance to SSC CDM Methodologies, Version 16.0(EB59)</li><li>Information on additionality (Attachment A to Appendix B of 4/CMP.1 Annex II)</li><li>Acronyms, Abbreviations and Units of Measure (Attachment B to Appendix B of 4/CMP.1 Annex II)</li><li>Tool for the demonstration and assessment of additionality, version 05.2</li><li>Guidelines for demonstrating additionality of microscale project activities, Version 02, (EB60, Annex25)</li><li>PoA Design Document Form (CDM-PoA-DD) Version 01.0, (EB33, Annex41)</li><li>CDM Glossary Version 05 (EB47,</li><li>CDM Validation and Verification Manual, version 01.2(EB55)</li></ul>	UNFCCC																						
3		Participant list of on-site interviews	TÜV SÜD																						
4		<p>The 1<sup>st</sup> on-site interviews conducted by TÜV SÜD on 20-23/10/2009.</p> <p><b>Validation Team:</b></p> <p>Yutaka Yoshida, auditor, TÜV SÜD</p> <p>Cyprian Fusi, auditor, TÜV SÜD</p> <p><b>Interviewed Persons:</b></p> <table><tr><td>Adam Harvey</td><td>JP Morgan Climate Care(JPMCC) / JPMorgan Ventures Energy Corporation (JPMVEC)</td></tr><tr><td>Sarah Collins</td><td>Wonderbag Project Owner, Natural Balance (Pty) Ltd.</td></tr><tr><td>Scott Burnett</td><td>Molara Consulting, Wonderbag Project Manager, Natural Balance (Pty) Ltd.</td></tr><tr><td>Charmain Lines</td><td>Wonderbag Communications, Natural Balance (Pty) Ltd.</td></tr><tr><td>Julia Mepha</td><td>Wonderbag Outreach Team, Natural Balance (Pty) Ltd.</td></tr><tr><td>Moshy Mathe</td><td>Wonderbag Manufacturer</td></tr><tr><td>Zandile Maubiko</td><td>Operator Manager, Natural Balance (Pty) Ltd.</td></tr><tr><td>Mocketsi Komone</td><td>TBtF Coordinator</td></tr><tr><td>Fisokwakhe</td><td>Agent / End User</td></tr><tr><td>Myende</td><td></td></tr><tr><td>Donna Mirza</td><td>Regional Manager Cape Town</td></tr></table>	Adam Harvey	JP Morgan Climate Care(JPMCC) / JPMorgan Ventures Energy Corporation (JPMVEC)	Sarah Collins	Wonderbag Project Owner, Natural Balance (Pty) Ltd.	Scott Burnett	Molara Consulting, Wonderbag Project Manager, Natural Balance (Pty) Ltd.	Charmain Lines	Wonderbag Communications, Natural Balance (Pty) Ltd.	Julia Mepha	Wonderbag Outreach Team, Natural Balance (Pty) Ltd.	Moshy Mathe	Wonderbag Manufacturer	Zandile Maubiko	Operator Manager, Natural Balance (Pty) Ltd.	Mocketsi Komone	TBtF Coordinator	Fisokwakhe	Agent / End User	Myende		Donna Mirza	Regional Manager Cape Town	
Adam Harvey	JP Morgan Climate Care(JPMCC) / JPMorgan Ventures Energy Corporation (JPMVEC)																								
Sarah Collins	Wonderbag Project Owner, Natural Balance (Pty) Ltd.																								
Scott Burnett	Molara Consulting, Wonderbag Project Manager, Natural Balance (Pty) Ltd.																								
Charmain Lines	Wonderbag Communications, Natural Balance (Pty) Ltd.																								
Julia Mepha	Wonderbag Outreach Team, Natural Balance (Pty) Ltd.																								
Moshy Mathe	Wonderbag Manufacturer																								
Zandile Maubiko	Operator Manager, Natural Balance (Pty) Ltd.																								
Mocketsi Komone	TBtF Coordinator																								
Fisokwakhe	Agent / End User																								
Myende																									
Donna Mirza	Regional Manager Cape Town																								



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Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer
		Juliet Wells      Agent / End User Innocent Ncube      Agent / End User Saskia Schelling      Agent / End User	
5		<ul style="list-style-type: none"> <li>• Draft general guidelines on sampling and surveys (Annex 27, EB47)</li> <li>• Procedures for review of erroneous inclusion of a CPA, Version 03.1 (Annex 22, EB61)</li> <li>• Procedures for registration of a programme of activities as a single CDM project activity and issuance of CERs for a PoA, Version 04.1 (Annex 38, EB55)</li> </ul>	UNFCCC
6		Report on the Wonderbag “ <b>Kitchen Test</b> ” 2009, Duration: 1 February – 16 March 2009	Mr.Scott Burnett Total Programme Management Consultant
7	19/12/2008	ERPA between Natural Balance (Pty) Ltd, and J.P.Morgan Ventures Energy Corporation	NB & JPMVEC
8	13/08/2009	Report of Wonderbag National Stakeholder Consultation Event, Sandton including Q&A	Natural Balance (Pty) Ltd
9	19/10/2009	<ul style="list-style-type: none"> <li>• Expert’s opinion on the Kitchen Test 2009 and recommendations for Monitoring Plan, Draft 19 October 2009</li> <li>• Comparison among March Samples, October Samples and Combined Samples</li> <li>• CPA Samplimg, “TWO-STAGE SAMPLING”</li> </ul>	Dr Amber Tomas Statistical Consultant, Oxford, UK
10	na	Contract template of the assignment of WOT manager	
11	21/04/2006	<ul style="list-style-type: none"> <li>• EIA regulation, “REGULATIONS IN TERMS OF CHAPTER 5 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (Act No. 107 of 1998)”</li> <li>• Listing Notice about EIA, “LIST OF ACTIVITIES AND COMPETENT AUTHORITIES IDENTIFIED IN TERMS OF SECTIONS 24 AND 24D OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998”</li> </ul>	The Minister of Environmental Affairs and Tourism
12	1998	Life Cycle Environmental Aspects of Expanded Polystyrene(EPS), “THE ENVIRONMENTAL TRUTH” The study was carried in 1998 by PRC-Bouwcentrum, Netherlands in accordance ISO 14040	PRC-Bouwcentrum, Netherlands
13	25/11/2009 04/12/2009	Calculation Spreadsheet of Grid Emission factor ER Calculation Spreadsheet	Mr.Scott Burnett Total Programme Management Consultant
14	unknown	Specification of Illuminating Paraffin issued by Sasol referring the compliance with CKS 78, Boiling Point 150-280 °C	Sasol

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Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer
15	07/2002	Report of Petro-products in South Africa (written in Japanese) <a href="http://eneken.ieej.or.jp/data/pdf/422.pdf">http://eneken.ieej.or.jp/data/pdf/422.pdf</a> referring CKS 78(1972) as the standard for Illuminating Kerosene issued by IEE Japan <a href="http://eneken.ieej.or.jp/en/">http://eneken.ieej.or.jp/en/</a>	The Institute of Energy Economics, Japan
16	unknown	Standardization for the oil and gas industry referring SANS 1913, Kerosenne for domestic heating and cooking WEB page stating SANS 1913:2008	South African Bureau of standards (SABS)
17	21/10/2009	Letter of Declination from Industrial Development Corporation referring 3 reasons including one requesting the completion of validation process and positive feedback from the local DNA	Industrial Development Corporation (IDC)
18	17/10/2008	Letter of Declination from Property & Financial Services	Property & Financial Services (PFS)
19	20/06/2009	Wonderbag project implementation schedule	
20	10/11/2009	MoC	JPMVE, Natural Balance
21	29/01/2010	Letter of the starting date of 13 CPAs	JPMVE
22	unknown	Website of U.S. energy Information Administration, Independent Statics and Analysis <a href="http://www.eia.doe.gov/cabs/South_Africa/Electricity.html">http://www.eia.doe.gov/cabs/South_Africa/Electricity.html</a>	U.S. energy Information Administration
23	Unknown (in 2009)	Annual Report 2008 of Eskom stating 1.2 kgCO2/kWh referring CDM approved consolidated methodology 0002 <a href="http://www.eskom.co.za/annreport08/ar_2008/downloads.htm">http://www.eskom.co.za/annreport08/ar_2008/downloads.htm</a>	Eskom
24	24/11/2008	<a href="#">Government Gazette No. 34 of 2008: National Energy Act, 2008</a>	South African National Energy Development Institute
25	Unknown (latest)	The articles about Coal in South Africa <a href="http://www.dme.gov.za/energy/coal.stm">http://www.dme.gov.za/energy/coal.stm</a>	Department; Mineral and Energy, Republic of South Africa
26	31/05/2010, 02/03/2011	South Africa's Letter of Approval, issued on 31/05/2010 by Energy Department	Energy Department(SA) / DECC(UK)

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Ref. No.	Issuance and/or submission date(dd/mm/yyyy)	Title/Type of Document	Author/Editor/ Issuer
		UK's Letter of Approval, issued on 2 March 2011 by DECC	
27	2006	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2 “Energy”,	IPCC
28	August 2007	The article titled “Energy poverty and cooking energy requirements:The forgotten issue in South African energy policy?” in Journal of Energy in Southern Africa • Vol 18 No 3 • August 2007	
29	November 2003	WHITE PAPER ON RENEWABLE ENERGY	DEPARTMENT OF MINERALS AND ENERGY, SOUTH AFRICA



Industrie Service

## **Annex 3**

### **Appointment Certificates**



Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr Fusi, Cyprian, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	22.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		22.03.11	22.03.11			

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	22.03.11		12.04.11		
Financial Expertise					
Date					

Qualification in technical areas	
Technical Area	Date
1.2_Energy generation from renewable energy source	07.04.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0004/00.

Date	Signature
12.04.11	<i>Thomas Klein</i>





Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr Kanda, Sandeep, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	29.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		29.03.11	29.03.11	29.03.11	29.03.11	

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	29.03.11				
Financial Expertise					
Date	29.03.11				

Qualification in technical areas	
Technical Area	Date
1.1_4.10_Thermal energy generation...	29.03.11
1.2_Energy generation from renewable energy source	29.03.11
2.2_Heat distribution	29.03.11
3.1_Energy demand	29.03.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0031/00.

Date	Signature
29.03.11	



Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr Mitterwallner, Robert, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	23.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		23.03.11	23.03.11	23.03.11	23.03.11	

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	23.03.11		23.03.11		
Financial Expertise					
Date					

Qualification in technical areas	
Technical Area	Date
1.2_Energy generation from renewable energy source	23.03.11
4.1_Cement sector	23.03.11
4.3_Iron and steel sector	23.03.11
13.1_Waste handling and disposal	23.03.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0011/00.

Date	Signature
23.03.11	<i>Thomas Klein</i>





Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr Yoshida, Yutaka, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	25.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		25.03.11	25.03.11	25.03.11		

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	25.03.11				
Financial Expertise					
Date					

Qualification in technical areas	
Technical Area	Date
3.1_Energy demand	25.03.11
5.1_4.9_11.1_12.1_Chemical process industries	25.03.11
11.2_GHG capture and destruction	25.03.11
1.1_4.10_Thermal energy generation...	12.10.11
1.2_Energy generation from renewable energy source	12.10.11
13.1_Waste handling and disposal	12.10.11
2.1_Electricity distribution	12.10.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0026/02.

Date	Signature
25.03.11	
12.10.11	



Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr Agarwal, Nikunj, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	22.03.11					

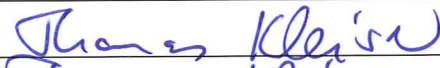

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		22.03.11	22.03.11	22.03.11	22.03.11	

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	22.03.11				
Financial Expertise					
Date	29.03.11				

Qualification in technical areas	
Technical Area	Date
1.2_Energy generation from renewable energy source	22.03.11
13.1_Waste handling and disposal	12.04.11
3.1_Energy demand	27.04.11
13.2_15.2_Animal waste management	21.07.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH. In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0001/05.

Date	Signature
27.04.11	
21.07.11	





Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr Castro, Javier, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	22.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		22.03.11	22.03.11	22.03.11	22.03.11	

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	22.03.11	22.03.11			
Financial Expertise					
Date	22.03.11				

Qualification in technical areas	
Technical Area	Date
1.2_Energy generation from renewable energy source	22.03.11
5.1_4.9_11.1_12.1_Chemical process industries	22.03.11
13.1_Waste handling and disposal	22.03.11
13.2_15.2_Animal waste management	22.03.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0003/00.

Date	Signature
22.03.11	<i>Thomas Klein</i>



Industrie Service

# CERTIFICATE OF APPOINTMENT

Ms Zhang, Cuiyun (Rachel), fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	30.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		30.03.11	30.03.11	30.03.11	30.03.11	

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	30.03.11				30.03.11
Financial Expertise					
Date					

Qualification in technical areas	
Technical Area	Date
1.2_Energy generation from renewable energy source	30.03.11
13.1_Waste handling and disposal	30.03.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0033/02.

Date	Signature
30.03.11	
14.09.11	





Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr Kleiser, Thomas, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	25.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		25.03.11	25.03.11	25.03.11	25.03.11	

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	25.03.11				
Financial Expertise					
Date	25.03.11				

Qualification in technical areas	
Technical Area	Date
1.1_4.10_Thermal energy generation...	25.03.11
1.2_Energy generation from renewable energy source	25.03.11
4.1_Cement sector	25.03.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0027/00.

Date	Signature
25.03.11	