

TITLE OF THE MICRO-PROGRAMME: African Biomass Energy Conservation POA

**ANNEX AO – THE GOLD STANDARD MICRO-PROGRAMME ACTIVITY DESIGN
DOCUMENT TEMPLATE (VPA-DD)**

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SECTION A. General description of micro-programme activity (VPA)

A.1. Title of the micro-scale VPA:

GS 2446 – GS 1265 – African Biomass Energy Conservation PoA – Malawi Biomass Conservation (4).
February 9, 2015, Version 6.

A.2. Description of the micro-scale VPA:

The micro-scale voluntary project activity (VPA), over an initial 7 year period, aims to disseminate over 8,000 improved cookstoves (i.e. the technology) that are more efficient and use less wood for household cooking and heating than the traditional stoves; and to promote improved kitchen and firewood management practices e.g. use of less firewood, use of dry firewood, using a pot lid while cooking and soaking legumes before cooking (i.e. practices) to households in the Northern, Central and Southern Districts of Malawi. The improved technology and practices are intended to replace less efficient technologies and practices and result in biomass conservation and a reduction of greenhouse gas emissions into the atmosphere from the burning of solid biomass.



*Chitetezo Mbaula Portable Ceramic Stove (PCS),
A locally produced improved stove to be disseminated under the VPA.*

Ancillary benefits include reduced smoke during cooking, which reduces exposure to health damaging pollutants and reduced time and effort procuring woodfuel.¹ The stoves are attractive to end-users and can result in quicker cooking times. The stoves are locally made using local materials wherever possible, resulting in local income generation and the acquisition of new skills for local people.

A.3. Entity/individual responsible for the micro-scale VPA:

Hestian Innovation Ltd. (Hestian) is the project developer.

¹ Woodfuel is used to mean all fuels originating from woody biomass, including charcoal, in distinction from firewood or fuelwood, which are understood to mean wood in its original composition.

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A.4. Technical description of the micro-scale VPA:

A.4.1. Identification of the micro--scale VPA:

>>

A.4.1.1. Host Party:

Republic of Malawi – Eastern Africa.

A.4.1.2. Geographic reference or other means of identification allowing the unique identification of the micro--scale VPA (maximum one page):



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GPS coordinates for Malawi are 13 30 S, 34 00 E
(http://www.indexmundi.com/malawi/geographic_coordinates.html).

Malawi is a landlocked country which shares its northwest border with the Republic of Zambia, northeast border with the United Republic of Tanzania, and its borders at east, south and west with the Republic of Mozambique.

A.4.2. Duration of the micro--scale VPA:

A.4.2.1. Starting date of the micro--scale VPA:

December 7, 2012

PoA and VPA level stakeholder consultation meetings have been held since 2008 on the promotion of the technology and practices. The stakeholder consultation process is continuous. PoA level stakeholder consultation was conducted on July 23, 2012 in Kigali, Rwanda. Malawi VPA level formal SCM was conducted October 17, 2012 (please refer to uploaded SCR) and there have also been meetings at village level (refer to reports of stoves open day and village meeting in November 2012 and August 2013, respectively).

A.4.2.2. Expected operational lifetime of the micro--scale VPA:

Expected operational lifetime of the VPA is 21 years (7 years, twice renewable).

The ex-ante average lifespan of the technology is 47 months; therefore, technologies disseminated in years 1, 2 and 3 of the project will not be generating VERs throughout the operational lifetime of the project. The project will continuously disseminate new technologies throughout its operational lifetime in order to reach the VPA upper limit when older technologies expire.

A.4.3. Choice of the crediting period and related information:

Renewable crediting period

A.4.3.1. Starting date of the crediting period:

March 1, 2013

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A.4.3.2. Length of the crediting period, first crediting period if the choice is renewable
CP:

First crediting period March 1, 2013 to February 29, 2020.

It is noted that the duration of crediting period of any VPA shall be limited to the end date of the PoA regardless of when the VPA was added.

A.4.4. Estimated amount of emission reductions over the chosen crediting period:

The target number of VERs for the VPA is the upper limit, which as of October 2014 is 10,000 VERs per annum or 70,000 VERs over 7 years.

Please see below a summary of the ex-ante estimation of emission reductions broken down to each calendar year in the crediting period:

Year	Estimation of project activity emission (tCO ₂)	Estimation of baseline emissions (tCO ₂)	Estimation of overall emission reductions (tCO ₂)
March 1, 2013 - February 28, 2014	4,705	10,305	5,600
March 1, 2014 - February 28, 2015	13,368	23,368	10,000
March 1, 2015 - February 29, 2016	19,327	29,327	10,000
March 1, 2016 - February 28, 2017	32,787	42,387	9,600
March 1, 2017 - February 28, 2018	42,258	52,258	10,000
March 1, 2018 - February 28, 2019	29,507	39,507	10,000
March 1, 2019 - February 29, 2020	38,316	48,316	10,000
Total (tCO₂)	180,268	245,468	65,200

A.4.5. Public funding of the VPA:

The project is to be funded privately. Please see ODA declaration in Annex 2.

>> *Please refer to the ODA declaration form (Annex D)*

A.4.6. Confirmation that micro--scale VPA is neither registered as an individual GS project activity or with any other standard or is part of another Registered PoA:

Hestian as the coordinating/managing entity hereby confirms that the VPA is neither registered as a GS project nor with any other standard nor is part of another registered PoA.

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SECTION B. Eligibility of micro--scale VPA and Estimation of emissions reductions

B.1. Title and reference of the Registered PoA to which micro--scale VPA is added; title of baseline and monitoring methodology applicable to the VPA:

The title of the PoA is GS 1265 - African Biomass Energy Conservation Programme.

The methodology for both the baseline and for monitoring, applicable to this VPA, is the Gold Standard methodology of *Technologies and Practices to Displace Decentralised Thermal Energy Consumption (11/04/2011)*, as the VPA meets the following methodological criteria as per PoA-DD item D.1.1:

<p>1. The project boundary can be clearly identified, and the technologies counted in the project are not included in another voluntary market or CDM project activity (i.e. no double counting takes place).</p>	<p>The VPA boundary is the country of Malawi. The CME already has a registered Gold Standard project in Malawi (GS613) and to its knowledge is the only registered project with verified emission reductions. VPA stoves bear unique serial numbers which are recorded on the ER contracts and in separate electronic total sales record so as to prevent double counting.</p>
<p>2. The technologies each have continuous useful energy outputs of less than 150kW per unit (defined as total energy delivered usefully from start to end of operation of a unit divided by time of operation).</p>	<p>This criterion is met. Project stoves have continuous useful energy outputs of less than 150kW per unit.</p>
<p>3. Where possible the POA will have a mechanism in place to encourage the removal of the old technology.</p>	<p>Adoption of more than one project stove will be encouraged to minimise use of the old technology.</p>
<p>4. The project proponent will clearly communicate to all project participants the entity that is claiming ownership rights of and selling the emission reductions resulting from the project activity.</p>	<p>This is achieved through ER contracts and a user manual which explains the project and the transfer of rights to emission reductions to the end-user of the stove.</p>

During the course of the project the methodology may be revised with more updated methodologies and, in such a case, a request for revision will be made to the Gold Standard.

B.2. Justification of why the micro--scale VPA is eligible to be included in the Registered PoA:

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As per PoA-DD A.4.2.1, the improved household stoves – specifically the Chitetezo Mbaula which is disseminated under the VPA – reduce fuel consumption by improved combustion and improved heat transfer. The stoves raise the cooking pot to the hottest point above the flame. The improved household cookstoves target predominantly low-income households using non-renewable biomass energy on traditional/unimproved/low-efficiency stoves.

User manuals have also been designed for distribution with each Chitetezo Mbaula stove disseminated, educating users on good firewood and kitchen management practices to complement the use of an improved cook stove:



GS 2446 – Malawi Biomass Conservation (4) is suitable for inclusion in the African Biomass Energy Conservation Programme as Malawi fits into the criteria of an LDC and where biomass meets 93% of household and industrial energy needs.²

Current solid biomass supply does not adequately meet demand. Further, Malawi is vulnerable to

² Wood (biomass) is the dominant household fuel accounting for 98% in rural and 53% in urban areas on average. Rural areas tend to be more dependent on wood, and urban areas on charcoal. (Source: Millennium Challenge Corporation Report 2010, cited in Malawi State of Environment and Outlook Report 2010).

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other challenges which affect its energy sector such as low purchasing power, adverse impacts of Indoor Air Pollution on women and children, and land degradation cause from overharvesting of wood.

The use of efficient stoves is one of the key components of Malawi’s Biomass Energy Strategy; and the positive effects of the use of improved cookstoves on the physical environment and economy of Malawi contributes to the realisation of goals and objectives outlined in Malawi’s Poverty Reduction Strategy Paper, Growth and Development Strategy, Biodiversity Strategy and Action Plan, and the National Environmental Policy. In addition, in mid-2012 Malawi signed on as a national partner to the Global Alliance for Clean Cookstoves and on January 10, 2013, Her Excellency Joyce Banda, President of Malawi, announced a target of 2 million clean and efficient cookstoves in the country by 2020.

The project promotes the adoption of a second stove per household to discourage occasional use of the old stove (i.e. the 3-stone fire) and to facilitate ease of replacement should one of the stoves become damaged or worn out. A second stove is of particular benefit to households with many people as there seems to be a positive relationship between the number of people in household and fuel consumption. Stove adopters are encouraged to purchase 2 stoves at the same time while stove promoters of PCS are encouraged to promote at a village level the adoption of 2 stoves.

Further confirmation that VPA meets eligibility criteria based on EB 65 Report, Annex 3 – Standard for Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies for Programme of Activities (Version 01.0) Items 13-15, Pages 3-4 (as per A.4.2.1 of the PoA-DD):

Eligibility Criteria	Summary of VPA Compliance
<p>a) The geographical boundaries of the technology dissemination and training activities of the VPA are consistent with the geographical boundaries set in the PoA.</p>	<p>The technologies disseminated and training activities of the VPA are consisted with the geographical boundaries set in the PoA – i.e. the country of Malawi, a PoA country. The project continues to primarily target firewood users, even in peri-urban and urban areas. As per the 2011 Welfare Monitoring Survey conducted by the National Statistics Office based on a random sample that covered 14,000 households drawn from all the Districts of the country, the vast majority of households use firewood as their main source of energy (88%), with others using charcoal (7%), electricity (3%) and very few use paraffin, gas and other sources. Even in urban areas more households predominantly use firewood (44%) than charcoal (41%) as their source of energy. This PoA specifically targets firewood users, which represent over 90% of rural households and more than half of urban households, that don't use electricity. Areas such as urban Blantyre, for</p>

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	example, where households predominantly use charcoal, are not as an important market for this VPA. Using another example, household heads that do not have any formal education use firewood as their main source of energy almost entirely (97.3%) - they are among this VPA's target market.
b) Conditions that avoid double counting of emission reductions like unique identifications of product and end-user locations.	The VPA employs the use of unique serial / reference numbers for each stove sold. This number is used for the individual ER contract and corresponds with the household's entry into the total sales record, and is used wherever possible to avoid double counting of emission reductions.
c) The specifications of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications;	There are stove specifications which are used by all production groups and stoves are inspected before retail; the stove type has been tested to determine its ability to effectively serve users (in this case households predominantly using firewood).
d) Conditions to check the start date of the VPAs through documentary evidence.	Conditions to check the start date of the VPA through documentary evidence are in place in the form of a total sales record which includes date of purchase / commission of technology, name of customer, customer contacts details as available, technology identification).
e) Conditions that ensure compliance with applicability and other requirements of methodology or multiple methodologies applied by the PoA.	The VPA complies with PoA methodology Technologies and Practices to Displace Decentralized Thermal Energy Consumption - 11/04/2011).
f) The conditions that ensure that VPAs meet the requirements pertaining to the demonstration of Additionality.	The VPA meets the requirements pertaining to the demonstration of Additionality: VPA is implemented in Malawi which is an LDC.
g) The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis.	The PoA-specific requirements stipulated by the CME including any conditions related to undertaking local stakeholder consultations and environmental impact analysis are taken into account for the VPA (please see local stakeholder consultation report and related documents uploaded). The VPA does not require an EIA in Malawi as it is not included in list of projects for which environmental impact assessment is mandatory, as per Section 24(1) of the Environmental Management Act of Malawi.

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h) Conditions to provide an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance are in place.	There is no public funding from Annex I countries of the UNFCCC to implement the POA; no ODA from Annex 1 countries will be diverted to the implementation of the VPA (please refer to ODA declaration in Annex 2).
i) Where applicable, target group (e.g. domestic/commercial/industrial, rural/urban, grid connected/off-grid) and distribution mechanisms (e.g. direct installation).	The VPA targets domestic cookstove users using solid biomass is the primary fuel, with initial emphasis on low income rural communities. Distribution of stoves may be done with direct sale to end users or in bulk through retail outlets, promotional events, etc.
j) Where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys.	Where applicable, the conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys are met (please see monitoring plan in section B.6.1).
k) Where applicable, the conditions that ensure that every VPA in aggregate meets the small-scale or microscale threshold criteria and remains within those thresholds throughout the crediting period of the VPA	The ER target for the VPA is the micro-scale threshold of 10,000 t/CO ₂ per annum.
l) Where applicable, the requirements for the debundling check, in case VPAs belong to small-scale (SSC) or microscale project categories.	This is noted but not does apply for the VPA as of October 2014.

The eligibility criteria are verifiable. In addition, revised IPCC GWPs are applied as per parameter table in section B.5.1 for CH₄, GWP100 applied 25 and 298 for N₂O.

B.3. Assessment and demonstration of additionality of the micro--scale VPA:

>> *(Please complete only the section applicable to the micro-scale activity below)*

B.3.1 Description of how the anthropogenic emissions of GHG by sources are reduced as per the eligibility criteria defined in the registered micro-programme (*when Additionality is demonstrated at the micro- programme level*):

The micro-scale VPA is located in Malawi, which is an LDC and LLDC. The project also meets other eligibility criteria: (i) it is micro-scale (i.e. <10kCO₂eq p.a.) and (ii) it is an end-use energy efficiency improvement activity.

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As project activity is seeking retroactive crediting, additionality will be demonstrated using the most up to date CDM Methodological Tool, *Tool for the demonstration and assessment of Additionality Version 07.0.0*; one of the Additionality tool options presented in section 2.3 of GS Toolkit V2.2, as follows:

(a) Identification of alternatives to the project activity:

Alternative 1 – No project activity, households continue to use unsustainably sourced woodfuel in inefficient open fires; continued environmental degradation from woodfuel harvest.

Alternative 2 – Short-lived donor/government funded stove projects. Risk that poor quality stoves may be disseminated, or that many projects will aim to issue a household with a stove but not take steps to monitor use or train households in improved firewood and kitchen management. The benefits of improved cookstoves on both supply and demand sides may be short-lived.

Legislation banning fuelwood collection is non-existent in Malawi; however, the country's energy and environment policies promote the use of improved cookstoves as interventions to mitigate environmental degradation and increase household resilience against climate change.

The adoption of improved cookstoves involves changing mind-sets from the age old practice of cooking on an open fire. The VPAs under GS 1265 aim for long-term promotion of improved cookstoves with attractive incentives to project implementers for continuous project monitoring, expansion and replication.

(b) Investment analysis to determine that the proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible

Barrier analysis conducted instead of investment analysis.

(c) Barriers analysis:

Investment barrier – The VPAs primarily target low-income households with limited purchasing power (73.9% in Malawi living on less than US\$1.25 per day³) for whom purchasing a cookstove [to use with woodfuel which they can often collect at no financial cost] at any price is not seen as a priority. Carbon finance also plays a key role in establishing a link between supply and demand since good producers are not necessarily good promoters/retailers. This requires some financial incentives which are not possible in the absence of the project.

Technological barrier – From the supply side, there is limited capacity to produce improved cookstoves or as the case with previously trained production groups in Malawi, they are unwilling to make the investment to produce unless they were assured of a market for their product.

Barrier due to prevailing practice – From the demand side, it takes time and effort to create a shift in practice at household level – to take a technological leap from three stone traditional cooking to using a stove at all – especially when the baseline is many times a scenario where households are using a 'free' stove (all they need is three stones or bricks) and a 'free' fuel (woodfuel collected at no financial cost).

³ United Nations Social Policy and Development Division: 2010 Report on the World Social Situation (Table II.3, page 22)

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Other barriers include limited skilled human resources in the cookstoves sector to organise and manage such a project, and the need for such persons to be well compensated for their time and effort.

(d) Common practice analysis:

The idea of a project promoting improved cookstoves is by no means new, and there are existing donor and/or government-funded cookstove promotion and research projects in Malawi e.g. the Programme for Basic Energy Conservation. While these have been – and continue to be – excellent initiatives, Hestian believes that the addition of a carbon finance component can lend to the sustainability of these projects, and strives to create sustainable development benefits for stove producers, promoters and end-users through its carbon financed cookstove projects.

In Malawi, the Hestian project was the first of its kind, and the decision to create VPAs for Malawi under the new micro-PoA was necessary to facilitate continued growth and progress as more project implementers come on board. The generation of carbon finance can create a continuous income stream for such people and create viable, sustainable and long-lasting project benefits for all involved.

As per item 7 of EB65 Report Annex 3 (Page 3), the PP asserts that the project activity would not occur in the absence of the VPA. Carbon financing has been a consideration since project inception. Production groups had previously been trained on stove production techniques and provided with production tools by various civil society organisations and government institutions; however, lacked access to markets and subsequently abandoned stove production. Carbon finance allows for bridging the market gap between supply and demand for improved cookstoves and allows producers and distributors to generate income through 'green' jobs.

B.3.2 Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered micro-scale project activity (*when Additionality is demonstrated at the activity level*):

N/A see B.3.1.

B.4. Description of the sources and gases included in the project boundary and proof that the micro--scale VPA is located within the geographical boundary of the registered PoA.

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	Source	Gas	Included?	Justification / Explanation
Baseline	Heat delivery, production of fuel, and transport of fuel	CO ₂	Yes	Important source of emissions
		CH ₄	Yes	Important source of emissions
		N ₂ O	Yes	Can be significant for some fuels
Project	Heat delivery, production of fuel, and transport of fuel	CO ₂	Yes	Important source of emissions
		CH ₄	Yes	Important source of emissions
		N ₂ O	Yes	Can be significant for some fuels

CO₂, CH₄ and N₂O occur in the baseline and project activities and are to be included in baseline and project emissions estimations.

The country Malawi is part of the ABEC PoA.

B.5. Emission reductions:

B.5.1. Data and parameters that are available at validation:

Data / Parameter:	EF _{b, CO₂} and EF _{p, CO₂}
Data unit:	tCO ₂ / t wood
Description:	CO ₂ emission factor arising from use of fuels in baseline and project scenarios
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Tables 1.2/1.4
Value applied:	1.7472 tCO ₂ /t wood (= 112.0 tCO ₂ /TJ * 0.0156 TJ/ t)
Justification of the choice of data or description of measurement methods and procedures actually applied :	Default IPCC values for wood / wood waste are applied for emission factors required to calculate CO ₂ emission reductions
Any comment:	EF's in baseline and project have the same value as the project reduces use of the same fuel.

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Data / Parameter:	$EF_{b, nonCO_2}$ and $EF_{p, nonCO_2}$
Data unit:	tCO ₂ / t wood
Description:	Non-CO ₂ emission factor arising from use of fuels in baseline and project scenarios
Source of data used:	2006 IPCC Guidelines for National Greenhouse Gas Inventories, Table 2.9 in Volume 2: Energy
Value applied:	0.5296 tCO ₂ /t wood [= (1.224 tCO ₂ /TJ * 0.0156 TJ/ t * 25) + (0.01125 tCO ₂ /TJ * 0.0156 TJ/ t * 298)]
Justification of the choice of data or description of measurement methods and procedures actually applied :	Default IPCC values for CH ₄ and N ₂ O emissions for wood / wood waste are applied. The following GWP ₁₀₀ are applied: 25 for CH ₄ , 298 for N ₂ O.
Any comment:	Both defaults are within a range and the mean of the range is taken as the default. Technical references are from studies in developing country contexts and are more up-to-date than other default values. EF's in baseline and project have the same value as the project reduces use of the same fuel.

Data / Parameter:	$\eta_{baseline, i, y}$
Data unit:	%
Description:	Thermal efficiency of the various baseline technologies
Source of data used:	GS methodology default, footnote 24 on page 18 of the methodology
Value applied:	10%
Justification of the choice of data or description of measurement methods and procedures actually applied :	10% thermal efficiency for primitive stoves (those without chimney and grate) such as the three stone fire which is primarily used by households in Malawi.
Any comment:	This parameter may be used for <i>suppressed demand</i> calculations.

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B.5.2. Ex-ante calculation of emission reductions:

The VPA targets low-income Malawian households. Almost all firewood users in Malawi (91%)⁴ use 3-stone stoves for domestic cooking and heating that are not fuel efficient, produce much smoke and are the source of many injuries and accidents. It is estimated that less than 0.5% of the population are using any sort of improved biomass stoves, and many households, particularly in rural areas, collect fuel for cooking at little or no financial cost.

The baseline scenario is defined as Malawian households that consume firewood for cooking and heating on three stove fires or other inefficient stoves such as traditional self-made wood stove, and whose basic energy needs are not being met. It is estimated that 97.4% of Malawian households use solid fuel as their primary source of energy (87.7% use firewood, 8.9% charcoal and 0.8% crop residue).⁵

Monitoring surveys will assess if this is the case in practice.

Project field tests conducted with customers of the portable ceramic stove (PCS, locally known as the Chitetezo Mbaula) consume approximately 4.63 kgs / HH / day or 1.69 tonnes / HH / year.

Project efficiency is 30.6%.⁶

From this single sample test we can calculate the baseline wood consumption by:

$$\text{FUEL}_{\text{baseline}} = \text{Efficiency}_{\text{Project}} / \text{Efficiency}_{\text{Baseline}} \times \text{FUEL}_{\text{project}}$$

The methodology allows for the use of a default value derived from the formula above, provided that the monitoring plan ensures that KPTs in the project situation are conducted to determine fuel consumed by retained baseline stoves.

Wood savings from switching from three stone fire to the Ceramic Stove is estimated at approximately 3.48 tonnes_{wood} / HH / year.

With fNRB of 81% in Malawi a PCS user saves approximately 6.7 tCO₂eq / HH / year.

Leakage is likely to be minimal as:

- the baseline and project fuel is woody biomass thus negating any possible use of lower emission fuels and any NRB saved is likely to be used to meet basic energy needs not met in the baseline,
- space heating is negligible or minimal in Malawian context,
- the VPA is a micro project so savings are unlikely to affect national fNRB.

⁴ Malawi Energy Policy 2003

⁵ Malawi Integrated Household Survey 2010-2011

⁶ CREEC Regional Stove Testing Centre Chitetezo Mbaula Water Boiling Test Report, August 2012

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The summarised statements on leakage above are based on analysis of the following potential sources of leakage as per the methodology:

- a) The displaced baseline technologies are reused outside the project boundary in place of lower emitting technology or in a manner suggesting more usage than would have occurred in the absence of the project.
 - This does not apply as the baseline in the case of Malawi is the three stone fire.
- b) The non-renewable biomass or fossil fuels saved under the project activity are used by non-project users who previously used lower emitting energy sources.
 - Does not apply. Solid biomass fuel is same in baseline and project scenarios.
- c) The project significantly impacts the NRB fraction within an area where other CDM or VER project activities account for NRB fraction in their baseline scenario.
 - Does not apply. The PP believes that for the moment, the small size of the VPA does not significantly impact NRB and to date, there are only 3 other registered projects in Malawi, all CDM.
- d) The project population compensates for loss of the space heating effect of inefficient technology by adopting some other form of heating or by retaining some use of inefficient technology.
 - Does not apply in Malawi's hot climate where space heating is not a significant use for any cookstoves.
- e) By virtue of promotion and marketing of a new technology with high efficiency, the project stimulates substitution within households who commonly used a technology with relatively lower emissions, in cases where such a trend is not eligible as an evolving baseline.
 - This is not applicable for Malawi where baseline is three stone fire.

B.5.3. Summary of the ex-ante estimation of emission reductions:

Year	Estimation of project activity emission (tCO ₂)	Estimation of baseline emissions (tCO ₂)	Estimation of overall emission reductions (tCO ₂)
March 1, 2013 - February 28, 2014	4,705	10,305	5,600
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Total (tCO₂)	180,268	245,468	65,200

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B.6. Application of the monitoring methodology and description of the monitoring plan:

The methodology for both the baseline and for monitoring, applicable to this VPA, is the Gold Standard methodology of *Technologies and Practices to Displace Decentralised Thermal Energy Consumption (11/04/2011)*.

This methodology was applied as the project meets the following criteria:

This methodology is applicable to programs or activities introducing technologies and/or practices that reduce or displace greenhouse gas (GHG) emissions from the thermal energy consumption of households and non-domestic premises such as residential institutional, industrial, or commercial facilities, e.g. the introduction of **improved biomass or fossil fuel cook stoves**.

The Gold Standard Methodology is applicable to the proposed POA because the following conditions of Section I of the methodology apply:

1. The project boundary can be clearly identified, and the technologies counted in the project are not included in another voluntary market or CDM project activity (i.e. no double counting takes place). Where similar activities with some of the target area are in common, mitigation measures / a survey mechanism will be implemented to mitigate double-counting.
2. The technologies each have continuous useful energy outputs of less than 150kW per unit (defined as total energy delivered usefully from start to end of operation of a unit divided by time of operation).
3. Where backup or auxiliary technologies are used in parallel with the improved technology, the POA will have a mechanism in place to encourage the removal of the old technology where possible. (Please see Section B.6.1 for details on how this will be monitored.)
4. The project proponent will clearly communicate to all project participants including producers and retailers of the improved technology that the entity that is claiming ownership rights of and selling the emission reductions resulting from the project activity, such as through emission reduction contracts which are currently in use. Project technology end users are to be notified that they cannot claim for emission reductions from the project.

Subsequent or emerging methodologies may be applied and an updated or revised monitoring plan will be submitted for verification.

B.6.1. Description of the monitoring plan:

Total sales records will be maintained in such a way as customers can be traced (i.e. name, address and telephone number, if available) documenting the date and place of sale and the number of stoves bought; as many as commensurate with representative sampling.

Mode of use is assumed to be domestic and can be verified in monitoring surveys. Should the surveys reveal that a significant amount of customers surveyed use the improved stoves for non-domestic

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purposes (e.g. commercial, institutional etc.), a new cluster is to be set up with accompanying monitoring activities (e.g. usage surveys, stove performance tests etc.).

Monitoring will be based on representational sampling. Should more VPAs be developed in other areas of the same country – or an adjacent country – which have very similar project and baseline scenarios these VPAs will provide legitimate samples for monitoring purposes for the cluster in question.⁷

The following monitoring tasks will be undertaken (periodically):

1. At least 30 households (HHs) will be sampled for monitoring surveys every year⁸,
2. At least 30 HHs will be sampled for usage rates every year (stoves aged 0-1 will be at least 6 months old on average, stoves aged 1-2 will be at least 18 months old on average, stoves aged 2-3 will be at least 30 months old on average etc.) with at least 30 samples from each age-group being credited (e.g. customers with stoves aged 0-1, customers with stoves aged 1-2 etc.)⁹,
3. Using the results of actual usage surveys, the mean number of months when only 50% of customers are using their stoves will be used to calculate (or estimate until enough historical data is available for calculation) the “average lifespan” of a stove, after which VERs will no longer be claimed. The ex-ante estimation of life-span for the clay stove, for example is 4 years. Ex-ante life-spans will be predicted for other technologies based on the best available data,
4. In cases where users retain the baseline technology as a backup or auxiliary technology in parallel with the improved technology, the extent to which the baseline technology is used will be quantitatively assessed through monitoring surveys and an appropriate and conservative adjustment factor will be applied.
5. At least 20 HHs will be sampled for stove performance tests, to estimate thermal efficiency, every 2 years to assess drop-off in stove performance over time. In years that the stove efficiency is not tested, performance will be estimated using the most appropriate statistics as recommended by statistical experts,
6. Project Field Tests may be conducted to assess Project fuel consumption but are not essential in each monitoring period given the single test approach, the monitoring of the stove efficiency over time and the routine assessment of leakage. However, PFTs may be conducted with a minimum sample of 20 households for ex-post estimation of suppressed demand and/or for inferring other conclusions to be presented in the monitoring report.
7. Leakage will be assessed every 2 years,
8. fNRB will be monitored over time and any new official fNRB can be applied if they are officially published or officially recognised by the host country,
9. Minimum service levels or sufficient service levels for household energy for a particular Country, Region or for or Sub-Saharan Africa will be applied for ex-ante suppressed demand as soon as reliable, recognised sources become available.

Project fuel tests are not expected to be conducted in this crediting period. Findings for project fuel

⁷ The similarity of the project and baseline scenarios and the associated legitimacy of sampling candidates from various VPAs to facilitate cost effective but comprehensive monitoring can be validated for forthcoming VPAs. Minimum of 30 in sample as per CDM EB 60 Report Annex 4 Page 6, Item 12.

⁸ The actual number of households to be sampled will depend on (i) the size of the population of device adopters for the VPA being validated / verified and (ii) the size of the population of other VPAs that are deemed to have similar project and baseline scenarios for the VPA being validated / verified.

⁹ Ibid.

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consumption based on 355 kitchen performance tests conducted by the PP in 2009 and 2011 for GS 613 will be applied for this VPA as household characteristics, geography and socioeconomics are very similar for Malawi projects.

Data / Parameter:	$B_{b,i,y}$
Unit:	Kg / household-day
Description:	Quantity of fuel that is consumed in baseline scenario b during year y for technology i
Measured/ Calculated / Default:	Calculated
Source of data:	Default quantity of fuel derived using formula [$Fuel_{baseline} = \eta_{project} / \eta_{baseline} \times Fuel_{project}$] specified in GS methodology of <i>Technologies and Practices to Displace Decentralised Thermal Energy Consumption (11/04/2011)</i> page 18 footnote 24.
Value(s) of monitored parameter:	14.16 kgs / HH / day (equivalent to 5.171 tonnes of wood / HH / year)
Monitoring equipment:	No equipment used.
Measuring/ Reading/ Recording frequency:	Will be revised for renewal of the crediting period.
Calculation method (if applicable):	$Fuel_{baseline} = \eta_{project} / \eta_{baseline} \times Fuel_{project}$
QA/QC procedures:	
Purpose of data:	Application of suppressed demand approach
Additional comment:	Charcoal is not a fuel in the project scenario, therefore it was not necessary to estimate wood to charcoal conversion rates from project specific monitoring or to research a conservative wood to charcoal production ratio.

Data / Parameter:	$B_{p,i,y}$
Unit:	Kg / household-day
Description:	Quantity of fuel that is consumed in project scenario p during year y for technology
Measured/ Calculated / Default:	Measured

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Source of data:	2009 and 2011 Field tests conducted in Malawi
Value(s) of monitored parameter:	4.6 Kg / household-day (equivalent to 1.7 tonnes of wood / HH / year)
Monitoring equipment:	HS-30 Digital Scales
Measuring/ Reading/ Recording frequency:	Value as per GS 613 and suppressed demand approach. Will be monitored for renewal of the crediting period.
Calculation method (if applicable):	Average results of two Field Tests involving a large sample (n = 355) from Balaka District provide conservative estimate of fuel consumption in the project scenario. Four visits per monitored household in day 0, day 1, day 2 and day 3 to capture data over a 72-hour period.
QA/QC procedures:	Extrapolated savings likely to be conservative as end-users were not yet accustomed to the new technology and are likely to become more efficient with practice.
Purpose of data:	Application of suppressed demand approach
Additional comment:	

Data / Parameter:	U_{P, PCS}
Unit:	Percent
Description:	Single Weighted Usage Parameter for PCS based on cumulative usage rate for technologies in project scenario PCS. Usage of stoves over time to determine project fuel consumption for PCS users.
Measured/ Calculated / Default:	Calculated
Source of data:	Annual usage surveys
Value(s) of monitored parameter:	[to be presented for verification]
Monitoring equipment:	-
Measuring/ Reading/ Recording frequency:	Annual or more frequently, in all cases on time for any request for Issuance. One Usage Survey per monitored household.
Calculation method (if applicable):	
QA/QC procedures:	Pre-testing conducted to train enumerators; large sample to minimise bias.

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Purpose of data:	Calculation of emission reductions
Additional comment:	

Data / Parameter:	$N_{p,y}$
Unit:	Project technologies credited (units)
Description:	Technologies in the project database for project scenario p through year y
Measured/ Calculated / Default:	Calculated
Source of data:	Total sales record. Calculated from day after technology is disseminated for specific monitoring periods (all dates inclusive).
Value(s) of monitored parameter:	Units sold – to be specified for verification
Monitoring equipment:	No equipment used.
Measuring/ Reading/ Recording frequency:	Continuous
Calculation method (if applicable):	
QA/QC procedures:	Transparent data analysis and recording
Purpose of data:	Calculation of emission reductions
Additional comment:	

Data / Parameter:	$LE_{p,y}$
Unit:	tCO ₂ eq / year
Description:	Leakage in project scenario p during year y
Measured/ Calculated / Default:	Calculated
Source of data:	Baseline and monitoring surveys
Value(s) of monitored parameter:	0

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Monitoring equipment:	No equipment used.
Measuring/ Reading/ Recording frequency:	Every 2 years
Calculation method (if applicable):	Leakage will be assessed in second year of project
QA/QC procedures:	Transparent data analysis and reporting
Purpose of data:	Calculation of emission reductions
Additional comment:	Aggregate leakage can be assessed for multiple project scenarios, if appropriate. For single sample performance tests and efficiency ratio multiplier potential leakage is not subsumed.

Data / Parameter:	$f_{NRB,i,y}$
Unit:	Fraction of non-renewability
Description:	Non-renewability status of woody biomass fuel in scenario I during year y
Measured/ Calculated / Default:	Default
Source of data:	UNFCCC EB 67 Report Annex 22 – Default values of fNRB (Table 2)
Value(s) of monitored parameter:	81%
Monitoring equipment:	No equipment used.
Measuring/ Reading/ Recording frequency:	Fixed by baseline study for a given crediting period, updated if necessary as specified in section III.1 of the methodology.
Calculation method (if applicable):	
QA/QC procedures:	
Purpose of data:	Determine extent biomass saved by the project in non-renewable.
Additional comment:	

Data / Parameter:	$\eta_{project,y}$
Unit:	%
Description:	Thermal efficiency of project technology i in year y

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Measured/ Calculated / Default:	Measured
Source of data:	CREEC Regional Stove Testing Centre Chitetezo Mbaula Water Boiling Test Report, August 2012
Value(s) of monitored parameter:	30.6%
Monitoring equipment:	<p>Value based on tests conducted at CREEC (Centre for Research in Energy and Energy Conservation) is an independent regional testing facility located in Makerere University at the College of Engineering, Design, Art and Technology, Kampala, Uganda.</p> <p>Stoves of different ages to be tested for efficiency to measure performance of technology as it ages using water boiling test using protocol as at http://www.pciaonline.org/node/1048</p> <p>Wood humidity measuring device moisture measuring range 6% to 99.9%, accuracy of +/- 1%.</p> <p>Digital hand thermometer -200°C to +200°C +/- 1°C</p> <p>Hanging scales to measure</p> <p>7-8 kg capacity digital weighing scale for water boiling tests (testing 5 litres of water + the pot)</p>
Measuring/ Reading/ Recording frequency:	<p>Fixed value for new stove (30.6%).</p> <p>WBTs will be conducted every 2 years for aging stoves to assess drop offs in efficiency.</p>
Calculation method (if applicable):	As per water boiling test protocol
QA/QC procedures:	
Purpose of data:	Assess change in performance, measured in thermal efficiency, over time.
Additional comment:	30.6% is the lowest average of the values obtained during stove testing and is therefore conservative. This parameter is included for suppressed demand calculations. Accuracy of equipment will depend on the equipment that is locally available or procurable within reason.

SECTION C. Stakeholders' comments

>> Please note that the blind scoring exercise during stakeholder consultation need not be carried out.

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C.1. Brief description how comments by local stakeholders have been invited and compiled:

>> *Please describe the agenda of physical meeting, Non-technical summary, Invitation tracking table, Text of invitations sent, any other consultation method used*

Initial stakeholder consultation on project activity and technology conducted November 18, 2008, and is continuous. Feedback is positive and encouraging.

A stakeholder consultation on Malawi project activities under the ABEC PoA was held in Mponela, Malawi on the 17th October, 2012, to improve the design of the VPA. A total of 99 stakeholders were invited to attend via written and verbal correspondence (email, letter and in person). Invitees included representatives of the DNA; and a representative group of Malawian stakeholders including Government, Civil Society, Private Sector and Academia. Effort was made that the invitees be inclusive of different sectors of society with attention to race, gender, creed and generation.

Written invitations included a draft agenda for the meeting and non-technical summary of African Biomass Energy Conservation PoA: Malawi VPAs. Sample text is as follows:

Text of written invitations:



HESTIAN PROJECT
P.O.BOX 1306 Lilongwe 3, Malawi
Area14/126
info@area55consulting.com



October 10, 2012

Dear Invited Participant,

You are invited to a Stakeholder Consultation Meeting in respect of the Micro-Scale African Biomass Energy Conservation Programme of Activities (PoA) which is expected to be registered and generate Verified Emission Reductions (VERs) under the Gold Standard.

The meeting will take place at Malawian Entrepreneurs Development Institute (Medi), Mponela, Malawi (next to the *Total* filling station) starting at 9.00am on Wednesday, 17th October, 2012 (Draft Agenda attached).

The meeting will be an Activity Level Stakeholder Consultation Meeting in respect of the first 5 Verified Programme Activities (VPAs) expected to be implemented in Malawi (and forming part of the above PoA). A non-technical summary of these activities is attached.

A Stakeholder Consultation Report will be made available (for any feedback you may have) after the meeting as part of a Stakeholder Feedback Round.

We would be grateful for confirmation of your ability to participate by Friday, 12th October, 2012. Sitting allowances will not be provided and participants are expected to cover their own costs to and

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from the meeting venue.

Confirmation/regrets may be sent to Cristel Cheong, Email: crisheong@gmail.com, Telephone: 0991 896 337.

With kind regards,

Maya Stewart

Managing Director

Verified Programme Activities in Malawi

Agenda for Stakeholder Consultation

Time and Date: 9.00am – 11.30am on 17th October, 2012

Venue: Malawian Entrepreneurs Development Institute (Medi), Mponela, Malawi

(next to the *Total* filling station)

9.00am	Registration
9.15am	Opening Remarks and Welcome
9.30am	Introduction to Verified Programme Activities in Malawi
10.00am	Demonstration of Technologies
10.30am	Group Discussion, Questions and Stakeholder Feedback on Potential Sustainable Development Impacts of Programme Activities in Malawi
11.00am	Conclusion <ul style="list-style-type: none"> • Continuous Input and Grievance Mechanism • Stakeholder Evaluations • Closing Remarks and Organising Follow-up Information for Stakeholder and Stakeholder Feedback
11.30am	Refreshments

[Attachment: Non Technical Summary for Malawi VPAs.pdf]

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Non-Technical Summary:

Woodfuel¹ accounts for 88.5% of the country's aggregate energy use² and demand is currently greater than supply. Deforestation is not only resulting in increased scarcity of woodfuel for energy but it is also causing many other environmental problems, which directly increase socio-economic vulnerability, such as increased soil erosion, river siltation, increased vulnerability to flooding, the sinking of the water table and reduced natural habitat for biodiversity. It is estimated that in Malawi, 93% of household and industrial energy requirements are met from forests.³

Proposed Intervention:

Based on its successful experience in Malawi in developing and implementing Gold Standard Project GS613 (Integrated Biomass Energy Conservation Project), Hestian Innovation Ltd. (Hestian.com) intends to further reduce greenhouse gas emissions from non-renewable biomass fuel and generate Gold Standard VERs by dissemination of:

- Improved Household Cookstoves – mainly the Chitetezo Mbaula;
- Fuel-efficient productive devices including 'Mayankho' Institutional Stoves, 'Rocket' Chicken Brooders and Rocket Barns; and
- Improved Brick Making activities.

Methods of work

This Project is intended to be part of a Gold Standard Micro-Scale Programme of Activities, called the African Biomass Energy Conservation Programme, which is being developed by Hestian. The suggested geographic coverage for the initial Verified Program of Activities (VPAs) are the five (5) Districts of Dowa, Lilongwe, Kasungu, Ntchisi and Mzimba with an opportunity to expand into other Districts in the near future. These Districts will form the initial five (5) VPAs for Malawi.

Key actors include producers, village installers and users, local authorities, relevant government departments, civil society organizations and relevant community institutions. Key approaches to work will include strengthening identified entrepreneurs, information sharing, user education, performance monitoring, quality control and maintenances /replacement services.

¹ Woodfuel is used to mean all fuels originating from woody biomass, including charcoal, in distinction from firewood or fuelwood, which are understood to mean the wood in its original composition.

² Malawi State of Environment and Outlook Report 2010, Government of Malawi.

³ Report on Malawi's Climate Technology Transfer and Needs Assessment, Government of Malawi, March 2003

No written public invitation to attend the stakeholder meeting was published.

All invitations issued to stakeholders were tracked as per the table below:

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Category Code	Name of Organisation (if relevant)	Name of Invitee	Method of Invitation	Date of Invitation	Confirmation Received Y/N
A	African Institute of Corporate Citizenship Malawi	Noel Sangole	Email	10/10/2012	N
D	AGREDS - Assemblies of God Church of Malawi Development Arm	John Kanthungo	Email	10/10/2012	N
A	Alliance One	Ron Ngwira	Email	10/10/2012	N
A	Arise & Shine International	Patrick Mussa	Email	10/10/2012	Y
A	Aware & Fair	Ben Michael Mankhamba	Email	10/11/2012	N
B	Bunda College of Agriculture	Alex Kalimbira	Email	10/10/2012	N
B	Bunda College of Agriculture	Charles B.L. Jumbe	Email	10/10/2012	Y
B	Bunda College of Agriculture	Dr. David Mkwambisi	Email	10/10/2012	N
D	CCODE	Cynthia Phiri	Email	10/10/2012	N
D	Centre for Environmental Policy & Advocacy (CEPA)	Jackie Nankunda	Email	10/10/2012	N
A	Centre for Social Concern	Kondwani Hara	Email	10/10/2012	Y
A	Charles Construction	Charles Mlose	Email	10/10/2012	N
A	Charles Stewart Day Old Chicks	Andrew Stewart	Email	10/10/2012	N
D	Civil Society Agriculture Network (CISANET)	Edson Musopole	Email	10/10/2012	N
B	Community Health Services Unit (MOH)	Norman Lufesi	Email	10/10/2012	N
B	Department of Energy	Lewis Mhango	Letter	10/12/2012	N
B	Department of Energy	Leonard Gobede	Email	10/10/2012	Y
B	Department of Energy Affairs	Gift Chiwayula	Email	10/10/2012	N
B	Department of Forestry	Dr. Dennis Kayambazinthu	Letter	10/12/2012	N
B	Department of Mines	Chimwemwe Bandazi	Email	10/10/2012	N
A	DFID - Dept. for Int'l Development	Donald Kamdonyo	Email	10/10/2012	Y
A	DFID - Dept. for Int'l Development	Sarah Hennell	Email	10/10/2012	N
A	Dziwani Stove Group	Alfred Chisale	Email	10/10/2012	Y
A	Ecobank	Charles	Email	10/10/2012	N
A	Ecobank	Rehema	Email	10/10/2012	N
D	Environment Africa	Barbara Banda	Email	10/10/2012	N
B	Environmental Affairs Department	Caroline Theka	Email	10/10/2012	N
B	Environmental Affairs Department	Josephine Zimba	Email	10/10/2012	N
A	EU - European Union	Simon Chirambo	Email	10/10/2012	N
A		Mr Gideo Jailosi	Word of Mouth	10/11/2012	Y
A		Mr Jarvis Jimu	Word of Mouth	10/11/2012	Y
A		Mr. Alex Banda	Word of Mouth	10/11/2012	Y
A		Mr. Kafwakalawa	Word of Mouth	10/11/2012	Y

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A		Mr. Kamtondo	Word of Mouth	10/11/2012	Y
A		Mr. Paul Nyengele	Word of Mouth	10/11/2012	Y
A		Mr. Thendo Kadzitché	Word of Mouth	10/11/2012	Y
A		Mrs Zifa	Word of Mouth	10/11/2012	Y
A		Mrs. Banda	Word of Mouth	10/11/2012	Y
A		Mrs. Chiwoko	Word of Mouth	10/11/2012	Y
A		Mrs. Jailosi	Word of Mouth	10/11/2012	Y
A		Mrs. Jimu	Word of Mouth	10/11/2012	Y
A		Mrs. Kadzitché	Word of Mouth	10/11/2012	Y
A		Mrs. Kamtondo	Word of Mouth	10/11/2012	Y
A		Mrs. Katabgula	Word of Mouth	10/11/2012	Y
A		Mrs. Limbikani	Word of Mouth	10/11/2012	Y
A		Mrs. Philimon	Word of Mouth	10/11/2012	Y
A		Mrs. Seaward Nyengele	Word of Mouth	10/11/2012	Y
A		Mrs. Wiseman	Word of Mouth	10/11/2012	Y
A		Mrs.. Kamtuliro	Word of Mouth	10/11/2012	Y
A		Mrs.Thauzeni	Word of Mouth	10/11/2012	Y
A	Farmers Union of Malawi	Sungeni Ng'onamo	Email	10/10/2012	Y
A	Farmer's Union of Malawi	Jacob Nyirongo	Email	10/10/2012	N
A	First Merchant Bank	Saloni Kotecha	Email	10/10/2012	N
B	Geological Survey Department	Dr. Leonard S.N. Kalindekafe	Email	10/10/2012	N
D	Initiative for Climate Change Management	Geoffrey Chikuta	Email	10/10/2012	N
B	Lilongwe City Assembly - Dept. of Forestry	Mr. Chingana	Letter	10/12/2012	N
A	Limbe Leaf	Themba Machila	Email	10/10/2012	Y
A	Local Development Fund	Hellen Zalira	Email	10/10/2012	N
B	Malawi Bureau of Standards	Bishop A. Hauya	Email	10/10/2012	N
B	Malawi Industrial Research and Technology Development Centre	Mr. John Taulo	Email	10/10/2012	N
D	Mary's Meals	Joe Gribben	Email	10/10/2012	N

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B	Ministry of Agriculture and Food Security	Gladys Zimba	Email to Neil Q. Orchardson (Technical Assistance) Neil.Techsec@moafsmw.org	10/10/2012	N
B	Ministry of Education	Charles Mzinga	Email	10/10/2012	N
B	Ministry of Environment & Climate Change Management	Dr. Y. M. Ntupanyama	Letter	10/12/2012	N
B	Ministry of Environment & Climate Change Management	Ibrahim Matola	Email	10/10/2012	Y
B	Ministry of Environment & Climate Change Management	Mpeta Mwanyongo	Email	10/10/2012	N
B	Ministry of Environment & Climate Change Management		Letter to former Minister, Catherine Gotani Hara	10/12/2012	N
B	Ministry of Environment & Climate Change Management	Rashid Chongolo	Email	10/10/2012	Y
C	Ministry of Environment & Climate Change Management	Shamiso Nandi Najira	Email	10/10/2012	N
B	Ministry of Industry, Trade and Private Sector Development	Heather Kachingwe	Email	10/10/2012	N
B	Ministry of Lands, Housing and Urban Development	Esau Mwambira	Email	10/10/2012	Y
A	NASFAM	Alifeyo Nyasulu	Email	10/10/2012	Y
D	National Association of Business Women	Mary Malunga	Email	10/10/2012	N
B	National Commission for Science & Technology	Fredrick Munthali	Email	10/10/2012	N
B	National Construction Industry Council	Emmanuel Mjimapemisa	Email	10/10/2012	N
A	NBS Bank	Taona Tembo	Email	10/10/2012	N
A	Norwegian Embassy	Monica Stensland	Email	10/10/2012	N
A	OIBM - Opportunity Int'l Bank Malawi Ltd	Arthur Nkosi	Email	10/10/2012	N
D	Peace Corps	Khama Matupa	Email	10/10/2012	N
A	Phukaphuka	Isaac Salima	Email	10/10/2012	N
A	Poultry Industry Association of Malawi	Mr Chuma	Email	10/10/2012	N
D	Renew'N'Able Malawi	Martina Kunert	Email	10/10/2012	N
A	Standard Bank	Heather Karim	Email	10/10/2012	N
D	Tearfund	Aaron Lewani	Email	10/10/2012	Y
D	TEVETA	Frank Banda	Email	10/10/2012	Y
D	Total Land Care	Trent Bunderson	Email	10/10/2012	N
D	Trocaire	Emmanuel Karulinda	Email	10/10/2012	N
A	UNDP	Jan Rijpma	Email	10/10/2012	N
A	UNDP/Ministry of Environment & Climate Change	Henry Sibanda	Email	10/10/2012	N
A	USAID (Malawi)	Madalitso Chisale	Email	10/10/2012	N
D	VSO Intl	Joan Bennett	Email	10/10/2012	N

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D	WESM - Wildlife & Environmental Society of Malawi	Elesani Zakochera	Email	10/10/2012	N
A	WFP - World Food Program	Brittany Grabel	Email	10/10/2012	N
A	WFP - World Food Program	Cecilia Garzon	Email	10/10/2012	N
A	WFP - World Food Program	Duncan Ndhlovu	Email	10/10/2012	N
A	WFP - World Food Program	Martin Mphangwe	Email	10/10/2012	N
A	WFP - World Food Program	Stacia Nordin	Email	10/10/2012	Y
A	World Agroforestry Center	Dr. Sileshi Weldesemayat	Email	10/10/2012	N
A	World Bank	Dahtso Kafuwa	Email	10/10/2012	N

The majority of invitees and participants were subsequently contacted via email on January 12, 2013, and provided with a revised Non-Technical Summary which included a *Chichewa* translation of the original English text. (Chichewa is one of the official spoken languages of Malawi).

Comments on technology, project area, distribution mechanism and time frame with reference to eligibility criteria in B.2:

These criteria are outlined in the non-technical summary issued to stakeholders together with their invitations to attend SCM. Technology, project area and implementation strategy are same: focus on Chitetezo Mbaula for primarily rural, solid biomass dependent households. Stoves to be produced by local production groups and promoted within country by local actors.

The Project area is Malawi. The distribution mechanism evolves, but targets low-income households and uses a commercial for sustainability. Time frame is to get as many stoves being used as soon as possible while at the same time guaranteeing quality control and assuring after sales services.

As per the non-technical summary, the VPA technology, the Chitetezo Mbaula, was one of the main technologies discussed at the stakeholder meeting. This has already been detailed in the SCR and the stove is eligible for the VPA inclusion, meeting all of the necessary criteria. Performance reports have been shared on the technology as well as specifications for production.

As per the non-technical summary, the LSC discussed the first 5 planned VPAs which were meant to be geographically focussed. While the approach for VPAs has since changed to chronological not geographic, based on discussion with GS representatives, the criterion of VPAs being consistent with geographical boundaries set in the PoA – i.e. the country of Malawi, is met. PP has been conducting stakeholder consultation meetings since 2008 on same technology and project target area (country of Malawi) and believes that stakeholder consultation for the technology with same key players is more than sufficient in Malawi. Key meetings are chronologically listed below, and were held in a diverse set of districts:

1. November 14, 2008 – Formal stakeholder consultation meeting attended by 39 members of government, civil society and private sector in Lilongwe District, Malawi
2. November 19, 2008 – Formal field day attended by 68 participants in Chamama, Kasungu District, Malawi

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3. October 17, 2012 – Formal stakeholder consultation meeting attended by 46 members of government, civil society, private sector and farming community in Mponela, Dowa District, Malawi
4. October 23, 2012 – Informal stove open day attended by 3,250 community level stakeholders including Traditional Authority, Group Village Headmen, Village Heads, agriculture groups, teachers and students, health and forestry extension workers, religious heads, youth clubs, police, community based organisations and other community members in Kamphata, T/A Chimombo, Nsanje District, Malawi
5. October 25, 2012 – Informal stove open day attended by 1,935 community level stakeholders including Traditional Authority, Group Village Headmen, Village Heads, agriculture groups, teachers and students, health and forestry extension workers, religious heads, youth clubs, police, community based organisations and other community members in Dinyero, Nguluwe, T/A Mbenje, Nsanje District, Malawi
6. November 13, 2012 – Informal stove open day attended by 2,454 community level stakeholders including Traditional Authority, Group Village Headmen, Village Heads, agriculture groups, teachers and students, health and forestry extension workers, religious heads, youth clubs, police, community based organisations and other community members in Mphamba, T/A Tengani, Nsanje District, Malawi
7. November 15, 2012 – Informal stove open day attended by 4,358 community level stakeholders including Traditional Authority, Group Village Headmen, Village Heads, agriculture groups, teachers and students, health and forestry extension workers, religious heads, youth clubs, police, community based organisations and other community members in Ching'oma, T/A Makoko, Nsanje District, Malawi
8. August 22, 2013 – Informal stakeholder meeting for 30-40 forestry and energy officers, stove producers and Chinkwita and Chifufuza GVHs in Chinkwita and Chifufuza Villages, Dedza District, Malawi
9. November 14, 2014 – Formal stakeholder consultation meeting attended by 36 members of government, civil society and private sector in Lilongwe District, Malawi

Stoves produced in one district, e.g. could be sold or taken for use in a far removed district, resulting in not enough stoves in that district to form a VPA, and thereby penalising the project implementer for geographic spread of technologies.

The stoves promoted under this and other VPAs are reaching all three regions and we have now sold stoves in all 28 Districts of Malawi.

The Chitetezo Mbaula does not yet have a national standard in Malawi but VPA implementers are actively engaging with the Malawi Bureau of Standards to develop a National Standard for this and other stove technologies.

The PP and VPA implementers are actively involved in the design and development of many capacity building initiatives in Malawi. These activities include open days, stoves camps, seminars, site visits, and visits to production groups and users by auditors, policy makers, CBOs, academics and the general

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public.

As per the non-technical summary, stoves are produced by local production groups and promoted within country by local actors. This was discussed at the meeting and representatives of production groups were present at the meeting. As per B.2 the VPA targets domestic cookstove users using solid biomass is the primary fuel, with initial emphasis on low income rural communities. As per non-technical summary and as discussed during the meeting focus on Chitetezo Mbaula for primarily rural, solid biomass dependent households. Time frame – At LSC it was discussed that the project would run for an initial 7 year period and explained that stove dissemination under a separate project had already begun since 2008 in Malawi.

C.2. Summary of the comments received:

>> Please describe the outcome of the meeting, assessment of stakeholders comment, list of participants.

A total of forty-six (46) participants from government, civil society and the international community attended the stakeholder consultation meeting. Out of the 46 participants, 25 were women and 21 were men. All of the participants were from local companies, private sector and non-governmental organisations, and included farmers, stove producers, and manufacturers and end-users of efficient productive devices.

Participants' List				
Date and time: Wednesday the 17th of October 2012.				
Location: Malawian Entrepreneurs Development Institute (Medi), Mponela, Malawi (next to the <i>Total</i> filling station)				
Code	Name of Participant	Male/ Female	Organisation (if relevant)	Contact Details
A	Scaward Jere	M	Alliance One	PO Box 11, Mponela
A	Anes Maleyo	F	Apatsa Musiyana Club	
A	Vickness Kantuliro	F	Apatsa Musiyana Club	
A	Janet Msiska	F	Area 55 Consulting	janetmsiska@yahoo.co.uk
A	Maya Stewart	F	Area 55 Consulting	
A	Mbumba Chigalu	F	Area 55 Consulting	mbumbz@gmail.com
A	Stewart Banda	M	Area 55 Consulting	0991337951/ 0888305439
D	Patrick Mussa	M	Arise & Shine International	PO Box 30351
A	Jezala Chipaka	F	B. Allayce Club	0991562866
D	Kondwani Hara	M	Centre for Social Concern	konhara2011@gmail.com
A	Lucia Samson	F	Chimbule Club	
A	Oliver Limitoni	M	Chimphakasa Club	0993558919
A	Cristel Cheong	F	Hestian	crisheong@gmail.com
A	Watson Malunga	M	M. Welding & Manufacturing	0888698668
A	Alice Mtsitsa	F	Mpatsa Club	0888283090
A	Gedion Jailos	M	Mwaiwathu Club	0995509005

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A	Joice Gedion	F	Mwaiwathu Club	
D	Keneth Bota	M	Mwanawaleza	0994883493
A	Anna Jere	F	Nyengere Club	
A	Lucia Zita	F	Nyengere Club	
A	Maslatira Zita	M	Nyengere Club	
A	Paulo Nyengere	M	Nyengere Club	0999296556
A	Thereza Paulo	F	Nyengere Club	
A	Boyce Njunga	M	OIBM	boya.njunga@oibm.mw
A	Chrissy Gwazani	F	Pakuya Club	
A	Ethel Jimu	F	Pakuya Club	
A	Lychia Kantondo	F	Pakuya Club	
A	Maria Limbikani	F	Pakuya Club	
A	Isaac Salima	M	Phukaphuka	salimaisaac90@gmail.com
A	Alice Chimwemwe	F	Tafika Club	0994811731
A	Anna Zera	F	Tafika Club	
A	Doreen Alex	F	Tafika Club	
A	Eunice Katangale	F	Tafika Club	0996658755
A	Legnat Thando	M	Tafika Club	
A	Rosemary Thauzeni	F	Tafika Club	
A	Zikitze Chiwanfa	M	Tcher Club	
A	Davison Buleya	M	Tikambrane Club	0999296270
A	Valentina Chiniwawa	F	Tinenenji	
D	Frank Banda	M	Tiveta	fbanda@tivetamw.com
A	Amon Kabuli	M	UNDP	amon.kabuli@undp.org
A	Hendy Sibanda	M	UNDP/MoECC	0993220719
D	Elesani Zakohera	M	WESM	zakohera@gmail.com
A	Alfred Chisale	M		alfred.chisale@yahoo.com
A	Kiness Layimon	F		0881124077
A	Esther Malimwe	F		
A	Blair Banda	M		

The stakeholder consultation meeting began with a prayer from one of the participants. After a brief outline and explanation of the morning's agenda, Mbumba Chigalu (Area 55 Consulting) made the presentation on the Programme Activities for Malawi. This presentation included a brief introduction to Hestian and its implementation partner, Area 55 Consulting; outline of the Programme objectives and proposed interventions for Malawi; areas of work and proposed methods of work. At the end of the presentation, users of two of the proposed technologies – the Rocket Barn and Chitetezo Mbaula [portable ceramic stove] were called upon to give testimony on their experiences with the technologies. Details of the questions and comments which followed this presentation may be found in Section C.3 below.

This segment was followed by cooking demonstrations on two of the proposed intervention technologies – the Chitetezo Mbaula [portable ceramic stove] and the Mthandizi [portable metal stove with ceramic insert].

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The meeting's focus then turned to gathering stakeholder feedback on the sustainable development benefits of the Programme; as well as feedback on the Continuous Input/Grievance Expression Mechanism. Participants were then issued with Stakeholder Evaluation forms in order to obtain further feedback on the proposed Programme Activities for Malawi. The meeting concluded with expressions of gratitude for the participants' attendance and invitation to light refreshments at 12.20p.m.

C.3. Report on how due account was taken of any comments received and on measures taken to address concerns raised:

There were minimal concerns about the project activities. Most people were very excited about the project, some presented opportunities to work together, and many recommended the project cover all of Malawi. Other comments can be found below:

Stakeholder comment	Was comment taken into account (Yes/No)?	Explanation (Why? How?)
Amon Kabuli (United Nations Development Programme – UNDP) to Blair Banda (Tobacco Farmer): Questioned why Mr. Banda continued to use traditional barns together with his [improved] Rocket Barns given all of the benefits of the barn.	Yes	Mr. Banda explained that due to some problems which he encountered, he could not manage to maintain Rocket Barns only. However, he hopes to eventually only use Rocket Barns.
Question to Blair Banda (Tobacco Farmer): Inquired what Mr. Banda intended to do in the future, given the problems currently facing the tobacco sector.	Yes	Mr. Banda indicated that he will continue growing tobacco and is growing trees to mitigate deforestation in his area.
Participant added that the Rocket Barn does not emit a lot of smoke as with the traditional barn which destroys the ozone layer.	Yes	Noted.
Elesani Zapochera (Wildlife and Environmental Society of Malawi – WESM) to Meeting Facilitators: Asked for data to show the wood	Yes	- Isaac Salima (Phukaphuka) explained that wood usage is monitored before and after using the Rocket Barns and data collected from farmers.

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<p>savings between the traditional and Rocket Barns.</p>		<p>He advised that Mr. Zapochera contact Area 55 Consulting if interested in receiving this information, adding that data has been collected since 2008.</p> <p>- Alfred Chisale (Dwizana Stove Group) noted that even without looking at the actual numbers, wood savings are obvious as farmers take less days and therefore use less wood for curing with the Rocket Barns.</p>
<p>- Henry Sibanda (UNDP/Ministry of Environment and Climate Change (MoECC) to Meeting Facilitators:</p> <p>Inquired about the cost of constructing a Rocket Barn relative to the traditional barn, and recommended that in future presentations, the costs and savings should be shown in economic terms – and should allow for determining how many trees are lost to tobacco curing each year.</p> <p>- Frank Banda (Tiveta) asked for information on leaf quality and prices received by farmers for the Rocket Barn cured tobacco.</p>	<p>Yes</p>	<p>- Isaac Salima (Phukaphuka) noted that while the initial investment is higher, it is recovered through the life of the barn and the wood savings, and saving on transport costs as some farmers purchase wood which must be transported from Dowa and Ntchisi.</p> <p>- Mbumba Chigalu (Area 55 Consulting) added that such economic analysis is available and will be sent to Mr. Sibanda; and price and leaf quality information will be sent to Mr. Banda.</p>
<p>- Frank Banda (Tiveta) to Esther Malingwe (Chitetezo Stove User):</p> <p>Inquired about how often pots must be scrubbed when using the Chitetezo, given that some women use charcoal because they do not want to scrub their pots daily.</p> <p>- He also asked about the length of time required for cooking on the</p>	<p>Yes</p>	<p>- Esther Malingwe (Chitetezo Stove User) explained that she does not need to clean her pots every day because the stove produces little smoke. She also indicated that the Chitetezo cooks faster than the three stone fire.</p> <p>- Mbumba Chigalu (Area 55 Consulting) added that the</p>

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Chitetezo, noting that some people use a lot of firewood because they want to cook faster.		height of the stove is based on studies about the optimal height for complete combustion in the stove's fire chamber.
Boyce Njunga (Opportunity Bank International Malawi) to Esther Malingwe (Chitetezo Stove User): Asked about circulation of air in the stove and whether it made it difficult to get a good flame for cooking.		Esther Malingwe (Chitetezo Stove User) responded that there are no hassles lighting the fire and the fire burns well.
Frank Banda (Tiveta) to Meeting Facilitators: Inquired about the composition of the Chitetezo stove and improving heat retention.	Yes	Mbumba Chigalu (Area 55 Consulting) explained that the stove is a solid clay mass that retains heat quite well.
Amon Kabuli (UNDP) to Meeting Facilitators: Noted that there is a need for alternatives to woodfuel and charcoal.	Yes	Mbumba Chigali (Area 55 Consulting) explained that crop residues can also be burned in the stoves and are in fact available in towns.
Frank Banda (Tiveta) to Esther Malingwe (Chitetezo Stove User): Inquired about the stability of the stove during cooking.		Esther Malingwe (Chitetezo Stove User) responded that there is no fear of the pot or stove toppling during cooking.
- Elesani Zapochera (WESM) to Meeting Facilitators: Recommended to make this a national project in order to save firewood and reduce the rate of use of charcoal.	Yes	The comment was noted.
Amon Kabuli (UNDP) to the Meeting Facilitators: - Encouraged sharing the economic analysis of stoves' benefits with policy makers.	Yes	- The comment was noted. - Mbumba Chigalu (Area 55 Consulting) explained that there are trained and follow up with end users based on

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- Inquired about the monitoring process.		database of ER contracts before being audited by Gold Standard.
Frank Banda (Tiveta) to Meeting Facilitators: Inquired if the Programme advocates for forest restoration.	Yes	Mbumba Chigalu (Area 55 Consulting) responded that good kitchen and firewood practices are taught to end users when stoves are sold.
Henry Sibanda (UNDP/MoECC) to Meeting Facilitators: Proposed to work with Area 55 Consulting to promote stoves in the Southern Region of Malawi, as well as in the other areas where he has funding for work, such as Blantyre, Balaka and Mwanza.	Yes	Maya Stewart and Mbumba Chigalu (Area 55 Consulting) thanked Mr. Sibanda and proposed that they discuss a way forward.
Vickness Kantiliro (Tobacco Farmer) to Meeting Facilitators: Expressed how impressive the stove presentations were and asked that her village be trained to produce the stove so they can experience their benefits.	Yes	Mbumba Chigalu (Area 55 Consulting) welcomed this sentiment and said the option would be explored.

C.4. Report on the Continuous input mechanism selection:

The methods for continuous input and grievance which will be employed – as per discussions are the stakeholder consultation meeting are the Continuous Input / Grievance Expression Process Book, Telephone access, and Internet / email access, the details of which are specified in the table below:

	Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)	Justification
Continuous Input / Grievance Expression Process Book	Area 55 Consulting Offices Area 14/126 Lilongwe Malawi	As Area 55 Consulting is the Project Implementer of GS 2446, the Area 55 Office in Lilongwe, Malawi, is an appropriate and publicly accessible location at which local stakeholders can provide their feedback on the project. This location is also conducive to

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		<p>continuous and regular checks for stakeholder comments.</p> <p>The book is formatted as per Table 2.1 in the Gold Standard Annex W (Continuous Input and Grievance Mechanism), in both English and Chichewa.</p>
Telephone access	<p>+265 999 383 457 / +265 888 846 262 / +265 999 754 024 (Project Implementer, Malawi)</p> <p>+41 (0) 22 788 7080 (Gold Standard Regional Office)</p>	<p>For those who are unable to travel to Lilongwe or are not literate, they may contact the Project Implementer via telephone. Persons dialling this telephone number will have access to a Project representative who speaks both English and the local language, Chichewa.</p> <p>Stakeholders have also been provided with a telephone number for the regional Gold Standard office in Egypt.</p>
Internet/email access	<p>info@area55consulting.com / area55consulting@outlook.com (Project Implementer, Malawi)</p> <p>http://hestian.com/ntsandcim/ (Project Developer, International)</p> <p>info@goldstandard.org and johann.thaler@goldstandard.org (Gold Standard Regional Manager)</p>	<p>Two email addresses of the Project Implementer have been provided for continuous input / grievance for the convenience of stakeholders with internet access.</p> <p>The table for recording input / grievance is also available on the Project Developer's website in both English and Chichewa, and an email address for the Gold Standard's regional manager has also been provided.</p>
Nominated Independent Mediator (optional)	None appointed	<p>The use of a Nominated Independent Mediator is not being employed for GS 2446 as the use of the process book, telephone and internet will sufficiently capture feedback as necessary.</p>

In addition to the above methods, stakeholders were also provided with the following address for The Gold Standard Foundation:

Avenue Louis Casai 79 CH-1216 Geneva-Cointrin Switzerland

All issues identified during the crediting period through any of the Methods shall have a mitigation

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measure in place that should be added to the monitoring plan.

C.5. Report on stakeholder consultation feedback round:

The stakeholder feedback round commenced on April 25, 2014 once the project documents were publicly available on the Gold Standard Registry. Over 80 stakeholders with email address who were invited to attend the stakeholder consultation meeting, and those who attended, were issued emails with a link to the project documents on public registry and asked for feedback additional to discussions at the meeting. Another 205 people were also reached for feedback using Hestian's Facebook page.

No additional feedback was received during the stakeholder feedback round which was concluded on June 25, 2014. Stakeholders still have the opportunity to provide project feedback through the Continuous Input and Grievance Mechanism.

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Annex 1

CONTACT INFORMATION ON ENTITY/INDIVIDUAL RESPONSIBLE FOR THE MICRO--SCALE VPA

Organization:	Hestian Innovation Ltd.
Street/P.O.Box:	
Building:	Cragmuir Chambers
City:	Road Town, Tortola
State/Region:	British Virgin Islands
Postfix/ZIP:	N/A
Country:	British Virgin Islands
Telephone:	+44 207 1934710
FAX:	N/A
E-Mail:	info@hestian.com
URL:	www.hestian.com
Represented by:	
Title:	
Salutation:	
Last Name:	O'Connor
Middle Name:	
First Name:	John
Department:	
Mobile:	+44 207 1934710
Direct FAX:	
Direct tel:	+44 207 1934710
Personal E-Mail:	John.oconnor@hestian.com

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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

Date: October 15, 2014

The Gold Standard Foundation

79 Avenue Louis Casai

Geneva Cointrin, CH-1216

Switzerland

RE: Declaration of Non-Use of Official Development Assistance by Project Owner of GS 2446

Hestian Innovation Ltd. [*Project Owner*]

As Project Owner of the above-referenced project, and acting on behalf of all Project Participants, I now make the following representations:

John O'Connor [*Project Representative*]

I hereby declare that I am duly and fully authorized by the Project Owner of the above-referenced project to act on behalf of all Project Participants and make the following representations:

I. The Gold Standard Documentation

I am familiar with the provisions of The Gold Standard Documentation relevant to Official Development Assistance (ODA). I understand that the above-referenced project is not eligible for Gold Standard registration if the project receives or benefits from Official Development Assistance with the condition that some, or all, of the carbon credits [CERs, ERUs, or VERs] coming out of the project are transferred to the ODA donor country. I hereby expressly declare that no financing provided in connection with the above-referenced project has come from or will come from ODA that has been or will be provided under the condition, whether express or implied, that any or all of the carbon credits issued as a result of the project's operation will be transferred directly or indirectly to the country of origin of the ODA.

II. Duty to Notify Upon Discovery

If I learn or if I am given any reason to believe at any stage of project design or implementation that ODA has been used to support the development or implementation of the project, or that an entity providing ODA to the host country may at some point in the future benefit directly or indirectly from the carbon credits generated from the project as a condition of investment, I will notify The Gold

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Standard immediately using the Amended ODA Declaration Form provided below.

III. Investigation

The Gold Standard reserves the right to conduct an investigation into any project it reasonably believes may be receiving ODA with the condition that some or all of the carbon credits from the project will be transferred to the ODA donor country.

IV. Sanctions

I am fully aware that the sanctions identified in The Gold Standard Terms and Conditions may be applied to me or the above-referenced project in the event that any of the information provided above is false or I fail to notify The Gold Standard of any changes to ODA in a timely manner.

I swear that all of the statements contained herein are true to the best of my knowledge.

Signed: _____

Name: John O'Connor

Title: Director

On behalf of: Hestian Innovation Ltd.

Place: _____