# THE GOLD STANDARD MICRO-SCALE SCHEME PROJECT DESIGN DOCUMENT FORM - Version 2.2

**CONTENTS**



**Annexes**

## SECTION A. General description of micro-scale project activity

### A.1 Title of the micro-scale project activity:

*>> Title: WWF Ningshan County High Efficient Cook Stove Project*

*>> Date & version of the PDD 11/08/2013 version 1*

### A.2. Project participants:

>>

| Name of Party involved (*) ((host) indicates a host Party) | Private and/or public entity (ies) project participants (*) (as applicable) | Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No) |
|---|---|---|
| China | WWF China (NGO) | No |
| China | South Pole Carbon Asset Management Consulting (Beijing) Ltd. (Private entity) | No |

### A.3 Description of the micro-scale project activity:

#### A.3.1. Location of the micro-scale project activity:

>>

##### A.3.1.1. Host Country:

>> P.R.China

##### A.3.1.2. Region/State/Province etc.:

>> Shaanxi Province

##### A.3.1.3. City/Town/Community etc:

>> Ningshan County of Ankang City

**A.3.1.4. Details of physical location, including information allowing the unique identification of this micro-scale project activity:**

>> The HES of the proposed project are distributed in the Huangguan, Xinchang and Simudi towns around the Huangguanshan Nature Reserve in Ningshan county.

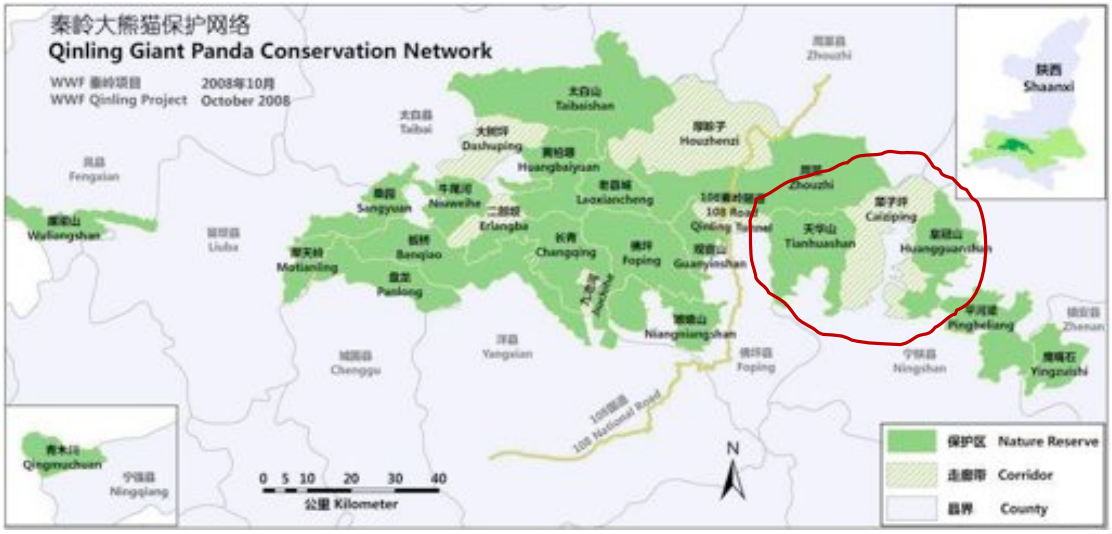
Coordinates of the towns

| Town | Latitude | Longitude |
|---|---|---|
| Huangguan | 33`38'39''-33`31'34'' | 108`17'50''-108`28'56'' |
| Xinchang | 33`44'20''-33`37'04'' | 108`10'40''-108`24'26'' |
| Simudi | 33`32'33''-33`26'31'' | 108`06'12''-108`10'37'' |

Pic.1 Location of Shaanxi

Pic.2 Location of Ningshan County

Pic.3 Location of Huangguanshan Nature Reserve




**A.3.2. Description including technology and/or measure of the micro-scale project activity:**

**>>**

The proposed project plans to reconstruct or improve 1,379 old cook stoves in the villages neighboring the giant panda habitat located within Huangguan Town, Simudi Town and Xinchang town of Ningshan County, Shaanxi Province during 2013 to 2014. The project aims to protect local forest resources and giant panda habitat as well as to improve the indoor living and hygiene environment of local

households by replacing the current low efficient fixed cook stoves in the kitchen with high-efficient ones.

Nowadays, wood is still the primary fuel source for cooking and heating in the local communities within the deep mountains in Ningshan County. Every year each household needs to collect a huge amount of wood from their forest area and store in their house. As a result, the forest has been degraded over years.

The high efficient cook stove is a mature technology in China, which can save about 40-70% wood by improving the thermal efficiency of the fuel, and it can also extract the smoke and gas out of the kitchen to better protect the health. Meanwhile, the project can significantly reduce the workload and time spent on cutting wood every year and hence improves the community development.

The proposed project will replace 1,379 conventional cook stoves—stoves which are used by the inhabitants living in the Huangguanshan Nature Reserve (henceforth HNR) in Shaanxi province, P.R. China—with firewood-saving cook stoves (HES). At present, the people who live in the reserve cut down a huge amount of trees each year for cooking, heating and other purposes, causing the reserve's forest to retreat rapidly.

Due to the HNR area's underdeveloped transportation infrastructure (please refer to Poverty prove), patchy electricity supply and high electricity prices, there is no affordable alternative to replace wood as a source of heat and power. Without outside financial support, such as a carbon subsidy or third party donation, the local people will not be able to afford to upgrade their stoves. To solve this challenge, ***WWF China*** act as the Project Owner, pay all the HES investment (in a upfront pattern) in return for future GS VERs derived from the project. The stove users will transfer the carbon credits generated from the proposed project to Project owner.

WWF have started the research of the proposed project since 2011. The GS Local stakeholder Consultation meeting was held on 19/06/2013 in Huangguan township. The construction started on 29/07/2013 and expects to be finished by the middle of 2014.

The FNR is located in the province of Shaanxi, in a mountainous (subtropical) area in China. The reserve is one of the important giant panda protect area as well as many other wild animals and plants.

### A.2.2. How the project reduces greenhouse gas

HES (see picture 4) reduces greatly the non-renewable biomass combustion and associated $CO_2$ emissions. At present, families living within the project boundary use firewood as the main fuel for cooking and heating. The Old Mud Stove (OMS, see picture 5) and Traditional Cooking Stove (TCS, see picture 6) are the main cooking instruments; no other cooking instruments are used. Due to low thermal efficiency, these old stoves use a considerable amount of firewood per year, causing local people to spend a lot of time gathering firewood. As populations increase, so too does the demand for firewood. This leads to more deforestation and an increase in the rate at which the MNR is retreating. In addition to deforestation, cooking with the old stoves causes health threatening smoke pollution, especially for women and children who typically spend more time in the kitchen area than men.

### A.2.3. Technology description

HES has been used for several decades in China. The technology is "mature." Compared with TCS and OMS, HES has an additional air flowing system, which includes a chimney and grate (see

pictures 7 and 8). The chimney and grate allow the firewood to be combusted completely (typically in the kitchen area) and the smoke to escape the room. A fire-block-circle (see picture 9) reduces the amount of thermal energy loss by keeping the hot smoke for a longer period of time under pots that run directly into the chimney. This allows the pots to absorb the thermal energy carried by the smoke. Experience shows that HES saves on wood consumption (thus less deforestation) and reduce cooking time.

The height of the HES is 75-80cm and chimney is 3-4m, the general size of burning room is 27*20*15cm. The chimney could be built inside or outside of the wall depending on the kitchen space.

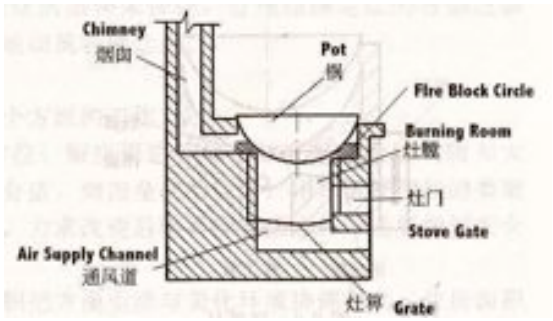
Typically, HES contains two pots with the diameter of 80cm, one for cooking food and another for forage for animals. The HES body is covered by tiles, which make the stove clean and bright compared to a mud stove.

Pic.4 High Efficient Stove (HES)

Pic.5 Old Mud Stove (OMS)

Pic.6 Traditional cooking stove in the project area (TCS)

Pic.7 Structure of HES




Pic.8 Grate of HES

Pic.9 Detail of Fire-Block-Circle

The project will construct 1,379 HES for local families for free within the span of two years. The project is expected to reduce GHG emissions by 8,692 $tCO_2e$ annually.

### A.2.4. Contribute to sustainable development

The project will contribute to the sustainable development in the region. The project will:

- Reduce the rate of deforestation and ease the human impact on the HNR,
- Reduce air pollution associated with cooking with the old stoves and protect human health in the process,
- Enhance species diversity (both flora and fauna) by preserving the natural forest, and
- Release women and children from the hard labor associated with wood procurement/cutting.

### A.3.3 Estimated amount of emission reductions over the chosen crediting period:

>>

A crediting period of fixed 10 (ten) years is selected for the project activity. An estimation of emissions reductions expected over the crediting period is provided in the table below.

| Years | Estimation of annual emission reductions in tonnes of $CO_2e$ |
|---|---|
| 06/08/2013-05/08/2014 | 2850 |
| 06/08/2014-05/08/2015 | 8692 |
| 06/08/2015-05/08/2016 | 8692 |
| 06/08/2016-05/08/2017 | 8692 |
| 06/08/2017-05/08/2018 | 8692 |
| 06/08/2018-05/08/2019 | 8692 |

| | |
|---|---|
| 06/08/2019-05/08/2020 | 8692 |
| 06/08/2020-05/08/2021 | 8692 |
| 06/08/2021-05/08/2022 | 8692 |
| 06/08/2022-05/08/2023 | 8692 |
| Total estimated reductions | 81078 |
| Total number of crediting years | 10 |
| Annual average over the crediting period of estimated reductions | 8,107 |

**A.3.4. Public funding of the micro-scale project activity:**

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No ODA support is involved in the project. Please refer to ODA declaration in Annex D.

**SECTION B. Application of an existing baseline and monitoring methodology or of a new methodology submitted as part of this project activity**

**B.1. Title and reference of the existing or new baseline and monitoring methodology applied to the micro-scale project activity:**

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CDM methodology AMS II G Version 05.0

**B.2 Justification of the choice of the methodology and applicability:**

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The methodology AMS.II.G Version 05.0 comprises appliances involving the efficiency improvements in the thermal applications of non-renewable biomass. Examples of these technologies and measures include the introduction of **high efficiency**[1] **biomass fired cook stoves**[2] or ovens or dryers and/or improvement of energy efficiency of existing biomass fired cook stoves or ovens or dryers.

At the same time, project participants are able to show that non-renewable biomass has been used since 31 December 1989, using survey methods or referring to published literature, official reports or statistics.

[1] The efficiency of the project systems as certified by a national standards body or an appropriate certifying agent recognized by it. Alternatively manufacturers' specifications may be used.

[2] Single-pot or multi-pot, portable or in-situ cook stoves with specified efficiency of at least 20%

The proposed project is a high efficiency biomass fired cook stove project with the specified efficiency around 30%. The new stoves will reduce the GHG emission by reducing the consumption of non-renewable biomass applied to national standard. The project also meets the requirement as dedicated in the methodology that non-renewable biomass has been used since 31 December 1989 because the local people have been using the wood biomass as fuel. Since then, the forest has retreated gradually as the rise of the population.

The project involves the transfer of 1,379 HES to local households. The project will reduce GHG emissions by 8,692 tCO2e annually, which met the application of the scope of Gold Standard micro scale project.

## B.3. Description of the project boundary:

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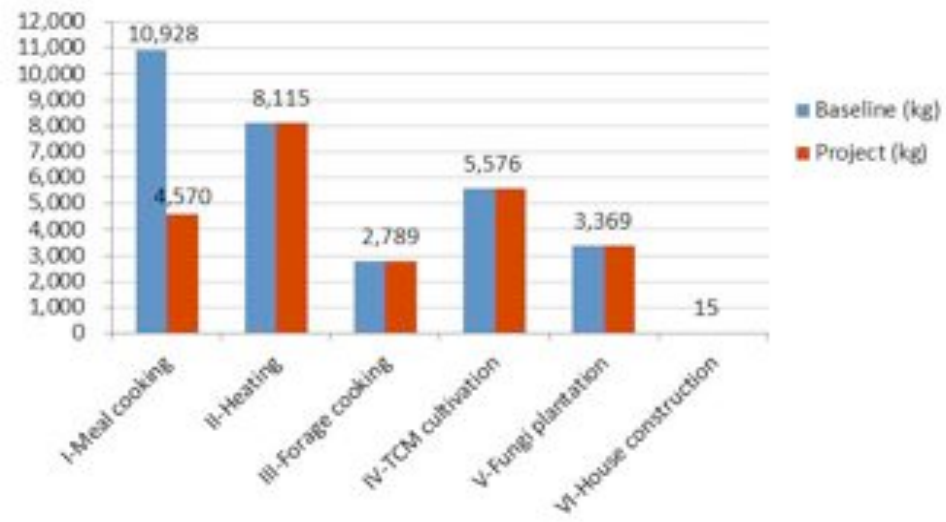
The boundary comprises a) the 1,379 households located in the towns of Huangguan, Xinchang and Simudi) and the firewood collection forest area.

## B.4. Description of the baseline and its development as per the chosen methodology:

>>

In order to give a clear and accurate description of the wood consumption in the baseline, wood consumption is divided into five categories (see below).

According to baseline survey, the wood consumption of the local communities mainly consist of six portions in the project area (Graph 1): I) cooking meals on fixed kitchen cookstove, II) heating with heating stove or fire pit, III) cooking forage for pigs on separate stove outdoors, IV) Traditional Chinese Medicine (TCM, typically Polyporus) cultivation, V) Fungi (mushroom and woodear) plantation and processing, and VI) house construction and fencing, where wood is used as the only fuel source for 1), 2), 3). For 4) and 5) wood is substrate to fungus. 6) only constitutes a very small portion of the total wood consumption.




Graph 1: The wood consumption per household in the baseline and project scenario

I. Meal cooking on fixed kitchen cookstove

Local communities use fixed stove in their kitchen for cooking three meals on a daily basis throughout the whole year. Currently there are two types of low-efficient stove in use. One is very old, mud stove (OMS), usually built 30-40 years ago yet functional till today, typically with two or three bowls, without chimney system and fire grate (Pic.5). The other is improved, traditional cooking stove (TCS), built in 1990s or early 2000s, typically with two or three bowls as well, with chimney added to the stove body and partially topped with ceramic tiles (Pic.6). Compared to OMS, TCS improves the kitchen environment by extracting out the cooking smoke, but it either still lacks most wood-saving considerations in terms of its inner structure, or has been severely degraded due to the long time use without well maintenance that the chimney, fire grate or other parts of the stove has been dysfunctional.

According to the baseline survey, OMS accounts for 21.7% of the total households (58 out of 267), and TCS accounts for 78.3% of the total households (209 out of 267). For the average efficiency of OMS in the project area, it the default value defined CDM methodology AMS.II.G. (Version 03, updated 15 April 2011), which is 10%. The average efficiency of TCS is randomly tested local rural energy office with 11 samples, which is 13.32%. The annual firewood consumption on meal cooking per household is 10,928kg in average. With HES (Pic.4) built in the kitchen as a replacement of OMS or TCS, the amount will be reduced significantly.

II. Heating with heating stove or fire pit

Heating stove is a widely-used facility in the local communities for heating room and for people to get together in the cold seasons, usually placed in the bedroom or living room; for some poor or big families, they still have open fire pit in their house. The heating season usually lasts five months from late October till next mid March for all the families, and it consumes considerable amount of wood within this high-altitude area. The annual firewood consumption on heating per household is 8,115kg in average.

III. Cooking forage for pigs

Typically, local families raise pigs for their own meat needs. The forage such as corn or greenfeed is usually being cooked first in certain seasons, with a frequency of every 2-3 days, on a big simply-constructed stove outside the house. The annual firewood consumption on cooking forage per household is 2,789kg in average.

IV. TCM cultivation

Polyporus cultivation is one of the income sources for local communities to sell as TCM product. This type of fungus grows and reproduces on the wood, which is buried underneath the ground and topped with tree branches. The annual wood consumption on growing Polyporus per household is 5,576kg in average.

Pic.8 Polyporus cultivation on the wood


V. Fungi plantation and processing

Mushroom and woodear plantation is another major income source for local communities. They cut or crush wood to use it as substrate to the fungus of woodear or mushroom, and also use wood as fuel source to dry and sterilize the mushroom. The annual wood consumption on growing and processing fungus per household is 3,369kg in average.

Pic.9 Detail of Fire-Block-Circle


VI. House construction and fencing

When constructing their houses, local communities will use a massive amount of wood for the roof and as pillars. But usually in every year there is only very few number of families within one village construct their houses, therefore in the baseline survey there are only two samples having house construction in the season. The wood consumption on home construction per household is 15kg in average.

As HES project is focused on the reduction of firewood on meal cooking on the fixed kitchen stove, only **category I** will be considered during GHG emission reduction calculation.

**B.5. 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:**

The Ningshan county is the poverty county in national wide in 2011, please see the *Poverty Prove*. The project is located in underdeveloped zone, and the project is engaged in benefiting the poor community.

At the same time, the single HES, with the GHG emission reduction of 6.3 ton $CO_2e$/year which is much lower than 600t$CO_2e$ per household, meet the additionality guideline of GS *STANDALONE MICRO--*

-*SCALE SCHEME RULES*[3]. So the project could be seen as additional, which means GHG emission won't be reduced in the absence of the registered micro-scale project activity.

## B.6 Emission reductions:

### B.6.1. Explanation of methodological options or description of new proposed approach:

>>

### B 6.1.1. ER Calculation Method

The emission reduction (ER) is calculated according to CDM methodology AMS.II.G.

Emission reductions are calculated as:

**Equation 1**

$$ER_y = B_{y,savings} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossilfuel} \times N_{y,i}$$

Where:

| | | |
|---|---|---|
| $ER_y$ | = | Emission reductions during year *y* in t $CO_2e$ |
| $B_{y,savings}$ | = | Quantity of woody biomass that is saved in tonnes per device |
| $f_{NRB,y}$ | = | Fraction of woody biomass saved by the project activity in year *y* that can be established as non-renewable biomass using survey methods or government data or default country |
| $NCV_{biomass}$ | = | Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.015 TJ/tonne, wet basis) |
| $EF_{projected\_fossilfuel}$ | = | Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 81.6 t $CO_2$/TJ[4] |
| $N_{y,i}$ | = | Number of project devices of type *i* operating in year *y,1379* |

### B.6.1.2. Wood Reduction ($B_{y, savings}$)

When determine the $B_{y, savings}$, option 2 is chose as the methodology,

3 http://www.cdmgoldstandard.org/wp-content/uploads/2012/05/v2.2_ANNEX-T.pdf

4 This value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis. It is assumed that the mix of present and future fuels used would consist of a solid fossil fuel (lowest in the ladder of fuel choices), a liquid fossil fuel (represents a progression over solid fuel in the ladder of fuel use choices) and a gaseous fuel (represents a progression over liquid fuel in the ladder of fuel use choices). Thus a 50% weight is assigned to coal as the alternative solid fossil fuel (96 t CO2/TJ) and a 25% weight is assigned to both liquid and gaseous fuels (71.5 t CO2/TJ for kerosene and 63.0 t CO2/TJ for liquefied petroleum gas (LPG).

**Equation 2**

$$B_{y,savings} = B_{old} \times (1 - \frac{\eta_{old}}{\eta_{new,y}})$$

Where:

| | | |
|---|---|---|
| $B_{old}$ | = | Quantity of woody biomass used in the absence of the project activity in tonnes per device |
| $B_{y,new,survey}$ | = | Annual quantity of woody biomass used during the project activity in tonnes per device, determined through a survey |
| $\eta_{old}$ | = | 1. Efficiency of the device being replaced (fraction); measured using representative sampling methods or based on referenced literature values use weighted average values if more than one type of device is being replaced;<br>2. A default value of 0.10 may be optionally used if the replaced device is a three stone fire, or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney; for other types of devices, a default value of 0.2 may be optionally used |
| $\eta_{new,y}$ | = | Efficiency of the device being deployed as part of the project activity (fraction) |

$B_{old}$ is derived from the baseline survey of local usage as option (a).

$B_{old}$ are determined by sample during baseline survey in air-dried mass[5]. The quantity of the firewood consumption is obtained by face-to-face interview and onsite measure. Since the local people have no clear idea about the weight of the wood is, number of wood bundles is used as a proxy measure. The mass of the wood bundle was weighted by the surveyor later on.

According to the sample guideline in the methodology, when the project proponent chooses to inspect annually, a 90% confidence interval and a 10% margin of error requirement shall be achieved for the sampled parameters.

The wood consumption of each family follows a normal distribution; the variance is unknown at the time of survey, so the following equation applies:

**Equation 3**

$$\frac{\overline{X} - \mu}{S/\sqrt{n}} \sim t(n-1)$$

5 http://cdm.unfccc.int/filestorage/w/x/EFA5G1R7XT9Z8DI3SCV6KQPYWL0OMB/Final%20response.pdf?t=MUx8bXNqMzR0fDCeVAnTJ7J0bOkcY7i6ZD7g

Where

| | | |
|---|---|---|
| $\bar{x}$ | = | Even weight of wood consumption from the survey date |
| μ | = | Wood consumption of each device |
| S | = | Standard deviation of the sample |
| n | = | Sample quantity, 267 in this project |
| t (n-1) | = | Student Distribution with the degree of freedom (266) |

The 90% confident interval is

**Equation 4**

$$\left(\bar{x} \pm \frac{s}{\sqrt{n}} t_{\alpha/2}(n-1)\right) \sim \left(10.928 \pm \frac{2.578}{\sqrt{267}} * 1.645\right) \sim (10.928 \pm 0.259)$$

Where α=1-90%=0.1

After the analysis of the survey data, the 90% confident interval is (10.928±0.259) with the margin of error is 2.38%, which is lower than required 10%, so the sample accuracy meets the requirement of the methodology.

### B.6.1.3. Stove efficiency (η)

**Table 1. Thermal Efficiencies of the Stoves**

| | **OMS ($\eta_{old}$)** | **TCS ($\eta_{old}$)** | **HES ($\eta_{new}$)** |
|---|---|---|---|
| **η** | 10% | 13.32% | 25% |
| **Data source** | Methodology default value | Test report of Rural energy Office (see annex 3) | Conservative value as similar report |

OMS, which has neither chimney nor grate, is made by mud in a rough way. There is no air supply inlet in the stove. So the default thermal efficient of 10% is applicable to OMS, as indicated in the methodology as the follows:

*As indicated in the methodology, a default value of 0.10 may be optionally used if the replaced system is a three stone fire, or a conventional system with no improved combustion air supply or flue gas ventilation system, i.e. without a grate or a chimney;*

According to the methodology, it should *use weighted average values if more than one type of device is being replaced.* In the 267 sampled households during baseline survey, there are 58 OMS and 209 TCS old stoves. So the $\eta_{old}$ value used in the ER calculation is the weighted average thermal efficiency of 12.5988%.

Given that the performance of the HES depends largely on the skills of those who construct it, and given that the finial effect of the HES of the proposed project needs to be proved, we take the most conservative value of 25% in our project, which meets the requirement in the

methodology. The actual thermal efficiency of the HES will be determined by Water-Boiling-Test after construction.

The wood saving of stove i during the baseline survey in year y $B_{y,savings,i}$ is determined as follows:

**Equation 5**

$$B_{savings,y} = B_{old} * 0.95 * \left(1 - \frac{\eta_{old}}{\eta_{new}}\right)$$

Where

| | | |
|---|---|---|
| $B_{old,i}$ | = | Quantity of woody biomass used in the absence of the project activity in tonnes per device within baseline survey |
| $\eta_{old,i}$ | = | 12.5988%. |
| $\eta_{new}$ | = | 25% |
| **0.95** | = | Leakage factor |

### B 6.1.4. Non-renewable Biomass Ratio ($f_{NRB,y}$)

**Equation 6**

$$f_{NRB,y} = \frac{NRB}{NRB + DRB}$$

Where,

NRB- Non renewable woody biomass

DRB-Demonstrably renewable woody biomass

According to the methodology AMS.II.G, the woody biomass could be regarded as renewable (DRB) when they are originated from forest land areas where:

(a) The land area remains a forest; and

(b) Sustainable management practices are undertaken on these land areas to ensure, in particular, that the level of carbon stocks on these land areas does not systematically decrease over time (carbon stocks may temporarily decrease due to harvesting); and

(c) Any national or regional forestry and nature conservation regulations are complied with.

NRB is applicable to the biomass as long as at least two of the following supporting indicators are shown to exist:

- A trend showing an increase in time spent or distance travelled for gathering fuel-wood, by users (or fuel-wood suppliers) or alternatively, a trend showing an increase in the distance the fuel-wood is transported to the project area;
- Survey results, national or local statistics, studies, maps or other sources of information, such as remote-sensing data, that show that carbon stocks are depleting in the project area;

- Increasing trends in fuel wood prices indicating a scarcity of fuel-wood;
- Trends in the types of cooking fuel collected by users that indicate a scarcity of woody biomass.

As the forest management regulation, the local forest is divided into National-owned Forest which is under strict protect and Firewood Collecting Forest where is kept for firewood and other usage. All the firewood consumed within the project is from Firewood Collecting Forest where deforestation is obvious.

According to the baseline survey, all the informants showed that the **firewood price** and **firewood gathering distance and time** are increasing and **type of firewood** has changed over time. In the past, it was common to cut a big tree for fuel. Now, smaller trees are typically used along with small branches and bush scraps. For the local forest source, it is clearly not a sustainable trend.

For the wood collecting area, the mean forest increment is 11,332 tonnes/year (Equation 8). Total wood consumption in baseline of 1,379 (n) families was 35,738 tonnes/year while the project could reduce the woody biomass of 7,377 tonnes in absolutely dry mass.

As the guideline, when the projected biomass consumption by the project (after the implementation of the project) (35,738-7,377=28,360 tonnes/year) > Annual Increment (11,332 tonnes/year) , the project can claim all emission reductions from its fuel wood savings. So in the proposed project, all the wood biomass saved from the project could be seen as non-renewable biomass, which means the annually forest increment is significantly lower than the forest cutting by local people, The retreat is obvious to the forest not only before the project but also after the project implementation.

So all the woody biomass used in the project, which collected from the Firewood Collecting Forest, should be regarded as NRB rather than DRB as the definition in AMS II.G , which means

**Equation 7**

$$f_{NRB,y} = \frac{NRB}{NRB + DRB} = \frac{NRB}{NRB + 0} = 100\%$$

**Compare of the Forest increment and loss**

- **Forest increment**

The forest increment calculation is based on the latest relevant official forest study from Ningshan Forest Bureau. The study provides the increment rate of firewood forest in the project, which is also the most accurate data by now. The forest area times the unit forest increment rate could determine the forest stock increment.

According to local forest regulation, the firewood reserve forest area is fixed for each family. Woodcutting outside the firewood reserve area is completely forbidden now. S is 5,987 ha according to the Official estimate (see ***Firewood collecting area prove***).

Mean annual increment is calculated using the following formula,

**Equation 8**

$BI_y = S*G*\rho = 11{,}332$ tonnes/year

Where:

| | | |
|---|---|---|
| $BI_y$ | = | Biomass Increment within the firewood collection area in year y (ton/year) |
| S | = | Wood collecting area for all the households who collect firewood within the project boundary, 59.87 $km^2$ |
| G | = | Average growth rate of local forest, 2.8 $m^3/(ha \cdot year)$.[6] |
| ρ | = | Dry mass density of the firewood. The oak value of 0.676 $tDM/m^3$ with the highest density[7] within the local common firewood was used as the conservative consideration. |

### B.6.1.5. Leakage

$B_{old}$ multiplied a leakage factor of 95% in this project to avoid leakage survey as the methodology.

Baseline stoves continue to be used would be excluded in the calculation.

### B.6.1.6. Emission Reduction ($ER_y$)

The ER per stove $ER_{unit,y}$ is calculated as follows:

**Equation 9**

$$ER_y = B_{y,savings} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossilfuel} \times N_{y,i}$$
$$= 5.15 * 100\% * 0.015 * 81.6 * 1379 = 8692 tCO_2e$$

### B.6.2. Data and parameters that are available at validation:

>>

| **Data / Parameter:** | $B_{y,savings}$ |
|---|---|
| Data unit: | Tonne/year/house |
| Description: | *Quantity of woody biomass that is saved in tonnes* |
| Source of data used: | ER spreedsheet |
| Value applied: | 5.15 |

6 Prove of forest increment of Ningshan county

7 Guidelines for Carbon Accounting and Monitoring [M]. Beijing, China Forestry Press 2008: 63-64

| | |
|---|---|
| Justification of the choice of data or description of measurement methods and procedures actually applied | |
| Any comment: | |

| | |
|---|---|
| **Data / Parameter:** | $f_{NRB,y}$ |
| Data unit: | % |
| Description: | *Fraction of woody biomass saved by the project activity in year* y *that can be established as non-renewable biomass* |
| Source of data used: | PDD |
| Value applied: | 100% |
| Justification of the choice of data or description of measurement methods and procedures actually applied | See B 6.1.4. in PDD |
| Any comment: | |

| | |
|---|---|
| **Data / Parameter:** | $NCV_{biomass}$ |
| Data unit: | *TJ/tonne* |
| Description: | *Net calorific value of the non-renewable woody biomass that is substituted* |
| Source of data used: | *IPCC default for wood fuel* |
| Value applied: | *0.015 TJ/tonne* |
| Justification of the choice of data or description of measurement methods and procedures actually | |

| | |
|---|---|
| applied | |
| Any comment: | |

| **Data / Parameter:** | $EF_{project\_fossilfuel}$ |
|---|---|
| Data unit: | *$tCO_2/TJ$*[8] |
| Description: | *Emission factor for the substitution of non-renewable woody biomass by similar consumers.* |
| Source of data used: | CDM Methodology AMS.II.G Version 05.0 |
| Value applied: | 81.6 |
| Justification of the choice of data or description of measurement methods and procedures actually applied | |
| Any comment: | |

| **Data / Parameter:** | $\eta_{old}$ |
|---|---|
| Data unit: | % |
| Description: | Efficiency of the system being replaced |
| Source of data used: | Baseline Report |
| Value applied: | 12.5988% |
| Justification of the choice of data or description of measurement methods and | Weight average value from baseline survey.<br><br>The relevant value of the different baseline device is from default value in methodology and Local rural energy office test result. |

[8] This value represents the emission factor of the substitution fuels likely to be used by similar users, on a weighted average basis. It is assumed that the mix of present and future fuels used would consist of a solid fossil fuel (lowest in the ladder of fuel choices), a liquid fossil fuel (represents a progression over solid fuel in the ladder of fuel use choices) and a gaseous fuel (represents a progression over liquid fuel in the ladder of fuel use choices). Thus a 50% weight is assigned to coal as the alternative solid fossil fuel (96 $tCO_2/TJ$) and a 25% weight is assigned to both liquid and gaseous fuels (71.5 $tCO_2/TJ$ for Kerosene and 63.0 $tCO_2/TJ$ for Liquefied Petroleum Gas (LPG).

| | |
|---|---|
| procedures actually applied | |
| Any comment: | |

| **Data / Parameter:** | **n** |
|---|---|
| Data unit: | |
| Description: | Quantity of all the households in the three targeted towns |
| Source of data used: | Official Estimate |
| Value applied: | 1379 |
| Justification of the choice of data or description of measurement methods and procedures actually applied | This parameter is used to calculate the total firewood cutting from the wood collecting forest area.<br>Please See ***Family number prove*** |
| Any comment: | |

| **Data / Parameter:** | **S** |
|---|---|
| Data unit: | ha |
| Description: | The area of wood collecting area of all the 1,379 surrounding inhabitants within and nearby the project boundary. |
| Source of data used: | Official estimation |
| Value applied: | 5,987 |
| Justification of the choice of data or description of measurement methods and procedures actually applied | Details please See ***Firewood collecting area prove*** |
| Any comment: | |

| **Data / Parameter:** | **G** |
|---|---|
| Data unit: | $m^3/(ha \cdot year)$ |
| Description: | Average grow rate of local forest |
| Source of data used: | Forest survey of Ningshan Forest Bureau |
| Value applied: | 2.8 |
| Justification of the choice of data or description of measurement methods and procedures actually applied | The date is from the most recent research of Ningshan Forest Bureau. Please see ***Prove of forest increment of Ningshan county*** |
| Any comment: | |

| **Data / Parameter:** | **ρ** |
|---|---|
| Data unit: | $tDM/m^3$ |
| Description: | Dry mass density of the firewood |
| Source of data used: | Guidelines for Carbon Accounting and Monitoring [M]. Beijing, China Forestry Press 2008: 63-64 |
| Value applied: | 0.676 |
| Justification of the choice of data or description of measurement methods and procedures actually applied | Use the largest density of the local tree of oak for the purpose of conservative. |
| Any comment: | |

| **Data / Parameter:** | $B_{All}$ |
|---|---|
| Data unit: | Tonne/year/house |
| Description: | *Quantity of total woody biomass consumption per family in the baseline* |
| Source of data used: | Baseline Report |

| | |
|---|---|
| Value applied: | 30.792 |
| Justification of the choice of data or description of measurement methods and procedures actually applied | |
| Any comment: | |

### B.6.3 Ex-ante calculation of emission reductions:

>>

**Emission Reduction ($ER_y$)**

The ER per stove $ER_{unit,y}$ is calculated as follows:

**Equation 9**

$$ER_y = B_{y,savings} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossilfuel} \times N_{y,i}$$
$$= 5.15 * 100\% * 0.015 * 81.6 * 1379 = 8692 tCO_2e$$

### B.6.4 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 leakage ($tCO_2$) | Estimation of overall emission reductions ($tCO_2$) |
|---|---|---|---|---|
| Year 1 | 3000 | 0 | 150 | 2850 |
| Year 2 | 9149 | 0 | 457 | 8692 |
| Year 3 | 9149 | 0 | 457 | 8692 |
| Year 4 | 9149 | 0 | 457 | 8692 |
| Year 5 | 9149 | 0 | 457 | 8692 |
| Year 6 | 9149 | 0 | 457 | 8692 |
| Year 7 | 9149 | 0 | 457 | 8692 |
| Year 8 | 9149 | 0 | 457 | 8692 |
| Year 9 | 9149 | 0 | 457 | 8692 |
| Year 10 | 9149 | 0 | 457 | 8692 |
| Total ($tCO_2$) | 85341 | 0 | 4263 | 81078 |

**B.7 Application of a monitoring methodology and description of the monitoring plan as per the existing or new methodology applied to the micro-scale project activity:**

**B.7.1 Data and parameters monitored:**

| **Data / Parameter:** | $\eta_{new}$ |
|---|---|
| Data unit: | % |
| Description: | The thermal efficiency of the HES |
| Source of data to be used: | Onsite measure |
| Value of data | |
| Description of measurement methods and procedures to be | National Standard: NY/T 8-2006 "Thermal performance test method for civil firewood stoves" would be followed for stove test. The sample would follow the latest CDM guidance *General guidelines for sampling and surveys for small-scale CDM project activities*. |

| | |
|---|---|
| applied, inc. frequency: | |
| QA/QC procedures to be applied: | Annually |
| Any comment: | The efficiency would be test by rural energy expert.<br>The sample scale would follow 10/90 precision |

| | |
|---|---|
| **Data / Parameter:** | **$N_{y,i}$** |
| Data unit: | |
| Description: | Number of project devices of type *i* operating in year *y* |
| Source of data to be used: | Onsite survey |
| Value of data | |
| Description of measurement methods and procedures to be applied, inc. frequency: | Household stove-check if the stove is under normal usage by sample. The sample would follow the latest CDM guidance *General guidelines for sampling and surveys for small-scale CDM project activities.* |
| QA/QC procedures to be applied: | Annually |
| Any comment: | The sample scale would follow 10/90 precision |

### B.7.2 Description of the monitoring plan:

>>

### B.7.2.1. Stove Efficiency

**Table 2. Project implementation Structure**

| Content | Responsible part |
|---|---|
| Stove construction management | WWF Xi'an Programme Office |

| | |
|---|---|
| Carbon development | South Pole Carbon Asset Management (Beijing) Ltd. |
| Monitoring plan implementation | Huangguanshan Nature Reserve |

As stipulated in the methodology, monitoring shall consist of checking the efficiency of all appliances or a representative sample thereof, at least once every two years (biennial) to ensure that they are still operating at the specified efficiency ( $\eta_{new}$) or replaced by an equivalent in service appliance. Where replacements are made, monitoring shall also ensure that the efficiency of the new appliances is similar to the appliances being replaced. Monitoring shall also consist of checking of all appliances or a representative sample thereof, at least once every two years (biennial) to determine if they are still operating or are replaced by an equivalent in service appliance.

In the proposed project, the efficiency and the using rate of the cook stove will be studied by sample annually to guarantee the HES is working in good condition. At the same time, Huangguan Mountain Nature Reserve and the local manage team will respond to issues related to cook stove maintenance during the usage of local families.

### B.7.2.2. Leakage

In the event that people outside of the project boundary who previously used renewable energy sources use the wood saved in the project, $B_{old}$ should multiple a leakage factor of 95% as the methodology.

### B.7.2.3. Replaced instruments

Monitoring shall ensure that the replaced low efficiency appliances are disposed of and not used within the boundary or within the region.

Because both OMS and TCS cannot be moved, and the replaced old OMS must be dismantled before building up the new ones (due to the limit indoor space), the chance of leakage caused by the displaced low efficiency appliances is quite small. The dismantling of the MS shall be recorded and monitored during the construction process.

### B.7.2.4. Monitoring stove construction

Because the project could last as long as two years and the HES will be put into use progressively as the construction process, the stove onsite construction progress must be well monitored and recorded. The information such as HES construction start date, employing start date, the HES location and the fate of OMS and TCS shall be record by Huangguan Mountain Nature Reserve.

### B.7.2.5. Data archive

The local management team and for Huangguan Mountain Nature Reserve shall establish a data archive (electronic database) once construction starts. The database will include the identification of the stove user, and the dates when the HES is finished and put into usage. The monitoring information (e.g., efficiency check of the HES) shall be recorded in the database.

All monitored data required for verification and issuance will be stored for two years after the end of the actual crediting period or the last issuance of VERs for the project activity, whichever comes later.

**B.8 Date of completion of the application of the existing or new baseline and monitoring methodology and name of the responsible person(s)/entity(ies)**

>>

## SECTION C. Duration of the project activity / crediting period

### C.1 Duration of the project activity:

#### C.1.1. Starting date of the project activity:

>>

29/07/2013 (when the first HES construction started could be seen as the start date of the project implementation)

#### C.1.2. Expected operational lifetime of the project activity:

>>

10 years

### C.2 Choice of the crediting period and related information:

#### C.2.1. Renewable crediting period

##### C.2.1.1. Starting date of the first crediting period:

>>

n/a

##### C.2.1.2. Length of the first crediting period:

>>

n/a

**C.2.2. Fixed crediting period:**

**C.2.2.1. Starting date:**

>>

06/08/2013 when the first HES was put into use could be seen as the start date of the credit period.

**C.2.2.2. Length:**

>>

10 years

## SECTION D. Stakeholders' comments

>>

**D.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*

D.1.1 Agenda of physical meeting

Date: 08/06/2013

| Ref. | Time | Content |
|---|---|---|
| 1 | 10:40-10:50 | Meeting subject and project and participants introduction. |
| 2 | 10:50-11:00 | Question and clarify of the project. |
| 3 | 11:00-11:25 | Blind sustainable form and development discussion. |
| 4 | 11:25-11:30 | Monitoring plan discussion. |
| 5 | 11:30-11:45 | Fill in the Evaluation Form. |
| 6 | 11:45 | Project comments and grievance collecting method declaration. |

D.1.2 Non-technical summary

This is project plans to reconstruct or improve 1379 cook stoves in community villages neighboring the giant panda habitat located within Huangguan Town, Simudi Town and Xinchang town of Ningshan County, Shaanxi Province during 2013 to 2014. The project aims to protect local forest resources and giant panda habitat as well as to improve the indoor living and hygiene

environment of local households by replacing the current low efficient fixed cook stoves in the kitchen with high-efficient ones.

Nowadays, wood is still the primary fuel source for cooking and heating in the local communities within the deep mountains in Ningshan County. Every year each household needs to collect a huge amount of wood from their forest area and store in their house. As a result, the forest has been degraded over years.

The high efficient cook stove is a mature technology in China, which can save about 40~60% wood by improving the thermal efficiency of the fuel, and it can also extract the smoke and gas out of the kitchen to better protect the health. Meanwhile, the project can significantly reduce the workload and time spent on cutting wood every year and hence improves the community development.

D.1.3 Invitation track table

| Category code | Organisation (if relevant) | Name of invitee | Way of invitation | Date of invitation | Confirmation received? |
|---|---|---|---|---|---|
| A | Villager | | Post | 02/06/2013 | N |
| B | Agriculture and Industry department of Ningshan | Zhang Zhiqing | Telephone | 31/05/2013 | Y |
| B | Forest Bureau of Ningshan | Xu Yonghui | Telephone | 31/05/2013 | Y |
| B | Alleviate poverty Office of Ningshan | Zhang Yunchao | Telephone | 31/05/2013 | Y |
| B | Major of Huangguan, Xinchang and Simudi towns | Sun Li, Huang Yunyi and Xue Yuanyou | Telephone | 31/05/2013 | Y |
| C | NDRC | master@ccchina.gov.cn | Email | 26/05/2013 | N |
| D | Association of the tourist in Huangguan town | Zhu Yunde | Telephone | 07/06/2013 | Y |
| E | Gold Standard Beijing office | Annyta Luo | Email | 26/05/2013 | Y |
| F | REEEP, Mercycorps, Helio-International, WWF, PCD | info@reeep.org donorservices@mercycorps.org helio@helio-international.org | Email | 26/05/2013 | No |

| | | | | | |
|---|---|---|---|---|---|
| | | wwfchina@wwfchina.org<br>info@pcd.org.hk | | | |

D.1.4 Text of invitations sent

Dear Sir/Madam,

We would like to invite you to attend the shareholder hearing meeting on the Project of GS VER Cookstove improvement for the communities surrounding Giant Panda Habitat in Ningshan County, Shaanxi Province. According to the Golden Standards methodology requirement, your participation may be very helpful to the success of this project.

From 2013 to 2014, Huangguanshan Nature reserve in cooperation with WWF plans to build or modify the fixed cookstoves in 14 community villages located within Huangguan Town, Simudi Town and Xinchang Town, which are the communities surrounding giant panda habitat in Ningshan County. The objective of this project is focused on improving the thermal efficiency of the current cookstoves and thus to reduce the firewood use. It is expected that with the project implementation the local forests can be saved and protected, the carbon dioxide emission be decreased and the health of households in rural areas be improved.

Nowadays, the local communities are still replying on wood as the only fuel sources for cooking and heating. Every year, each household cuts and consumes a huge amount of firewood from their forest area, which has led to that the forest has been degraded over years. High efficient stove is mature technology in China and it can save around 40% to 60% fuel use by improving the thermal efficiency. It also extracts smoke and gas out of the kitchen, which provides a clean and smoke-free kitchen environment for households. At the meantime, it significantly reduces the workload and time for the local communities spent on firewood collection.

The meeting will be held on June 8th, 2013, in Huangguan township government of Ningshan County, Shaanxi Province. Your participation is welcome. Due to the project budget is really small scale and limited, your cost on attending the meeting will not be covered.

Thank you,

XXXX
Ningshan Huangguanshan Nature Reserve

D.1.5 Other consultation method used

Consulting the Rural Energy Office of Ningshan County to discuss the feasibility of the stove type and old stove situation.

**D.2. Summary of the comments received:**

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

D.2.1 Outcome of the meeting

No negative comment was received in the meeting. All the participants showed their support and expectation for the proposed project in the meeting.

One of the villagers wondered if there is any choice to get the government subsidy beside the project, the meeting holder explained that the subsidy has expired several years ago.

D.2.3 List of participants

| **Participants list** | | | | | |
|---|---|---|---|---|---|
| Date and time:08/06/2013 | | | | | |
| Location: Committee Office of Youpingfang Village, Huangguan Town, Ningshan County | | | | | |
| Category Code | Name of participant, job/ position in the community | Male/ Female | Signature | Organisation (if relevant) | Contact details |
| B | Xu Yongwang/Engineer | M | | Ningshan Forest Bureau | 13700251292 |
| B | Zhu Ping/officer | M | | Ningshan Forest Bureau | 13891531910 |
| B | Xue Yuanyou/Vice town major | M | | Simudi town | 13891587549 |
| B | Huang Yunyi/Vice town major | M | | Xinchang town | 13700251181 |
| B | Liu Gefei/Officer | M | | Ningshan Huangguanshan Nature Reserve | 13992583899 |
| B | Deng Pingyan/Officer | M | | Ningshan Huangguanshan Nature Reserve | 13571456879 |
| B | Liu Xiaoshan/Officer | M | | Ningshan Huangguanshan Nature Reserve | 18909153339 |
| B | Yu Gehuan/Officer | M | | Ningshan Huangguanshan Nature Reserve | 18791580347 |
| B | Peng Tao/Officer | M | | Ningshan Huangguanshan Nature Reserve | 13992533699 |
| A | Shi Weige | | | | 13772241825 |
| A | Yi Songming | M | | | 13909150645 |
| B | Sun Li/Vice Major of Huangguan Town manager | F | | Huangguan Town government | 13259156088 |
| A | Zhu Deying/ Villager | M | | | 13571420907 |

| | | | | | |
|---|---|---|---|---|---|
| A | Fan Yingkui/ Villager | M | | | 13991559410 |
| A | Wu Hengxi/ Villager | M | | | 13772230995 |
| A | Fan Yingkai/ Villager | M | | | |
| A | Chen Guanghuan/ Villager | M | | | |
| A | Lv Chengying/ Villager | F | | | 13991551106 |
| A | Zhang Qun/ Villager | F | | | 13991550468 |
| A | Xiong Dong/ Villager | M | | | 13992501853 |
| A | Fan Yingfu/ Villager | M | | | 15991189452 |
| A | Hu Zixiu/ Villager | F | | | |
| A | Lu Zuoxian/ Villager | M | | | |
| A | Wang Wenfa/ Villager | M | | | |
| A | Wang Shangkai/ Villager | M | | | 13881522547 |
| A | Cheng Xianyu/ Villager | F | | | |
| A | Wang Guangcui/ Villager | F | | | 13772246221 |
| A | Chen Daocui/ Villager | F | | | 15991182016 |
| A | Yue Zhongfang/ Villager | F | | | 13992592421 |
| A | Shi Weifen/ Villager | F | | | |
| A | Chen Yongbo/ Villager | M | | | 18791554361 |
| A | Gao Yuancong/ Villager | F | | | |
| A | Gao Wenqu/ Villager | M | | | 13649157528 |
| A | Lu Kaiyou/ Villager | M | | | 13571425917 |
| A | Cheng Liangbing/ Villager | M | | | 15029452426 |
| A | Tan Chengyu/ Villager | F | | | 6061079 |
| A | Chen Yumei/ Villager | F | | | 13772230995 |
| A | Yue Zhongyu/ Villager | F | | | 13649157567 |
| A | Wang Shangzhou/ Villager | M | | | 13571427200 |
| A | Gu Yongcai/ Villager | M | | | 15229557060 |
| A | Tang Kaifa/ Villager | M | | | 15992549706 |
| A | Liu Xianqin/ Villager | F | | | 13571441589 |
| D | Zhu Yunde/Manager | M | | Association of Huangguan tourist | 13992535116 |
| A | Xu Jiaxiang/ Villager | F | | | |
| A | Gao Fei/ Villager | M | | | |
| A | Gao Yuanshuai/ Villager | M | | | |
| A | Ma Quanxi/ Villager | M | | | |
| A | Chen Kexiao/ Villager | M | | | |

| | | | | | |
|---|---|---|---|---|---|
| A | Wang Fangwu/ Villager | M | | | |
| A | Guo Zhilian/ Villager | F | | | |
| A | Pu Jianchun/ Villager | F | | | |
| A | Gao Li/ Villager | F | | | |
| A | Wang Wenxiang | F | | | |
| F | Wan Hui/ Officer | F | | WWF | 15029755355 |
| F | Liu Junli/ Officer | M | | WWF | 13609287975 |

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

*>> Please discuss how the stakeholder's comments have been addressed and include the changes to the design of the programme based on their feedback.*

There is no necessary of changing the project design based on the stakeholders' comments.

**D.4. Report on the Continuous input / grievance mechanism:**

**>>**

*Discuss the Continuous input / grievance mechanism expression method and details, as discussed with local stakeholders*.

The following input/grievance method was published in the meeting.

| | Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator) | Justification |
|---|---|---|
| Continuous Input / Grievance Expression Process Book | The book is kept in the office of Ningshan Huangguanshan Nature Reserve**.** | Participants of the LSC meeting is invited to contact the Nature reserve for comments or grievances via phone or book. |
| Telephone access | 13992583899 | Liu Gefei, the major of the Ningshan Huangguanshan Nature Reserve |
| Internet/email access | gefeiliu6@126.com | Liu Gefei, the major of the Ningshan Huangguanshan Nature Reserve |
| Nominated Independent Mediator (optional) | n/a | n/a |

*All issues identified during the crediting period through any of the Methods shall have a mitigation measure in place that should be added to the monitoring plan.*

## D.5. Report on stakeholder consultation feedback round:

>>

To be supplied during validation stage.

**Annex 1**

**CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY**

| | |
|---|---|
| Organization: | South Pole Carbon Asset Management Consulting （Beijing） Ltd. |
| Street/P.O.Box: | Jianguo Ave B-118 |
| Building: | The Exchange Beijing |
| City: | Beijing |
| State/Region: | Beijing |
| Postfix/ZIP: | 100022 |
| Country: | China |
| Telephone: | +86-10-84549953 |
| FAX: | +86-10-84549953 |
| E-Mail: | info@southpolecarbon.com |
| URL: | http://www.southpolecarbon.com |
| Represented by: | Justin Qu |
| Title: | Project Manager |
| Salutation: | Mr. |
| Last Name: | Qu |
| Middle Name: | n/a |
| First Name: | Justin |
| Department: | Implementation |
| Mobile: | |
| Direct FAX: | +86-10-84549953 |
| Direct tel: | +86-10-84549953 |
| Personal E-Mail: | j.qu@southpolecarbon.com |

Annex 2 - **Information regarding Public Funding**

The Gold Standard®
Premium quality carbon credits

Date: [*July 23rd, 2013*]

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 2429]

[*Project Owner*]

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

[*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:

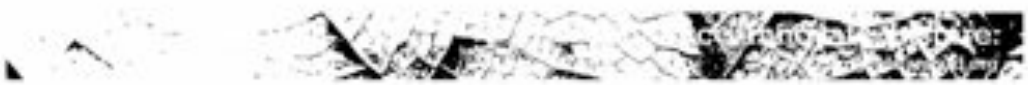
**I. The Gold Standard Documentation**

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 of 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 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: 

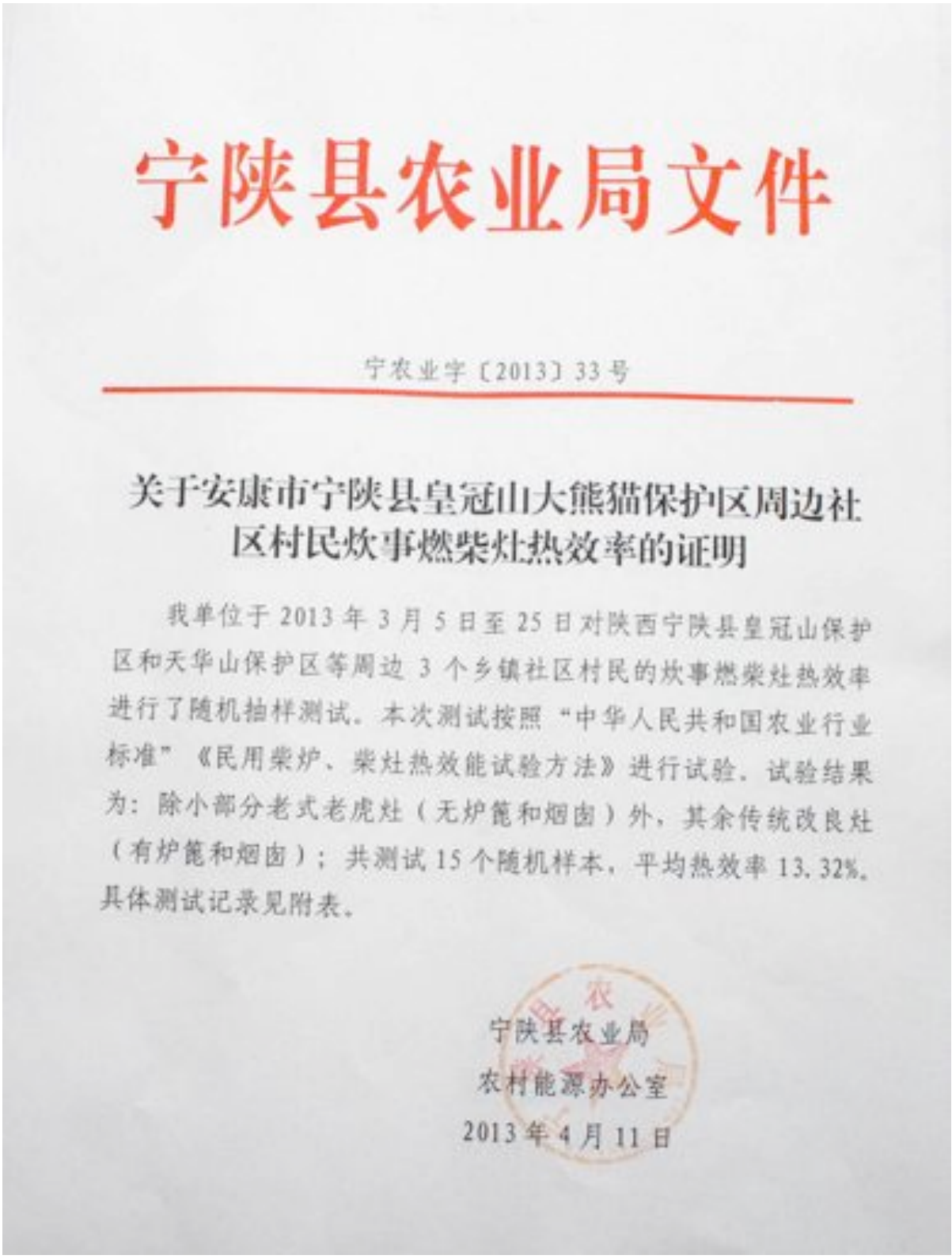
Name: Peter Beaudoin

Title: Chief Executive Officer

On behalf of: World Wide Fund for Nature Beijing Office

Place: Beijing, China

Annex 3 – **Stove thermal efficiency test report**



# 宁陕县农业局文件

宁农业字〔2013〕33号

## 关于安康市宁陕县皇冠山大熊猫保护区周边社区村民炊事燃柴灶热效率的证明

我单位于2013年3月5日至25日对陕西宁陕县皇冠山保护区和天华山保护区等周边3个乡镇社区村民的炊事燃柴灶热效率进行了随机抽样测试。本次测试按照“中华人民共和国农业行业标准”《民用柴炉、柴灶热效能试验方法》进行试验。试验结果为：除小部分老式老虎灶（无炉篦和烟囱）外，其余传统改良灶（有炉篦和烟囱）；共测试15个随机样本，平均热效率13.32%。具体测试记录见附表。

宁陕县农业局
农村能源办公室
2013年4月11日