CLEAN DEVELOPMENT MECHANISM
PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD)
Version 03 - in effect as of: 22 December 2006

CONTENTS

Annexes

SECTION A. General description of small-scale project activity

A.1 Title of the small-scale project activity:

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Heqing Solar Cooker Project II
Version of document: 9
Date of document: 3 August 2011

A.2. Description of the small-scale project activity:

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"Heqing Solar Cooker Project II" (the proposed project) is located on the rural area of Zhangye, Gansu province in northwestern China. Implemented by Beijing Harmonious Energy Development Co., Ltd., the proposed project will install 49,000 solar cookers for the rural residents. The rated power of each solar cooker is 910 W and the total capacity of the proposed project is 44.59 MW thermal. According to an official document from the local governmental, coal is overwhelmingly the main energy source for rural residents in the project region (for detailed information on baseline, please refer to section B.4). The proposed project will enable the rural residents to efficiently substitute solar energy for the fossil fuel (coal) used in daily cooking and water boiling, avoiding CO_2 emission that would be generated by fossil fuel consumption. It is estimated that 143,762 tCO_2e emission reductions will be produced annually.

The development of the proposed project is in line with the priority choice of Chinese energy sector, and it will facilitate the sustainable development of the project site as well as the host country in the following aspects:

- Providing rural residents with a clean, practical and convenient way to meet the energy demand of their daily cooking;
- Improving the indoor hygiene of rural residents;
- Improving the living condition and quality of rural residents;
- Mitigating GHG emission.

The rural area in Zhangye is an underdeveloped region and in the mean time it is an ideal region for utilizing solar energy. Located at high altitude, this region has many sunny days. It is one of the most suitable regions in China for utilizing solar energy.

The proposed project will significantly contribute to sustainable development of this region. It will serve as a model for future project and stimulate the interests of investors in solar energy projects. It will promote the use of clean energy, educate and train the rural population on solar energy technology, and build awareness in environmental protection among the rural population. Those who will be directly benefited from the proposed project are 49,000 low-income households or about 196,000 villagers (average household has 4-5 people). The rural residents will get clean and reliable energy supply for their daily cooking. The technology and experience gained from this project can be transferred to future projects. The experienced personnel trained by this project can assist other projects in the future.

A.3. Project participants:

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The participants of the proposed project include:

Table 1. Information of 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)**
People's Republic of China (Host)	Beijing Harmonious Energy Development Co., Ltd.	No
Netherlands	Clean Air Capital Ltd	No

Detailed contact information on the Participants and other Parties are provided in Annex 1.

A.4. Technical description of the small-scale project activity:

A.4.1. Location of the small-scale project activity:

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A.4.1.1. Host Party(ies):

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China

A.4.1.2. Region/State/Province etc.:

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Gansu Province

A.4.1.3. City/Town/Community etc:

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Zhangye

A.4.1.4. Details of physical location, including information allowing the unique identification of this small-scale project activity :

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The proposed project will be implemented in the rural areas of Gaotai county and Linze county of Zhangye in Gansu province. The population of Gaotai county is about 160,000 and the population of Linze county is about 150,000. The detailed locations of Gaotai county and Linze county are illustrated in the following maps in Figure 1.

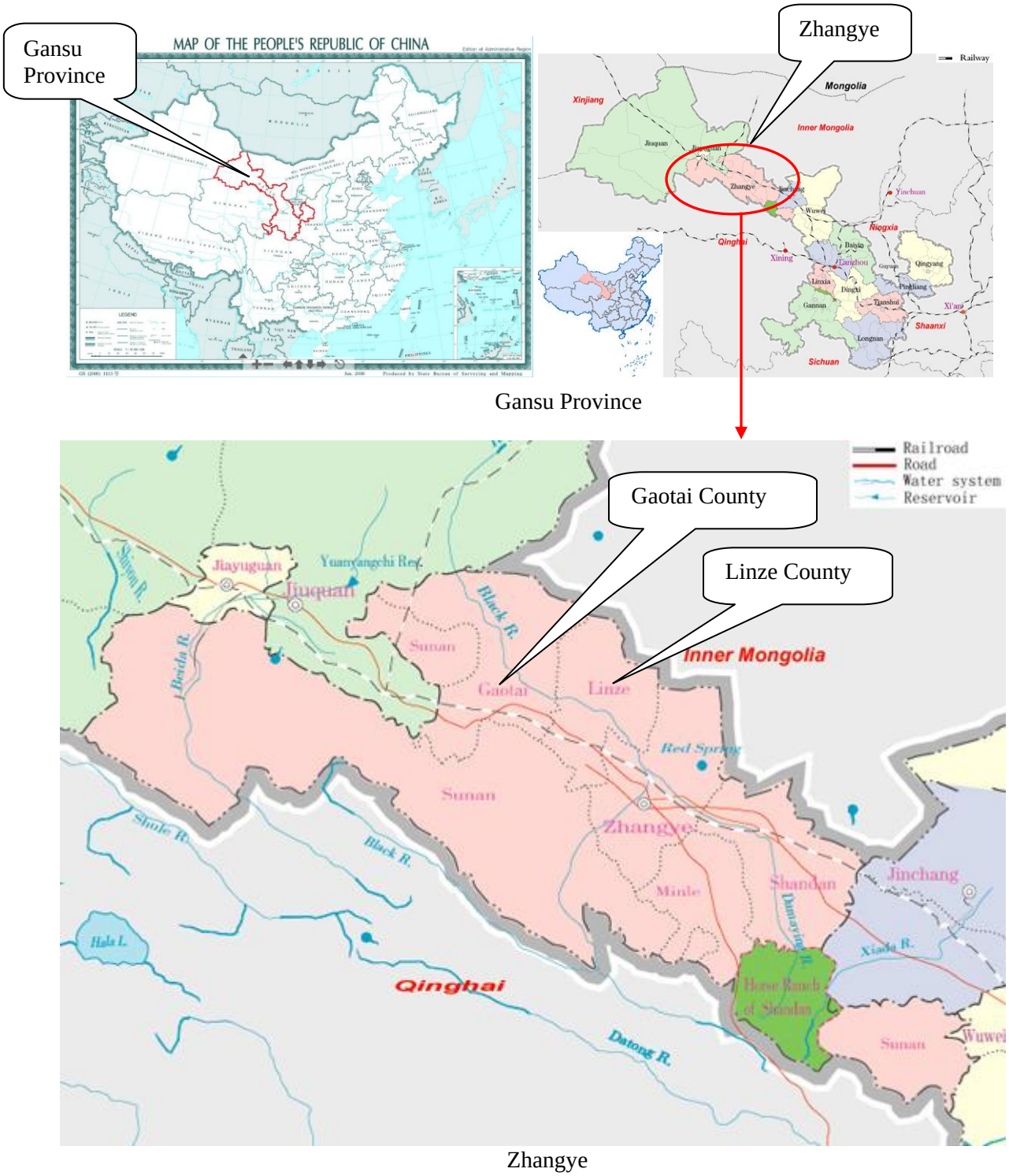

Figure1: Geographic Location of Heqing Solar Cooker Project II

The locations of the center of the townships involved in the project：

Linze County

Township	Longitude	Latitude
Shahe	100 °9'20.91"E	39 °8'52.05"N
Xinhua	100 °1'22.76"E	39 °11'38.83"N
Banqiao	100 °17'5.00"E	39 °16'33.04"N
Pingchuan	100 °5'57.48"E	39 °20'10.51"N
Liaoquan	100 °3'50.44"E	39 °19'8.67"N
Yanuan	100 °14'12.34"E	39 °16'21.08"N
Nijiaying	100 °7'50.99"E	39 °1'49.03"N

Gaotai County

Township	Longitude	Latitude
Xiangdao	99 °49'50.50"E	39 °21'57.07"N
Heli	99 °51'0.41"E	39 °23'30.79"N
Nanhua	99 °48'2.86"E	39 °18'23.85"N
Xinba	99 °52'46.83"E	39 °14'37.51"N
Luotuocheng	99 °37'29.90"E	39 °21'9.83"N
Xuanhua	99 °42'14.01"E	39 °25'50.49"N
Heiquan	99 °37'44.68"E	39 °31'57.18"N
Luocheng	99 °35'20.67"E	39 °41'1.59"N

A.4.2. Type and category(ies) and technology/measure of the small-scale project activity:

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According to the Simplified modalities and procedures for small-scale clean development mechanism project activities (decision 4/CMP.1, Annex II) publicized by UNFCCC, the project type and category are defined as follows:

Type I: Renewable Energy Projects

Category I.C.: Thermal energy production with or without electricity (Version 18, EB 56)

The proposed project is to install 49,000 focusing type solar thermal cookers for rural users in Gansu province in China, replacing coal used previously for cooking and water boiling. This will lead to a reduction of coal consumption and consequently a reduction of CO_2 emission. The rated power of each solar cooker is 910 W[1]. Therefore, the total size of the project is 44.59 MW thermal[2], below the 45 MW thermal limit of small-scale CDM project.

[1] This is the manufacturer's rated power indicated in the manufacturer's technical specification. This rated power is determined based on Chinese National Standard (GB) NY/T219-2003. According to the clause 9(b) of the General Guidelines to SSC CDM methodologies (version 17), to determine equipment performance, the project participants shall use the national standard for the performance of the equipment type if there is no value specified in the methodology that is being applied. For the proposed project, there is no value specified for solar cooker in the methodology. Therefore, values specified by Chinese National Standard shall be used to determine the equipment capacity. For further information of the values specified by Chinese National Standard, please refer to section B6.2.

[2] According to paragraph 4 of methodology AMS.I.C. (version 18), the project capacity shall be determined by installed/rated thermal energy generation capacity of the project equipment, and according to footnote 2 of methodology AMS.I.C. (version 18), thermal energy generation capacity shall be manufacturer's rated thermal energy output. The manufacturer's rated power of each project equipment (solar cooker) is 910W as indicated in footnote 1. Therefore, the project capacity = $910 \times 49{,}000 \times 10^{-6} = 44.59$ MW thermal.

The parameters of the solar cookers engaged in the proposed project are listed below:

Item	Value	Justifications
Focus（mm）	600 ~ 750	National Standard of P.R. China (GB), GB No.: NY/T219-2003
Rated Power（W）	910	Manufacturer's technical specification, and National Standard of P.R. China (GB), GB No.: NY/T219-2003
Thermal Efficiency (%)	At least 65%	National Standard of P.R. China (GB), GB No.: NY/T219-2003
Temperature in the focus area（℃）and the size of focus area (cm^2)	The area with temperature beyond 400 ℃ is between 50cm^2 and 200cm^2	National Standard of P.R. China (GB), GB No.: NY/T219-2003
Maximum operational height (m)	1.25	National Standard of P.R. China (GB), GB No.: NY/T219-2003
Maximum operational distance (m)	0.8	National Standard of P.R. China (GB), GB No.: NY/T219-2003

The solar cookers involved in the project will be manufactured according to the technical specifications listed above. The lifetime of solar cooker is at least 10 years during which the solar cookers can maintain its technical specifications.

All the equipments engaged in the proposed project are domestic, and no technology transfer is involved.

A.4.3 Estimated amount of emission reductions over the chosen crediting period:

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Fixed crediting period is selected for the project activity (1 Sep. 2011 – 31 Aug. 2021)	
Years	**Annual estimation of emission reductions in tonnes of CO_2 e**
1 Sep. 2011 – 31 Aug. 2012	**143,762**
1 Sep. 2012 – 31 Aug. 2013	**143,762**
1 Sep. 2013 – 31 Aug. 2014	**143,762**
1 Sep. 2014 – 31 Aug. 2015	**143,762**
1 Sep. 2015 – 31 Aug. 2016	**143,762**
1 Sep. 2016 – 31 Aug. 2017	**143,762**
1 Sep. 2017 – 31 Aug. 2018	**143,762**

10 Sep. 2018 – 31 Aug. 2019	**143,762**
10 Sep. 2019 – 31 Aug. 2020	**143,762**
10 Sep. 2020 – 31 Aug. 2021	**143,762**
Total estimated reductions (tCO_2e)	**1,437,620**
Number of the crediting years	**10**
Annual average over the crediting period of estimated reductions (tCO_2e)	**143,762**

A.4.4. Public funding of the small-scale project activity:

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There is no official funding involved in the proposed project.

A.4.5. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity:

There is not a registered small-scale CDM project activity or an application to register another small-scale CDM project activity whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point.

Therefore, the proposed project activity is not a debundled component of a large scale project activity.

SECTION B. Application of a baseline and monitoring methodology

B.1. Title and reference of the approved baseline and monitoring methodology applied to the small-scale project activity:

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The methodology applied for this project is the approved small-scale CDM baseline methodology "AMS-I.C (Version 18, EB56), Thermal energy production with or without electricity". For more information regarding the methodology, please refer to the link:
http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html

B.2 Justification of the choice of the project category:

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The methodology AMS-I.C is applicable to this small scale CDM project activity because：

- The proposed project supplies individual households or users with solar cookers that allow the user to use renewable (solar) energy to displace coal used for cooking and water-boiling.
- The installation capacity of the proposed project is 44.59 MW thermal, which is within the limit of 45 MW thermal stipulated for the chosen (small-scale) methodology.
- The proposed project only uses solar energy without any fossil fuels and it does not involve any biomass or co-fired system.

- The heat produced by the project is captured and used by the solar cookers only, and it does not involve in delivery to another facilities within the boundary.
- The proposed project is a new project using new solar cookers and it does not seek to retrofit or modify any existing facility for renewable energy generation.

B.3. Description of the project boundary:

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The physical and geographic boundary of the proposed project includes the rural area of the 8 townships in Gaotai county and the 7 townships in Linze county (as listed in section A.4.1.4) of Zhangye in Gansu, China, particularly the 49,000 solar cookers installed by the project and the relevant households using these solar cookers. (The name of the user will be put on the cooker that the user is going to receive).

Table 2. Description of emission sources and GHG categories of the proposed project

	Source of Emission	Gas	Included/Excluded	Instruction
Baseline	Coal-fired cooking and water-boiling	CO_2	Included	Main emission source
		CH_4	Excluded	Excluded for simplicity; being conservative
		N_2O	Excluded	Excluded for simplicity; being conservative
Project Activities	Project Activity Emission	CH_4	Excluded	There is no CH_4 emission
		CO_2	Excluded	There is no CO_2 emission
		N_2O	Excluded	There is no N_2O emission

B.4. Description of baseline and its development:

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According to small-scale CDM baseline methodology AMS-I.C (Version 18, EB56), Thermal energy production with or without electricity, "For renewable energy technologies that displace technologies using fossil fuels, the simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission coefficient for the fossil fuel displaced."

In the absence of the proposed project, the rural residents involved in the project activity would continue to use the coal-fired stoves for their daily cooking and water-boiling as usual. According to an official document from local government, all the rural residents in the project site use coal for their daily cooking and water-boiling. The document from local government also confirms that in the project site 1) cutting wood and vegetation is illegal so that the rural residents there do not use firewood for cooking and water-boiling, 2) electricity is only used for lighting, not for cooking and water-boiling, 3) the availability of straw is limited and all the straw there are used for feeding animals, and 4) the dominant activity is agriculture and all the animal wastes are used for fertilizers in the fields. Therefore, the baseline scenario of the proposed project is that the 49,000 households continue to cook and boil water with coal-fired stoves. The simplified baseline is the coal consumption of the existing stoves times the emission coefficient of coal.[3]

[3] A very small number of rural residents in Zhangye region have biogas facilities. The proposed project activity will exclude those families who have biogas facilities.

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 small-scale CDM project activity:

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The following table is the project timeline which clearly demonstrated that CDM has been seriously considered in the decision to implement the proposed project since its very early development stage. As a matter of fact, CDM is the only reason for the implementation of the proposed project, i.e., the creation of the project was entirely incentivized by CDM. Therefore, it is obvious that the project owner was well aware of CDM prior to the project start date and continuing and real actions were taken to secure CDM status for the project.

13 August 2010	Signed contract with DOE for CDM project validation.
23~26 August 2010	DOE onsite validation conducted
14 December 2010	Obtained Letter of Approval for CDM project from DNA of the Netherlands
June 2011	Obtained Letter of Approval for CDM project from DNA (i.e. NDRC) of P.R. China

According to Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities (version 06), compared with the baseline scenario, the proposed project faces obvious barrier.

Investment Barrier

If the proposed project were carried out without CDM, the total upfront project investment by the project owner would be about Chinese Yuan (CNY) 21.04 million and after such investment the project would not generate any revenue to the project owner throughout the entire project life. The projected financial statement of the proposed project without CDM is as below (Note: positive and negative monetary values mean cash flowing in and out, respectively):

Parameters (without CDM):

Project Lifetime[4]:	10	Years
Equipment[5]:	-1944	$\times 10^4$ CNY
Project Development Cost[6]	-16	$\times 10^4$ CNY

[4] The confirmation letters from solar cooker vendors confirmed that the cookers can be used for at least 10 years.

[5] According to the confirmation letters from solar cooker vendors, the average price quote from the vender is CNY 396.7 including transportation, installation and maintenance for the first 3 years. Thus, the upfront equipment cost is CNY 19.44 Million. According to the agreement signed between the project owner and the users, the equipment distributed by the project will belong to the users and the project owner will not recover the equipment after the crediting period. Therefore, there is no residual value left for the project owner.

Implementation Cost[7]	-147	$\times 10^4$ CNY
Contribution from user[8]	172	$\times 10^4$ CNY
Subtotal Investment	-1935	$\times 10^4$ CNY
Contingency (8% of investment)	-169	$\times 10^4$ CNY
Total Upfront Investment:	-2104	$\times 10^4$ CNY
Annual maintenance cost [9]:	-101	$\times 10^4$ CNY

(-101×10^4 CNY is the annual maintenance cost for 4th year, and 3.3% increment will be expected in the subsequent 5-10th years)

Annual Inflation Rate[10]:	3.34
Income Tax Rate[11]:	25%
Net Present Value of Project[12]:	-2714 $\times 10^4$ CNY

As shown above, the Net Present Value (NPV) of the proposed project without CDM is -27.14 million CNY. Therefore, the project faces obvious investment barrier. According to Annex 34 of EB 35, investment barrier is one of the valid barriers that can be used to demonstrate the additionality of the project. In fact, because without CDM the project does not generate any revenue after its implementation, no matter how the variables (investment cost, maintenance cost, discount rate, etc.) vary, the NPV will

[6] Includes feasibility study, coordinating with government and equipment vendors, develop project documents, managing cooker manufacturing and distribution, and user training preparation, etc.

[7] The cost of implementing the project, including project and logistic management, local distribution and transportation of the solar cookers, training of users, and other implementation-related works.

[8] The contribution from the solar cooker user (to cover a small portion of the project cost) is 35 CNY for each cooker.

[9] According to the confirmation letters from solar cooker vendors, for the first 3 years the annual maintenance cost is 20 CNY per cooker. Then we assume that starting from the 4th year, the maintenance cost is adjusted by annual inflation rate of 3.3%. Therefore, for the 4th year, the annual maintenance cost = 49000*20*(1+3.3%) = 101.2×10^4 CNY. From the 5th year to the 10th year, each year the maintenance cost is increased by 3.3% based on the maintenance cost of the previous year.

[10] The 3.3% annual inflation rate reflects the inflation rate of China. This is the average monthly inflation in China for the past 3 years. Data source: http://www.tradingeconomics.com/Economics/Inflation-CPI.aspx?Symbol=CNY

Since the maintenance cost of the first 3 years are already included in the upfront equipment cost, the maintenance costs are inflation-adjusted annually during 4th to 10th year of the project;

[11] The standard corporate income tax rate in China is 25%.

[12] The discount rate used to calculate the NPV is 3.60%. This is based on the most recent Chinese Yuan (CNY) deposit rate (December 2008) for 5 year is 3.60%. The source is the website of Bank of China: http://www.boc.cn/finadata/lilv/fd31/200812/t20081222_508225.html. According to Annex 58 of EB 51, required/expected returns on equity can be used as benchmark for equity IRR, To the project owner, the capital cost of the investment on the project is the opportunity cost of depositing the same amount of fund to the bank. Thus, the expected return on investment is the bank deposit rate. This is why the deposit rate was used as the discount rate.

always be negative. Thus, it is unnecessary to conduct sensitivity analysis. It is obvious that without CDM revenue the proposed project is not financially attractive at all. Therefore, the project faces obvious investment barrier.

In contrast, if the project is implemented as a CDM project, the CER revenue will make the project become financially attractive as shown below (Note: the meanings of the terms in this section are the same as those in "without CDM" section unless explained otherwise):

Parameters (with CDM):

Project Lifetime:	10	Years
CDM Crediting period:	10	Years
Equipment:	-1944	$\times 10^4$ CNY
CDM Project Development Cost[13]:	-194	$\times 10^4$ CNY
Implementation Cost	-147	$\times 10^4$ CNY
Contribution from user	172	$\times 10^4$ CNY
Subtotal Investment	-2113	$\times 10^4$ CNY
Contingency (8% of investment)	-169	$\times 10^4$ CNY
Total Upfront Investment:	-2282	$\times 10^4$ CNY
Annual maintenance cost:	-101	$\times 10^4$ CNY

(-101×10^4 CNY is the annual maintenance cost for 4th year, and 3.3% increment will be expected in the subsequent 5-10th years)

Annual Inflation Rate:	3.3%	
Income Tax Rate:	25%	
Expected CER Price:	8.0	EUR
Project NPV at 3.6%	1880	$\times 10^4$ CNY
Project IRR:	18.8%	

As explained in section B.4, the common and dominant practice in the project region is using coal for cooking and water-boiling. Such common practice has been confirmed by the local governmental branch in charge of rural affairs. According to this confirmation, all the rural residents within the project boundary use coal for their daily cooking and water-boiling purpose. Hence, the proposed project is obviously additional compared to such common practice.

If the project can be successfully registered as a CDM project, then the CDM revenue will provide the only financial incentive to the project developers, transforming an otherwise financially unattractive project into an attractive one. Because CDM revenue is the only revenue during the operational period of the project, CDM revenue is absolutely crucial to the successful implementation of this project. The

[13] Includes CDM consulting cost, PDD development, DOE validation, and EB registration fees.

successful registration of the project will serve as a model for future project and stimulate the interests of investors in similar projects.

Moreover, the successful registration of the proposed project will promote the use of clean energy in rural areas, educate and train the rural population on solar energy technology, and build awareness in environmental protection among the rural population.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

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The emission reduction ER_y during a given year *y* is calculated as follow:

$$ER_y = BE_y - PE_y - L_y \quad (1)$$

Where:

ER_y the emission reductions produced by the proposed project.

BE_y the baseline emissions from heat displaced by the project activity during the year y in tCO_2e.

PE_y the emissions produced by the proposed project.

L_y the leakage produced by the proposed project.

Step 1: Estimate the Emission of All Kinds of Greenhouse Gas in the Project activity (PE_y)

The implementation of the proposed project will not produce any GHG emission, i.e. PE_y=0.

Step 2: Estimate the Leakage

The solar cookers to be used in the proposed project will be directly purchased from the manufacturers. The project participants will not transfer the solar cookers out of the proposed project activity during the entire project life. The project implementation and monitoring plan will ensure that 1) only the households that currently do not have solar cooker or biogas will receive the new solar cookers, and 2) if the recipient no longer wants to use the cooker, he/she must immediately return the cooker back to the project owner, and the project owner will immediately give this returned cooker to someone else who does not have a cooker or biogas. Therefore, according to AMS-I.C., the energy generating equipment (solar cookers) is not transferred from another activity. As a result, it is not necessary to consider the leakage in the proposed project, i.e. $L_y = 0$.

Step 3: Estimate the Baseline Emission (BE_y)

The baseline emission (BE_y) of the proposed project activity is the emission from using fossil fuel (coal) to cook and boiling water with traditional stove. According to AMS-I.C., version 18, for steam/heat produced using fossil fuels the baseline emissions are calculated as follows:

$$BE_y = BE_{thermal,CO2,y}$$

$$BE_{thermal,CO2,y} = (EG_{thermal,y}/\eta_{BL,thmeral}) * EF_{FF,CO2} \quad (2)$$

Where:

$BE_{thermal,CO2,y}$ the baseline emissions from heat (generated by burning coal) displaced by the project activity during year y in tCO2e.

$EG_{thermal,y}$ the net quantity of heat supplied by the project activity during the year y in TJ.

$EF_{FF,CO2}$ the CO_2 emission factor of coal (tCO_2e/ TJ).

$\eta_{BL,thermal}$ the efficiency of the coal-fired stove that would have been used in the absence of project activity

The annual net quantity of heat supplied by the project, $EG_{thermal,y}$, is the sum of 12 monthly net heat supplied, and consequently the annual baseline emission of the project, $BE_{thermal,CO2,y}$, is the sum of 12 monthly baseline emission.

$$EG_{thermal,y} = \sum EG_{thermal,i} \quad (i = 1,2, \ldots, 12) \quad (3)$$

$$BE_{thermal,CO2,y} = \sum BE_{thermal,CO2,i} \quad (i = 1,2, \ldots, 12) \quad (4)$$

$$BE_{thermal,CO2,i} = (EG_{thermal,i}/\eta_{BL,thermal}) * EF_{FF,CO2} \quad (i = 1,2, \ldots, 12) \quad (5)$$

where $EG_{thermal,i}$ is the net heat supplied in month *i* in TJ

$BE_{thermal,CO2,i}$ is the baseline emission in month *i* in tCO2e

According to basic physics principle,

*Heat = Power*Time*

The monthly net heat supplied by the cooker is the product of its actual power in that month and its usage time in that month, i.e.:

$$EG_{thermal,i} = n * [P_i * t_i * (3.6 \times 10^{-9})] \quad (6)$$

Where *n* is the total number of solar cookers installed by the proposed project. The value adopted is 49,000;

P_i is the actual average power of the solar cooker in month *i* in W

t_i is the usage time of each solar cooker in month *i* in hours. The value adopted is 129.3 (see section B7.1 parameter #2 for details)

3.6×10^{-9} is the conversion factor between "W*h" and "TJ", i.e., 1 W*h = 3.6×10^{-9} TJ (Note: 1h = 3600s, 1 W*h = 3600 W*s = 3600 J = 3.6×10^{-9} TJ)

Combine (5) and (6), we get

$$BE_{thermal,CO_2,i} = n^* [P_i * t_i * (3.6 \times 10^{-9})]^* EF_{FF,CO_2} / \eta_{BL,thermal} \quad (i = 1,2, \ldots, 12) \quad (7)$$

The actual power of the solar cooker P_i is proportional to the solar irradiance rate under which the cooker is operated. The manufacturer's rated power is 910 W which is determined under the standard solar irradiance rate of 700 W/m^2 according to Chinese national standard (GB) No. NY/T219-2003. Therefore, the actual power of the cooker is its rated power times the ratio of actual solar irradiance rate to standard solar irradiance rate of 700 W/m^2:

$$P_i = 910^* (R_i/700) \quad (8)$$

Where R_i is the actual solar irradiance rate in month *i* in W/ m^2. The values adopted are in section B6.2 parameter #3;

Substitute (8) in (7), then substitute (7) in (4), we have

$$BE_{thermal,CO_2,y} = n^* \sum [910^* (R_i /700)^* t_i * 3.6 \times 10^{-9}] * EF_{FF,CO_2} / \eta_{BL,thmeral} \quad (i = 1, 2. \ldots, 12) \quad (9)$$

Where:

R_i R_i is the actual solar irradiance rate in month *i* in W/ m^2. The values adopted are in section B7.1 parameter #3;

t_i t_i is the usage time of the solar cooker in month *i* in hours. The value adopted is 129.3 (refer to section B7.1 parameter #2 for details)

n The total number of solar cookers installed by the proposed project. The value adopted is 49,000.

EF_{FF,CO_2} the CO_2 emission factor of coal (tCO_2e/ TJ). IPCC default emission factor of 94.6tCO_2e/TJ will be adopted in the proposed project.

$\eta_{BL,thmeral}$ the efficiency of the coal-fired stove that would have been used in the absence of project activity. The value adopted is 14.6% (refer to section B6.2 parameter #3 for details).

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

Data / Parameter:	1.R
Data unit:	W/m^2
Description:	Standard solar irradiance rate used to calculate rated power of solar cooker
Source of data used:	National Standard of the People's Republic of China, GB No.: NY/T219-2003
Value applied:	700
Justification of the choice of data or description of measurement methods and procedures actually applied :	According to National Standard of P.R. China (GB), GB No.: NY/T219-2003, for calculating the rated power of solar cookers, 700 W/m^2 should be used for as the standard value of solar irradiance rate.
Any comment:	

Data / Parameter:	2. η
Data unit:	
Description:	Solar cooker's thermal efficiency
Source of data used:	National Standard of P.R. China (GB), GB No.: NY/T219-2003
Value applied:	65%
Justification of the choice of data or description of measurement methods and procedures actually applied :	This is the requirement of National Standard of P.R. China (GB), GB No.: NY/T219-2003. The project owner will also require in the technical specification that the solar cookers to be manufactured for this project have an efficiency of at least 65%.
Any comment:	

Data / Parameter:	3. $\eta_{BL,thermal}$
Data unit:	
Description:	Thermal efficiency for the traditional coal furnace
Source of data used:	The highest value of measured data.
Value applied:	14.6%
Justification of the choice of data or description of measurement methods and procedures actually applied :	According to paragraph 26 of methodology AMS-I.C.(version 18), for household cooking stoves, the efficiency of the baseline units can be determined by the highest measured operational efficiency over the full range of operating conditions of a representative sample of units with similar specifications. As a prestigious academic institution in Zhangye area, Hexi University (HXU) measured the efficiency of cooking stove in rural Zhangye. The thermal efficiencies of 100 representative cooking stoves at rural households of Zhangye (including Gaotai and Linxe counties where the project is located) were measured, and the measurement meets the requirements of Chinese National Standard "Test method for household coal and stoves" (GB 6412-2009).

	The measurement results are: the highest efficiency is 14.6%, the lowest efficiency is 9.8%, and the average is 12.6%.[14] With the above measurement data, according to paragraph 26 of methodology AMS-I.C.(version 18), 14.6% shall be chosen as the baseline thermal efficiency for the coal stoves.
Any comment:	

B.6.3 Ex-ante calculation of emission reductions:

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According to B.6.1, the emission reduction (ER_y) of the project activity in a given year y is the difference between the baseline emission and the sum of project emission (PE_y) and leakage emission (L_y). The calculation formula is as following:

$$ER_y = BE_y - PE_y - L_y$$

Since both of the project emission and leakage emission within the boundary are zero, the emission reduction of the proposed project is equal to the baseline emission, i.e.:

$$ER_y = BE_y$$

where BE_y is the CO_2 emission from the continued usage of coal-fired stoves in the absence of the proposed activity and its value is equal to the emission reduction.

According to the formulas (3), (5), (6), and (8) in B6.1, the calculation result is tabulated as below:

	Solar irradiance rate	**Actual Power of Solar Cooker**	**Monthly Usage Time**	**Net Heat Supplied Monthly**	**CER Generated Monthly**
	R_i	P_i = 910*(R_i/700) Equation (8)	t_i	$EG_{thermal,i}$ = n*[P_i*t_i* (3.6 ×10^{-9})] Equation (6)	$BE_{thermal,CO2,i}$ = ($EG_{thermal,i}$/$\eta_{BL,thmeral}$) *$EF_{FF,CO2}$ Equation (5)
Month	(W/m2)	(W)	(hour)	(TJ)	(tCO2e)
1	408.5	531.1	129.3	12.11246	7848
2	501.8	652.3	129.3	14.87891	9641
3	635.3	825.9	129.3	18.83733	12206
4	737.0	958.1	129.3	21.85284	14159

[14] The measurement results have been confirmed by the official letter titled "The result and explanation on the thermal efficiency measurement data of domestically-used rural coal-stove in Zhangye area" (28 September 2010) by the Department of Physics Science and Electronic Technologies of Hexi University.

5	795.0	1033.5	129.3	23.57261	15274
6	808.2	1050.7	129.3	23.96400	15527
7	822.2	1068.9	129.3	24.37911	15796
8	764.5	993.9	129.3	22.66825	14688
9	696.5	905.5	129.3	20.65197	13381
10	538.5	700.1	129.3	15.96710	10346
11	411.1	534.4	129.3	12.18956	7898
12	364.2	473.5	129.3	10.79892	6997

Using Equation (4), total annual CER = $BE_y = \sum BE_i$ = **143762**

Therefore, the annual emission reduction (ER_y) of the proposed project is estimated to be 143,762 tCO_2e, i.e., $ER_y = BE_y$ = **143,762** tCO_2e

B.6.4 Summary of the ex-ante estimation of emission reductions:

>>

The net emission reduction induced by the proposed project activity in the 10-year crediting period (1 Sep. 2011 – 31 Aug. 2021) is estimated to be 1,437,620 tCO2e.

Year	Estimation of baseline emissions (tCO_2e)	Estimation of the project activity emissions (tCO_2e)	Estimation of leakage (tCO_2e)	Estimation of emission reductions (tCO_2e)
1 Sep. 2011 – 31 Aug. 2012	143,762	0	0	143,762
1 Sep. 2012 – 31 Aug. 2013	143,762	0	0	143,762
1 Sep. 2013 – 31 Aug. 2014	143,762	0	0	143,762
1 Sep. 2014 – 31 Aug. 2015	143,762	0	0	143,762
1 Sep. 2015 – 31 Aug. 2016	143,762	0	0	143,762
1 Sep. 2016 – 31 Aug. 2017	143,762	0	0	143,762
1 Sep. 2017 – 31 Aug. 2018	143,762	0	0	143,762
1 Sep. 2018 – 31 Aug. 2019	143,762	0	0	143,762
1 Sep. 2019 – 31 Aug. 2020	143,762	0	0	143,762
1 Sep. 2020 – 31 Aug. 2021	143,762	0	0	143,762
Total emission reductions (tCO_2e)	**1,437,620**	0	0	**1,437,620**

B.7 Application of a monitoring methodology and description of the monitoring plan:

B.7.1 Data and parameters monitored:

Data / Parameter:	1. *n*
Data unit:	

Description:	Number of solar cookers in operation in the proposed project
Source of data to be used:	Sales contract and invoice of the solar cookers. Annual monitoring result
Value of data applied for the purpose of calculating expected emission reductions in section B.5	49,000
Description of measurement methods and procedures to be applied:	The initial value of this parameter will be determined by the sales contract of the solar cookers and then this parameter will be monitored, recorded, and archived at each monitoring period. The details of monitoring of this parameter is in section B7.2, "Description of the monitoring plan"
QA/QC procedures to be applied:	Refer to B.7.2
Any comment:	Record will be kept in electronic form and paper form.

Data / Parameter:	2. t_i
Data unit:	Hour
Description:	The monthly operating time of each solar cooker
Source of data to be used:	To be determined by the result of the sampling survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	129.3[15]
Description of measurement methods and procedures to be applied:	The monitoring will be conducted daily on the selected sample users determined at the beginning of each monitoring period. The data will be summarized, analyzed, and archived.
QA/QC procedures to be applied:	Refer to B.7.2
Any comment:	Record will be kept in electronic form and paper form.

Data / Parameter:	3.R_i
Data unit:	W/m^2
Description:	Monthly solar irradiance rate in project region
Source of data to be used:	Gansu Meteorological Information and Technical Equipment Security Centre or other relevant authoritative recourses.
Value of data applied for the purpose of	Month Value[16] 1 408.5

[15] According to the explanation on solar cooker usage time and cooking habits by the local government, to meet the daily cooking and water-boiling need of a rural family using solar cooker, the daily usage time of the solar cooker is at least 4 hour and 15 minutes (4.25 hours). Therefore the average monthly usage is: 4.25*(365/12) = 129.3 hours.

[16] Please refer to Annex 3 for details

calculating expected emission reductions in section B.5	2 501.8 3 635.3 4 737.0 5 795.0 6 808.2 7 822.2 8 764.5 9 696.5 10 538.5 11 411.1 12 364.2
Description of measurement methods and procedures to be applied:	The solar irradiance rate data will be updated at least once a year with the latest available complete set of data obtained from relevant authoritative resources.
QA/QC procedures to be applied:	The data is from an official source. No additional QA/QC procedure is necessary.
Any comment:	

Data / Parameter:	4. $EF_{FF,CO2}$
Data unit:	tCO_2/TJ
Description:	Baseline emission factor of Coal
Source of data to be used:	IPCC2006, page 2.22, Table2.5
Value of data applied for the purpose of calculating expected emission reductions in section B.5	94.6
Description of measurement methods and procedures to be applied:	The testing data for local coal is not available and the IPCC default value is deemed to reasonably represent local circumstances. In this case, according to paragraph 13 of AMS-I.C. (version 18), IPCC default emission factor can be used.
QA/QC procedures to be applied:	The data is from an official source. No additional QA/QC procedure is necessary.
Any comment:	Future revision of the IPCC Guidelines should be taken into account

B.7.2 Description of the monitoring plan:

>>

The objective of the monitoring plan is to ensure the successful monitoring of the emission reduction of the proposed project during the crediting period.

The project implementation is scheduled to take place in mid 2011. The implementation will start with the tender bidding process of the solar cookers. Several solar cooker manufacturers will be selected for the project. The project implementation and monitoring plan will ensure that 1) only the households that currently do not have solar cooker will receive the new solar cookers, and 2) if the recipient no longer

wants to use the cooker, he/she must immediately return the cooker back to the project owner, and the project owner will immediately give this returned cooker to someone else who does not have a cooker.

1. Monitoring Organization

The overall monitoring of the project will be managed and implemented by the project owner, Beijing Harmonious Energy Development Co., Ltd., with the cooperation of local government such as rural energy station. The monitoring teams will be recruited and managed by the project owner. The candidates will be carefully screened to ensure that each member of the monitoring teams has the proper ability to perform the monitoring task. The monitoring teams will be trained and supported by the project owner and experienced CDM consultants. The project owner will work closely with local government to ensure proper equipment installation, training of the users, monitoring, document preservation, and maintenance.

2. Data Monitored

According to methodology AMS-I.C.(version 18), if the emissions reduction per system is less than 5 tonnes of CO_2 a year, the parameters that need to be monitored are:

(a) Recording annually the number of systems operating (evidence of continuing operation, such as on-going rental/lease payments could be a substitute), if necessary using survey methods; and

(b) Estimating the annual hours of operation of an average system, if necessary using survey methods. Annual hours of operation can be estimated from total output and output per hour if an accurate value of output per hour is available.

In the proposed activity, the emission reduction from each solar cooker is 143762/49000 = 2.9 < 5 tCO2e. Therefore, the two parameters that need to be monitored are the number of solar cookers in operation (parameter A) and the average operating time of each solar cooker (parameter B).

3. Monitoring Method

According to the methodology, sampling survey method will be used for the two required monitoring parameters: number of systems operating (parameter A) and the average hours of operation (parameter B).

According to General Guidelines For Sampling And Surveys For Small-Scale CDM Project Activities (Version 01), care will be taken to ensure that the samples are drawn in a manner that avoids any bias and that the data collection minimizes non-sampling (non-random, systematic) errors.

The sampling plan is the following:

	Parameter A	Parameter B
Sampling objective	Determining the total number of solar cookers operating during the crediting period with a 90/10 confidence/precision	Determining the average monthly hours of operation of the solar cookers during the crediting period with a 90/10 confidence/precision
Field measurement objective and data to	Field measurement objective: Total number of solar cookers	Field measurement objective: Usage time of the cookers for each of the

be collected	operating out of the sample size Method of measurement: visual inspections[17] Frequency of measurement: Once during each monitoring period, but at least once per year, i.e., the interval of the measurements is no more than one year. How the data will be used: The percentage of total number of operating cookers out of the sample size will be calculated, then the total number of operating cookers in the proposed project will be calculated by using the abovementioned percentage multiplying 49000, the total number of cookers.	sample users. Method of measurement: respondent self-reports, and operational logs[18]. Frequency of measurement: Daily How the data will be used: The daily usage time of the cookers of all the sample users will be summed up for each month in the monitoring period ("the total monthly usage time"), then the average monthly usage time of one cooker will be calculated by dividing the total monthly usage time by the sample size.
Sampling method	Simple random sampling[19] regardless of which township the solar cookers are located in. The sampling tool is Microsoft Excel, a reliable and widely accepted tool for random sampling.	
The target population and sampling frame	The 49,000 solar cookers to be installed by the proposed project	
Desired precision and sample size:	The desired confidence level is 90% and the desired precision is 10%. According to statistical principles, 79 samples[20] should be sufficient to satisfy the desired confidence and precision.	

[17] According to paragraph 32 of General Guidelines For Sampling And Surveys For Small-Scale CDM Project Activities (Version 1), the practitioners of the sampling are expected to select the most effective information gathering method. The implementer should decide on what would be the most reliable and cost effective method for collecting the data, depending on the variables of interest. Alternative methods include visual inspections, physical measurements, respondent self-reports, and operational logs.

This project will be implemented in remote rural areas. For this project, the most reliable and cost effective method to collect the data will be visual inspections, respondent self-reports, and operational logs.

[18] Same as footnote 15. .

[19] The project will be implemented in the rural areas of Gaotai and Linze counties of Zhangye. The situations of these rural areas are very similar to each other. Therefore, simple random sampling method will be used for the sampling for the monitoring of both parameter A and B.

[20] The required sampling quantity is calculated by the following steps: $n_1= z^2P(1-P)/e^2$, $n_2= n_1N/(N+n_1)$, $n_3=Bn_2$, $n_4= n_3/r$, $n= n_4\ (110\%)$, where z corresponds to 90% confidence level, e is the allowed error margin ("precision")

	Note: two different sets of 79 samples will be drawn. One set for the monitoring of parameter A and the other set is for the monitoring of parameter B	
Procedures for Administering Data Collection and Minimizing Non-sampling Errors (Part 1)	A monitoring team (Team A) will be set up to conduct the monitoring of the number of operating cookers of the sample users. The monitoring will be conducted during the last 3 months of each monitoring period. Team A will be visiting each of the sample users and check the status of their cooker to see whether these cookers are operating. The monitoring data will be collected and archived after the site visit. Before implementing the project, the personnel of monitoring teams will be trained on how to properly conduct the monitoring process	A monitoring team (Team B) will be set up to conduct the daily monitoring of the operating hours of the sample users. The monitoring forms will be filled out daily by Team B members to record the daily usage data of these sample users. At least once a month Team B leader will collect monitoring forms from Team B members and the quality of data will be checked. Then average usage time per user will be calculated based on these data. Before implementing the project, the personnel of monitoring teams will be trained on how to properly conduct the monitoring process
Procedures for Administering Data Collection and Minimizing Non-sampling Errors (Part 2)	If the data record is missing or damaged, the following makeup process will be conducted: 1. The general principle is that zero value will be used for the missing or damaged data. This is most conservative approach. The monitoring personnel will be trained before the starting of the project operation to ensure that each team member is fully aware of and able to strictly follow this conservative principle. During the monitoring process, the monitoring personnel will be required to strictly abide by the above conservative principle in data recording, i.e., use zero values for all the missing or damaged data. 2. If this is due to the working error of the monitoring personnel, further train the person until he or she can perform the job properly. And in the mean time, use zero value for the missing or damaged data;	

and the *e* value taken is 10% (According to "General Guidelines for Sampling and Surveys for Small-Scale CDM Project Activities" in Annex 30 of EB50, 90% confidence level and 10% precision shall be used if there is no specific guidance in the applied methodology). *P(1-P)* represents the square of standard deviation (S^2) and the *P* value taken is 0.5 to produce the largest square of standard deviation; *N* is the total number of solar cookers 49,000; *B* is the survey design effect and in this case random sampling will be used so that the *B* value taken is 1; *r* is the survey reply rate and its value taken is 95%; and n_1, n_2, n_3, n_4, and *n* are the adjusted values after each step with *n* being the final number of samples to be taken. n_4 is actually the required number of samples based on calculation, 10% contingency was added to n_4 to produce *n*. The calculation result for *n* is 79.

	3. If this is due to the inability or attitude of a particular worker in monitoring team, dismiss such worker and re-hire those with proper ability and attitude. And in the mean time, use zero value for the missing or damaged data; 4. If the monitoring team as a whole does not meet the job requirement of monitoring process, a new monitoring team that meets the requirement will be created.. 5. If the data reported by the user significantly higher than the normal range by common sense, the monitoring personnel should ask for the reason If the reason belongs to one of the following: 1) holidays celebration, 2) wedding or funeral, or 3) family/friends party, the reason is considered to be valid. Then the reason is recorded along with the data. Otherwise, zero value will be used for that day's data. If the monitoring results are satisfactory in terms of correct reporting, data completeness and correct analysis, the data will be accepted for the monitoring report
Implementation	The sampling process will start as soon as the target population is determined. Before the beginning of each monitoring period, two sets of 79 samples will be drawn, one set for the monitoring of parameter A and the other set is for the monitoring of parameter B. Before the beginning of the next monitoring period, a new round of random sampling will be conducted among the 49,000 users to generate two new sets of 79 samples which will be monitored during the forthcoming monitoring period. The monitoring data will be collected throughout the entire crediting period of the proposed project. As to who will conduct the data collection and analyses, please refer to Section 1 (Monitoring Organization) and Section 4 (Data Collection) of B7.2.

For the number of cooker operating (Parameter A), a table which is substantially in the form of the following will be used for monitoring and recording this parameter:

Total number of solar cookers operating

Sample User Name	If this solar cooker exists and is operational, check "√"	Date of Checking	Checked by	Note

Number of operational solar cookers		Summarized by:		
Number of non-operational solar cookers				

For the average usage time of the cooker (Parameter B), a table which is substantially in the form of the following will be used for monitoring and recording this parameter:

The Operating Time of Solar Cookers

Year and Month

Sample User Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total

According to small scale methodology AMS.I.C. (version 18) and the SSC WG's clarification (SSC_536) on this methodology, the use of literature value (e.g. value from a national standard) is in principle acceptable to determine the efficiency of project equipment. Thus, the 65% efficiency listed in Chinese national standard will be used for the solar cookers involved in this project.

The solar irradiance rate data will be updated at least once a year with the latest available complete set of data obtained from relevant authoritative resources.

To track the solar cookers, the logo of the project will be put on each of the solar cookers involved in the project. Moreover, the name of the user will be put on the cooker that the user is going to receive. A list of all the users to whom the solar cookers were distributed will be kept.

For the transfer of solar cookers, the monitoring team will ensure that the transferee is also located within the project boundary of the proposed project, and will record the transferor, transferee, and the time of transfer

4. Data collection

Beijing Harmonious Energy Development Co., Ltd., the project owner, will summarize the data on monitoring forms collected from the monitoring teams. The records of the sampling process of the target population will be maintained. For the monitoring of total number of systems operating, the data collection and summarization will be done after this monitoring task is finished, and for the monitoring of average usage time, the data collection and summarization will be done at the end of every month in the monitoring period. The project owner will check the data to make sure that the data are legible, uniform in format, complete, and effective. Then calculate the total numbers of solar cookers in operation and the average operating time of the sample users.

All the monitoring data will be converted to electric form. All the original records will be kept. Electronic document should be backed up on CD and hard copies should be printed out for further backup. In addition, sales invoices or receipts of the solar cookers should be saved for the verification of DOE.

5. Maintenance

The project owner will be responsible for the repair of the solar cookers distributed. If the user's solar cooker has a problem, the user can either notify the rural energy station or the project owner, then the solar cooker will be repaired for free. For the events such as the maintenance, transfer, and replacement of the cooker, there will be records which include the date of the event, the names of the users involved in the event.

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

>>

The study of the baseline and the monitoring methodology was completed in June 2010.

The key individuals involved in the baseline study are:

1. Ju Ning

   Clean Air Capital Ltd
   Email: ju.ning@cleanaircap.com

   The above organization is a project participant.

2. Wei Jiang

   Beijing Harmonious Energy Development Co., Ltd.

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The above organization is a project participant.

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:

>>

15 August 2011 (Planned tender bidding process start date)

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:

>>

Not applicable

C.2.1.2. Length of the first crediting period:

>>

Not applicable

C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

>>

1 September 2011 or immediately from the date of project registration, whichever is later

C.2.2.2. Length:

>>

10 years

SECTION D. Environmental impacts

>>

D.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:

>>

It is a characteristic of such projects that there are no emissions or wastes. Solar cooking has a high potential for reducing GHG emission and smoke by using clean energy and avoiding burning coal. CDM makes solar cooking accessible to poor people who particularly suffer from the environmental deterioration caused by GHG emission. The project does not cause any pollution to air, water, or the ecological environment. Therefore, the analysis of environmental impact is not required.

The environmental impacts of the project may be summarized as follow:

- Prevention of resource depletion caused by consumption of coal;
- Avoidance of indoor air pollution from smoke of traditional stove;
- Diminishing GHG emission;
- Diminishing risks of fires caused by coal-fired stoves.

One of the main positive environmental impacts of the project will be the rising awareness among rural populations about environmental challenges, enabled by the sustainable technology and by the accompanying educational program.

D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party:

>>

According to the official opinion of the local environmental authority, this project does not generate waste water, waste gas, noise, or solid waste and its implementation was approved by the local environmental authority. Therefore, the project has no negative environmental impact.

SECTION E. Stakeholders' comments

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

>>

The project owner discussed the project with local government of Zhangye and the feedback was very positive.

In April 2010, the stakeholder survey was conducted on the rural residents in places where the project was planned to carry out. The surveys were done by randomly visiting the villagers as well as assembling the villagers and interviewing them. Totally 100 survey forms (corresponding to more than 80% confidence level according to the statistical method used in B7.2) were distributed and collected. The backgrounds of the local villagers surveyed are: Gender: 83% male and 17% female; Age: 7% less than 30, 48% between 30 and 40, 31% between 40 and 50, 14% more than 50; Education: 20% elementary school, 56% junior high school, 19% senior high school, 5% two-year college or higher. The comments of local stakeholders in the form of the result of questionnaires are summarized in the following paragraphs and will be available to DOE.

The questionnaire included the following questions:

1) Do you know about the Project?

   (Know a lot; Know some; Never heard of it)

2) Do you know about solar cooker?

   (Don't know; heard of it; have seen it; have used it)

3) Which positive effect will be brought on your life by the proposed project (multiple choices allowed):

   (Save energy; Reduce pollution; Save expenses; Enhance the living condition; Other; None)

4) Which negative effect will be brought by the proposed project?

   (Inconvenient to use, Inconvenient to repair, Occupy space, None)

5) The significance of negative effect brought by this project

   (Considerable effect, some partial effect which can be resolved, basically no effect)

6) The overall impacts of the proposed project?

   (Positives far outweigh negatives, Basically no impact, Negatives far outweigh positives)

7) Do you support the proposed project?

   (Support, Oppose, Doesn't matter to me)

5. Signature and date

E.2. Summary of the comments received:

>>

The survey results are:

1) Do you know about the Project?

   (Know a lot: 2%; Know some: 26%; Never heard of it: 72%)

2) Do you know about solar cooker?

   (Don't know: 0%; heard of it: 63%; have seen it: 31%; have used it: 6%)

3) Which effect will be brought on your life by the proposed project (multiple choices allowed)?

   (Save energy: 53; Reduce pollution: 23; Reduce expenses: 89; Enhance the living condition: 17; Other: 0; None: 0. Note: the value reported here are the numbers of selections on each choice)

4) Which negative effect will be brought by the proposed project?

(Inconvenient to use: 0%, Inconvenient to repair: 5%, Occupy space: 3%, None: 92%)

5) The significance of negative effect brought by this project

(Considerable effect: 0%, some partial effect which can be resolved: 0%, basically no effect: 100%)

6) The overall impacts of the proposed project?

(Positives far outweigh negatives: 100%, Basically no impact: 0%, Negatives far outweigh positives: 0%)

7) Do you support the proposed project?

(Support: 100%, Oppose: 0%, Doesn't matter to me: 0%)

In summary of the key result, 100% of those surveyed supported the project and thought that its positive impacts far outweighed the negative impacts.

E.3. Report on how due account was taken of any comments received:

>>

The stakeholders (including local government and local residents) strongly supported the proposed project. Therefore, it is not necessary to make any adjustment on the current implementation plan.

Annex 1

CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY

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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

No official funds are involved in the proposed project.

Annex 3

BASELINE INFORMATION

Solar Irradiance Data[21]

Month	Monthly solar insolation (MJ/m^2)	Sunlight time (hour)	Solar irradiance rate (W/m^2)
1	285.86	194.4	408.5
2	352.23	195.0	501.8
3	498.85	218.1	635.3
4	611.03	230.3	737.0
5	744.95	260.3	795.0
6	729.67	250.8	808.2
7	705.62	238.4	822.2
8	656.98	238.7	764.5
9	538.59	214.8	696.5
10	442.19	228.1	538.5
11	309.34	209.0	411.1
12	254.49	194.1	364.2
Annual Total	**6129.80**	**2672.0**	**637.2**

[21] 1993-2008 Data, from Gansu Meteorological Information and Technical Equipment Security Centre

Annex 4

MONITORING INFORMATION

The monitoring plan is in B.7.2. There is no additional information in this section.