

HEQING SOLAR COOKER PROJECT I



Document Prepared By Clean Air Trade, Inc.

Project Title	Heqing Solar Cooker Project II
Project ID	1859
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1 SUMMARY OF SUSTAINABLE DEVELOPMENT CONTRIBUTIONS

The project installed 49,000 solar cookers in northwestern China for low-income rural households to substitute solar energy for coal used in their cooking and water heating.

The project provided rural residents with a clean, practical, and convenient way to meet their energy demand in a sustainable manner. It reduced the expenditure on coal and hence increased the disposable income of low-income rural families. It reduced coal smoke, improved indoor hygiene, and consequently decreased the rural farmers' exposure to household air pollution (HAP) and benefited their health.

The solar cookers made the frequent heating of water and food much easier, and thus improved the access to safe, nutritious, and sufficient food and avoided illness or malnutrition for rural households, especially for people in vulnerable conditions (infants, young children, adolescent girls, pregnant and lactating women, and old persons) who need hot water and meal frequently.

The project provided training on the basic knowledge of clean energy, the working principles of solar cookers, and how to use solar cookers properly, to both men and women in the rural households. Therefore, it ensures equal access for women and men to affordable and quality technical education.

The convenience of using solar cooker saved time spent on domestic work involving using coal stove, and it also enhanced the rural households' access to safe and affordable drinking water by conveniently providing hot water when needed.

The project created employment opportunities for the local communities, including women and men, through project implementation, monitoring, and maintenance.

2 PROJECT CONTRIBUTIONS

For details, please refer to the Sustainable Development Contributions table in the next page. The first 5 items (No. 1 – 5, in black text) were already approved by Monitoring Report v2.3 dated 06-October-2022 (File name: *H2 (VCS1859)-MR-9th MP-v2.3b.pdf*) and they are listed here just to make the table complete. Items No. 6 – 10 (in blue text) are the new ones added by this report.

Table 1 : Sustainable Development Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
<i>Sequential row number</i>	<i>SDG Target number</i>	<i>Number and text of SDG indicator or, if no official SDG indicator is applicable, user-defined indicator</i>	<i>Indicate the project's contribution to the SDG Indicator (implemented activities to increase or decrease)</i>	<i>Brief description of the quantifiable impact of the project's activities related to the SDG indicator, during the project SDG contributions reporting period.</i>	<i>Brief description of the cumulative quantifiable impact of the project's activities related to the SDG indicator, over the project lifetime.</i>
1)	1.2	Number of households with increased income, and the increased amount of income.	Implemented activities to increase	For the rural households using inefficient cookstoves, because cooking is a necessity of life, purchasing coal for cooking is also a necessity of life. In other words, for these households, the expenditure on coal can't be avoided. Using solar cooker reduces such unavoidable expenditure, and consequently these household will have extra money to spend on other things, which is equivalent to income increase. This project enables the reduction of coal expenditure for the 49000 rural households involved in the project. Therefore, this project enables these 49000 households to have increased income. No further changes in the number of households with increased income in this monitoring period. The increased amount of income in this monitoring period is CNY 319.0 million (CNY 6,510 per household).	The usage of solar cooker reduced the expenditure on purchasing coal, which is equivalent to the increase of income for the 49000 rural households involved in the project. The increased amount of income over project lifetime is CNY 942.1 million (CNY 19,227 per household).

The following 5 items (No. 1 – 5, in black text) were already approved by Monitoring Report v2.3 dated 06-October-2022 (File name: H2 (VCS1859)-MR-9th MP-v2.3b.pdf) and they are listed here just to make the table complete. Items No. 6 – 10 (in blue text) are the new ones added by this report.

2)	3.9	Number of households and number of years exposed to household air pollution (HAP) caused by burning coal using inefficient cookstoves	Implemented activities to decrease	The project reduced HAP for 49,000 low-income rural households. No further changes in the number of households exposed to HAP in this monitoring period. The 49000 households' exposure to HAP has been reduced by 3.14 years (01/08/2018 –21/09/2021) in this monitoring period, which consequently reduced their likelihood of illness and death from HAP.	According to World Health Organization (WHO), each year close to 4 million people die prematurely from illness attributable to household air pollution (HAP) from inefficient cooking practices. HAP causes noncommunicable diseases including stroke, ischaemic heart disease, chronic obstructive pulmonary disease (COPD) and lung cancer. Close to half of deaths due to pneumonia among children under 5 years of age are caused by particulate matter (soot) inhaled from HAP. The project reduced HAP for 49,000 low-income rural households for 10 years, which consequently reduced their likelihood of illness and death from HAP.
3)	7.1	Number of households that get access to affordable and reliable clean energy	Implemented activities to increase	No further changes this monitoring period	The project enabled 49,000 low-income rural households to get access to affordable and reliable clean energy.
4)	10.1	Number of households with increased income, and the increased amount of income.	Implemented activities to increase	The usage of solar cooker reduced the expenditure on purchasing coal, which is equivalent to the increase of income for the 49000 rural households involved in the project No further changes in the number of households with increased income in this monitoring period. The increased amount of income in this monitoring period is CNY 319.0 million (CNY 6,510 per household).	The usage of solar cooker reduced the expenditure on purchasing coal, which is equivalent to the increase of income for the 49000 rural households involved in the project. The increased amount of income over project lifetime is CNY 942.1 million (CNY 19,227 per household). The project is in Gansu province where the average income is in the bottom 1.8% of the entire host country. Therefore, it is reasonable to conclude that the income of the households involved in the project are in the bottom 40% of the host country.

5)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	By installing solar cookers to 49000 rural households, the project has prevented the release of 498,454 tonnes of CO ₂ into the atmosphere during this monitoring period.	By installing solar cookers to the rural households, the project prevented the release of 1,472,102 tonnes of CO ₂ into the atmosphere over project lifetime.
The following items (No. 6-10, in blue text) are the new ones added by this report. The previous 5 items (No. 1-5) were already approved by Monitoring Report v2.3 dated 06-October-2022 (File name: H2 (VCS1859)-MR-9th MP-v2.3b.pdf) and they are listed here just to make the table complete.					
6)	2.1 & 2.2	Number of households whose access to safe, nutritious and sufficient food has been improved	Implemented activities to increase	First, hot water and fully cooked food are crucial to ensure the sanitation of water and food, especially in poor regions like the project region where sanitary conditions are not good. Second, in order to get safe water and food in a timely manner to avoid illness or malnutrition, people in vulnerable conditions¹ need to have hot water and hot meal frequently. However, it is impractical to frequently ignite and reignite the coal stove to meet such frequent heating need, which consequently compromise their access to safe and nutrient water and food. Third, it is the habit of Chinese to drink hot water and eat hot food, which give them much better appetite than cold water and cold food. Therefore, from both hygiene and custom points of view, being able to frequently providing hot food and water is crucial to local people, especially those in vulnerable conditions. With solar cookers, the project enabled 49,000 rural households to frequently heat up water and food in a convenient way at no cost, which improved the access of local people, especially those in vulnerable conditions, to safe and nutrient water and food, and consequently helped end their malnutrition.	The project enabled 49,000 rural households to frequently heat up water and food in a convenient way at no cost, which improved the access of local people, especially those in vulnerable conditions, to safe and nutrient water and food, and consequently helped end their malnutrition.

¹ “people in vulnerable conditions” refers to infants, young children, adolescent girls, pregnant and lactating women, and old persons.

7)	4.3	Number of households trained on solar energy and working principles of solar cooker	Implemented activities to increase	The project provided training on the basic knowledge of clean energy, the working principles of solar cookers, and how to use solar cookers properly, to both men and women of the 49,000 households using solar cooker. Therefore, it ensures equal access for women and men to affordable and quality technical education.	The project provided training on the basic knowledge of clean energy, the working principles of solar cookers, and how to use solar cookers properly, to both men and women of the 49,000 households using solar cooker. Therefore, it ensures equal access for women and men to affordable and quality technical education.
8)	5.4	Number of households that saved time spent on domestic work involving coal stove due to the usage of solar cooker	Implemented activities to increase	Using coal stove involves a lot of work on handling the coal, such as purchasing coal, getting coal to home, storing coal, breaking the coal, igniting the coal, and cleaning the coal ashes and dust, etc. The use of solar cooker saved households considerable time that would have been used for handling the coal. This project saved domestic work time for 49,000 rural households.	Using coal stove involves a lot of work on handling the coal, such as purchasing coal, getting coal to home, storing coal, breaking the coal, igniting the coal, and cleaning the coal ashes and dust, etc. The use of solar cooker saved households considerable time that would have been used for handling the coal. This project saved domestic work time for 49,000 rural households.
9)	6.1	Number of households whose access to safe and affordable drinking water have been enhanced	Implemented activities to increase	Boiling water is crucial to ensure the sanitation of water, especially in underdeveloped regions like the project region where sanitary conditions are not good. In order to get constant access to boiled (safe) water, the drinking water needs to be heated frequently. However, it is impractical to frequently ignite/reignite the coal stove to meet such frequent heating need, which consequently compromise the households' access to safe drinking water. With solar cookers, this project enabled 49,000 rural households to frequently heat water in a convenient way at no cost. This improves their access to safe and affordable drinking water.	This project enabled 49,000 rural households to frequently heat water in a convenient way at no cost. This improves their access to safe and affordable drinking water.

10)	8.5	Number of employment opportunities created by the project	Implemented activities to increase	In this monitoring period, the project created 11 employment opportunities for local people, including women and men, through project monitoring and maintenance.	The project created 53 employment opportunities during solar cooker distribution and project implementation stage (July 2011 to August 2012) and 11 after that through project monitoring and maintenance.
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APPENDIX 1: SUPPORTING EVIDENCE

Ref 1, for Row Number 6 and 9:

Document from the official website of U.S. Centers for Disease Control and Prevention (CDC) confirming boiling makes water safe to drink. On page 2 of the enclosed file “SDG Ref1. CDC-Making Water Safe.pdf”, text marked yellow: “Boiling is the surest method to kill disease-causing germs, including viruses, bacteria, and parasites”.

Document Source:

<https://www.cdc.gov/healthywater/emergency/making-water-safe.html>

Ref 2.1 and 2.2, for Row Number 7:

Governmental documents confirming the training of users. The total number of solar cookers distributed by this project is 49,000 which covered two counties – 28,000 in Linze county and 21,000 in Gaotai county. Therefore, each county issued a confirmation document. Please refer to SDG Ref 2.1 (Linze county) and SDG Ref 2.2 (Gaotai county). In each of the two documents, the first page is English translation and pages 2 and 3 are original document in Chinese.

Ref 3.1 and 3.2, for Row Number 10

Employment opportunities were created by implementing and servicing the two solar projects “Heqing Solar Cooker Project II (VCS 1859, the project described by this document) and Heqing Solar Cooker Project I (VCS 1860).

Enclosed are the employment records of Beijing Harmonious Energy Development Co Ltd (BHED), the operator of the project, which show that 106 people employed for during solar cooker distribution and project implementation stage (July 2011 to August 2012, file SDG Ref 3.1) and 22 people employed after that (file SDG Ref 3.2) through project monitoring and maintenance. Because these two projects (VCS 1860 and 1859) have the same size, it is reasonable to claim that the employment opportunities created by each of the two projects is half of the total numbers listed above.

Therefore, the numbers of the employment opportunities created by this project (VCS 1859) are:

- During this monitoring period: 11 (half of the 22)
- During entire project lifetime:
 - 53 (half of 106) during solar cooker distribution and project implementation stage (July 2011 to August 2012) and
 - 11 after that (half of 22).