

Clean Development Mechanism South Africa
Designated National Authority



energy

Department:
Energy
REPUBLIC OF SOUTH AFRICA

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Project Design Document (PDD)

Project reference number (office)	
Date received (office use only)	

NOTES ON COMPLETING THIS PROJECT DESIGN DOCUMENT

1. Please provide this PDD in both hard-copy

Part A: Project Proponent Details

Project Name	Energy Efficient Cook stoves in South Africa
Date of Submission of PDD	27/07/12

Project Developer	
Name	Clean Air Renewable Energy (Pty) Ltd
Organizational Category	Private Organization
Legal Status	Private Limited company
Street Address	9 Brands Hatch Close, Kyalami Business Park Telco House Johannesburg Gauteng - 1684 South Africa
Postal Address (if different from above)	The same as above
Website Address	http://www.cdmcare.co.za/services.php

Main Activities	Clean Air Renewable Energy (Pty) Limited is a consulting company involved in Carbon Advisory Services & Strategy Consulting and Carbon Finance & Asset Management. It is involved in the field of climate change mitigation and recommends strategies on energy efficiency, renewable energy, sustainable land-use and forestry, environmental sciences & technologies, finance and policy analysis.
Summary of Financial Performance in last fiscal year	<i>Clean Air Renewable Energy PTY Ltd. Has not made a profit over the last year due to the high costs involved in registering the cook stove project.</i>
Contact Person(s)	Mr. Allen Ricki
Telephone	+27 82 442 4812
Fax	+27 86 683 0830
Email Address	ricki@cdmcare.co.za
Project Partners Provide the following Information for all project partners (copy and paste relevant sections of the table if information is to be provided on more than one partner organisation)	
Name	Core CarbonX Solutions Private Limited
Nature of partner	Core CarbonX Solutions Private Limited is the Consultant helping the CME in developing the PoA DD, CPA and assisting the CME in preparation of the monitoring plan.
Organizational Category	Private Company
Legal Status (if private company)	Private Limited Company
Street Address	Core CarbonX Solutions Pvt Ltd 6-3-903/A/4/1, Vani Nilayam, Suryanagar Colony, Somajiguda, Hyderabad 500082, A.P., India Landline: +91-40-23410367
Postal Address (if different to Street Address)	Same as above
Website Address	www.corecarbonx.com
Main Activities	Core CarbonX Solutions Pvt Ltd is a Carbon Advisory Service Company created to serve as the pre-eminent business-to-business resourced for companies to understand, mitigate and manage the transition to a greenhouse gas constrained future. Our team has executed more than 100 projects, which are aimed at combating climate change. The sectors we have worked for are distilleries, sugar, cement, textiles, power, chemicals, steel, engineering, power and others. And the areas include wind power, co-generation, waste heat recovery, energy efficiency, methane avoidance, MSW management, hydro power, natural gas based power plant, fuel switch projects, solar project and more.
Contact Person(s)	Niroj Kumar Mohanty

Telephone	Work: +91-40-23410367 Cell: +91-9908387772
Fax	+91-40-23410367
Email Address	nmohanty@corecarbonx.com
Contractual Arrangements	
Contractual arrangements between various entities involved	Core CarbonX Solutions Private Limited has a contractual arrangement with the CME for the lifetime of the PoA. There are no other contractual arrangements with any other business entity.

Part B: Project Overview (Technical Summary, Location and Schedule)

Technical Summary of the project	
Objective of the Project	With the implementation of PoA, the ICS will replace the current usage of conventional cook stoves in the households of ECP. This will improve the indoor air pollution and reduce harmful GHG emission evolved into the atmosphere. The installed bio mass cooker posses the advantage efficiently transferring the heat to the cooking medium ensuring the reduced usage of cooking fuel and GHG emission reductions.
<p>Currently, most of the households in the South Africa use “three-stone” cooking stoves. It is the cheapest stove to produce and is fairly inefficient at converting energy into heat for cooking. These open fires and primitive cook stoves emit a significant amount of smoke leading to a number of diseases, the most serious of which are chronic and acute respiratory illnesses, such as bronchitis and pneumonia. ICS have been designed to provide an enclosure for the fire to reduce the loss of radiant heat, protect it against wind and increase heat transfer. The improvement in efficiency is achieved by properly adjusting the dimensions of the combustion chamber and ensuring effective air flow.</p> <p>Thus, it is essential that adoption of improved cooking stoves on a much larger scale is urgently needed. The current PoA will promote the dissemination of ICS. This will in turn reduce deforestation and degradation of forests in South Africa through participation of the people in adopting fuel efficient stoves. This will also contribute to improvement in quality of lives of the people from South Africa through reduction of drudgery, time and money spent on fuel wood collection and through improvement of indoor air pollution. Globally, the project will contribute by reducing emission of GHG into the atmosphere.</p> <p>Clean Air Renewable Energy (Pty) Ltd (CARE) is the coordinating/managing entity (“CME”) for this SSC-PoA and will be implementing the CDM Programme Activities (CPAs) in South Africa. Under the scheme, it will coordinate the distribution of ICS by the distributor(s) (co-operative societies) to the rural households.</p> <p>The CME will distribute the ICS’s to the households at subsidized rates through the channel of the distribution networks created in each province vis-à-vis the distributors. The distributors give the ICS to the households through technician/entrepreneurs working on a contractual basis. The CME will impart the initial training for the distributors. The distributors will provide the further training to the technicians employed for installation of the cook stoves and further oversee the implementation of the cook stoves. Training will be given to technicians on implementation record keeping and maintenance of the ICS.</p> <p>South Africa is divided into nine administrative Provinces vis-à-vis Easter cape, Western Cape, Northern Cape, North West, Limpopo, Gauteng, Mpumalanga, Kwazulu-Natal, Free State which are subdivided into Districts</p>	

Technical Summary of the project

and these are further subdivided into Villages. Each distributor is responsible for the installation and maintenance of ICSs. The operation of the ICS is carried out by the user, and training on how to operate and maintain the ICS is given by the distributor. The CME will provide the initial training for the distributors; and the training will be penetrated through to the users.

Physical maintenance of the ICS will be provided by the distributor and their technicians. The distributors will follow the monitoring plan and procedures for identifying each stove sold during the course of the project and those which are still in use, so the appropriate number of emission reductions is claimed. To facilitate this process, the distributor will assign a serial number to each ICS during its construction and record this number in the Installations Record. The serial Numbers will be present on each ICS and also on the sales agreement corresponding to the ICS. The distributors are also responsible for collecting the Sales Agreement Contract from the users.

Before the installation of the ICS, the user shall be informed that CDM finance is being used to fund the ICS installation.

Each SSC-CPA keeps an Installations Record, which lists all ICS installed with a unique serial number in addition to a record of the location of the stove and the kitchen. All distributors' records are screened by the CME together with cross-checks on the distributors' installation records in order to confirm that the installation record is authentic and that no double-counting occurs.

Project Constraints

Are there any constraints affecting project operations or commissioning?

The alternative to the project activity is the use of cheaply available three-stone cooking stoves. The CME have made the choice to distribute the ICSs at a price below the retail price to cover the costs for the manufacturing, transporting and assembly. From the CME's perspective there are no financial or economic benefits such as subsidies other than CDM related income. Also, there is a lack of an adequately trained local workforce capable of constructing and maintaining stoves at present. The efficient stove technology to be utilised is not new, however its use in the area is not widespread, with knowledge and skills amongst households typically limited to inefficient traditional three-stone fires. There is no clear development of a market that would drive such capacity to be built due to the financial barriers. Hence, it can be concluded that CDM Revenue has been identified as the only realistic and adequate source of finance to overcome the existing barriers and having the scale and consistency over time necessary to implement and expand the sales of ICS in South Africa, and at the same time maintain quality and customer adherence.

Technology to be employed

Improved Cook Stove (ICS) is a cook stove designed especially to be fuel efficient or reduce the health problems associated with traditional cooking fires. These designs don't fill the home with harmful smoke (through more efficient burning to reduce smoke, and a chimney or venting to remove that smoke), and use less fuel.

The technology is tried and tested and manufactured locally in each province and has been used vastly in all parts of the world. It is made locally of stainless steel and is expected to last 10 years or longer. Mass production for local market is available from local suppliers.

The project developer is developing the project for the first time.

Greenhouse Gases Targeted

The efficiently transferring the heat to the cooking medium ensures exact usage of fuel for the cooking activity reducing CO₂ emissions in to the atmosphere.

Emission reductions

The below table indicates the emission reductions from the CPA.

Emission reductions during the crediting period

Technical Summary of the project

Years	Annual GHG emission reductions (in tonnes of CO ₂ e) for each year
2013	34,381
2014	34,381
2015	34,381
2016	34,381
2017	34,381
2018	34,381
2019	34,381
2020	34,381
2021	34,381
2022	34,381
Total number of crediting years	10
Annual average GHG emission reductions over the crediting period	34,381
Total estimated reductions (tonnes of CO₂e)	343,810

Baseline & Additionality Assessment

As per Paragraph 4 of the applied methodology AMS IIG Version 03, in the absence of the programme, the baseline scenario would be the use of fossil fuels for meeting similar thermal energy needs.

The additionality for the SSC-CPA is demonstrated by Approach 1 or Approach 2 applicable for the CPA.

Approach 1: Demonstration of Additionality of Microscale Project Activities

According to the Guidelines for demonstrating additionality of microscale project activities, ver. 3, energy efficiency project activities that aim to achieve energy savings at a scale of no more than 20 gigawatt hours per year are additional if any one of the conditions below of the below conditions is satisfied:

(a) The geographic location of the project activity is in LDCs/SIDs or special underdeveloped zones of the host country identified by the Government before 28 May 2010;

(b) The project activity is an energy efficiency activity with both conditions (i) and (ii) satisfied (see below):

(i) Each of the independent subsystems/measures in the project activity achieves an estimated annual energy savings of equal to or smaller than 600 megawatt hours; and

(ii) End users of the subsystems or measures are households/communities/SMEs

The small-scale CPAs will fulfil condition (b) as:

- estimated annual energy savings of the independent subsystems (i.e. the ICS) are equal or below 600 megawatt hours, which corresponds to 1.8 GWh thermal energy savings per year. The calculation in the table below shows that individual ICS don't exceed 1.8 GWh thermal savings per year.

NCV of Biomass	0.015	TJ/tonne
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Technical Summary of the project

Conversion from GJ to GWh	3600	GJ/GWh
SSC Type II Limit	180	GWh
Energy per tonne	0.0042	GWh/Tonne
Biomass Saved by Each Cook Stove	2.8871	Tonnes/year
Energy Saved by each Cook stove	0.0120	GWh/year

Therefore, microscale additionality condition satisfaction compliance is demonstrated here and does not need to be repeated in the SSC-CPA.

- end users of the ICS are households/ communities/ SMEs. The PoA is for dissemination of domestic ICS only.

In order to qualify for the micro scale additionality demonstration, it will be demonstrated in the CPA-DD that the number of ICS disseminated under the CPA remains under the threshold of 20 GWh

Approach 2: Additionality demonstration as per Attachment A to Appendix B of the simplified modalities and procedures for small scale CDM project activities.

The additionality of the proposed PoA is demonstrated using the criteria outlined in the attachment A to the Appendix B of the *simplified modalities and procedures for small scale CDM project activities*. The barriers which might have prevented the occurrence of the project activity without CDM revenues are as presented

- **Investment Barrier:**

The alternative to the project activity is the use of the three-stone cooking stoves. The CME have made the choice to distribute the ICSs at a price below the retail price to cover the costs for the manufacturing, transporting and assembly. From the CME's perspective there are no financial or economic benefits such as subsidies other than CDM related income, hence the simple cost analysis will be used to demonstrate that the costs for disseminating the ICS will be greater than the price at which the ICS will be sold. Hence the PoA can not be implemented without CDM revenues.

- **Technological Barrier:**

There is a lack of an adequately trained local workforce capable of constructing and maintaining stoves at present. The efficient stove technology to be utilised is not new, however its use in the area is not widespread, with knowledge and skills amongst households typically limited to inefficient traditional three-stone fires¹⁹. There is no clear development of a market that would drive such capacity to be built due to the financial barriers stated above.

Hence it can be concluded that CDM Revenue has been identified as the only realistic and adequate source of finance to overcome the existing barriers and having the scale and consistency over time necessary to implement and expand the sales of ICS in South Africa, and at the same time maintain quality and customer adherence.

Monitoring

Data / Parameter:	N
Data unit:	Number
Description:	Number of ICS installed
Source of data to be used:	Records of the installation as per the Sales agreement
Value of data applied for the purpose of	Varies according to CPA

Technical Summary of the project

calculating expected emission reductions in section B.5	
Description of measurement methods and procedures to be applied:	The Sales agreement will be stored in paper format as well as the same will be transferred to electronic database which will be maintained by the CME
QA/QC procedures to be applied:	The database is periodically checked by the CME for consistency and accuracy. Each stove will have unique serial Number which will ensure there is no double counting
Any comment:	

Data / Parameter:	η_{new}
Data unit:	Fraction
Description:	Efficiency of stove being deployed as part of the project activity
Source of data to be used:	Annual Water-Boiling test on a representative sample
Value of data applied for the purpose of calculating expected emission reductions in section B.5	0.279
Description of measurement methods and procedures to be applied:	Water boiling test will be carried annually on representative samples of improved stoves in use, by third party. After one year, a one-year-old stove will be tested; whereas after two-years, a one-year and two-year-old stove will be tested.
QA/QC procedures to be applied:	The CME will supervise WBT with expert independent assistance/ third parties. Water Boiling Test will be carried out for a random sample of deployed efficient stoves. Each SSC-CPA will test stove efficiency among a statistically significant sample of end users using a water-boiling test. The sample size shall be chosen for a 90/10 precision (90% confidence interval and 10% margin of error). In cases where the result indicates that 90/10 precision is not achieved, the lower bound of 90% confidence interval of the parameter value will be chosen as an alternative to repeating the survey efforts to achieve the 90/10 precision.
Any comment:	

Data / Parameter:	Usage rate
Data unit:	Fraction
Description:	To determine only stoves that are still operating, measured ex-post through survey/ user feedback
Source of data to be used:	Survey
Value of data applied for the purpose of calculating expected	1

Technical Summary of the project

	emission reductions in section B.5	
	Description of measurement methods and procedures to be applied:	Surveys will be conducted on a representative sample of end-users taken from the CPA sales database
	QA/QC procedures to be applied:	Surveys will be conducted by distributors and the results will be checked by the CME.
	Any comment:	
Type of project/activities	<i>Identify which type of activity is involved in this project - and for each, provide brief details</i>	
a. Energy Supply	<i>This PoA involves the installation of energy efficient improved biomass based Improved Cooking Stoves (ICS) by replacing the conventional three stone cooking stoves. Hence, this PoA comes under the category "Improving energy efficiency by replacing existing equipment".</i>	
b. Energy Demand	Not Applicable	
c. Industrial Process	Not Applicable	
d. Transport	Not Applicable	
e. Waste Management	Not Applicable	
f. Forestry/ land use	Not Applicable	
g. Other	Not Applicable	

Project Boundary

Source	Gas	Included	Justification/Explanation
Baseline: Combustion of non renewable biomass for cooking.	CO ₂	Yes	Major Source of emissions
	CH ₄	No	Minor source of emissions and limited data available. Exclusion is conservative assumption.
	N ₂ O	No	Minor source of emissions and limited data available. Exclusion is conservative assumption.
Project activity: Combustion of non renewable biomass for cooking	CO ₂	Yes	Major Source of emissions
	CH ₄	No	Minor source of emissions and limited data available.
	N ₂ O	No	Minor source of emissions and limited data available.

The geographical area in which SSC-CPAs included in this PoA will be implemented is defined as the Republic of South Africa which has an overall 12.5 Million households. The geographical boundary of SSC-PoA in the Republic of South Africa is also given in the below figure.

Indicate Emissions outside the Project	There is no significant and measureable net emissions of GHG that are attributable to the project outside of the project boundary.
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Technical Summary of the project

Boundary	
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Location of the Project

Province	The PoA will be implemented in all the provinces in South Africa. The first CPA will be implemented in the Eastern Cape Province.
Municipality	The first CPA will be implemented in Umtata, Butterworth, Kind Williams Town and Mqanduli municipalities in South Africa.
Nearest city/large town	East London, Port Elizabeth
Brief description of the location of the project site	The geographical area in which SSC-CPAs included in this PoA will be implemented is defined as the Republic of South Africa which has an overall 12.5 Million households.

Project Schedule/Timetable

Earliest Project Start Date	2012/06
When is the expected first year of CER delivery	2013
Project Lifetime	The lifetime of the CPA is expected to be 10 years
Project End Date	2040/06
Crediting Period	Fixed Crediting period has been identified for the project 10 years
Current Status or phase of the project	The given project is under planning stage.
DNA Approval	No
Approval by other bodies	No

Part C: Performance Against the DNA's Sustainable Development Criteria

South Africa has identified the following sustainable development criteria and indicators against which each CDM project will be assessed. Please provide your interpretation of how this project will address each of these **criteria and indicators** where they are relevant to the project. If the space provided is not sufficient please append additional information as required.

NOTE: For all indicators which are of relevance to the project show how the performance of the project against these indicators can be objectively monitored and measured on an ongoing basis.

1. Economic: Does the project contribute to national economic development?

Please give details (1 paragraph)

Implementation of project activity results in employment opportunities for people involved with the installation, maintenance and sales of these house hold biomass based cookers. There will be less dependence on firewood and expenses and time associated with firewood buying and collection. Business development component of the CPA has resulted in the enhancement of capacity development and technical knowhow for moderately educated people in the community through workshops, seminars and training programs. Adaptation of locally manufactured technology using available raw materials with optimized energy efficiencies leads to build a technical self-reliance.

2. Social: Does the project contribute to social development in South Africa?

Please give details (1 paragraph)

Implementation of project activity results in employment opportunities for people involved with the installation, maintenance and sales of these house hold biomass based cookers. Program will also improve the status of living of people in rural households since the community level implementation of units of these kinds can be carried out at considerably lower costs.

3. Environmental: Does the project conform to the National Environmental Management Act principles of sustainable development?

Please provide brief comment for each of these below.

ICS adopted households will be subjected to lesser level of indoor air pollution vis-à-vis CO₂, carbon monoxide and particulate matter as a result of implementation of this project activity. Pollutants released from the combustion of firewood fuel form a key factor for many respiratory diseases found in rural households. The ECOS will help in reducing the occurrence many respiratory diseases that happens due to burning of firewood. Efficiently transferring the heat to the cooking medium ensures exact usage of fuel for the cooking activity reducing GHG emissions. The depletion rate of forest reserves in provincial areas will be reduced considerably.

i) That the disturbance of ecosystems and loss of biological diversity are avoided, or where they cannot be

There is no impact on the ecosystem of on the biological diversity

avoided, are minimised and remedied	
ii) That pollution and degradation of the environment are avoided, or where they cannot be altogether avoided, are minimised and remedied	The project will reduce deforestation and degradation of forests in South Africa through participation of the people in adopting fuel efficient stoves. This will also contribute to improvement in quality of lives of the people from South Africa through reduction of drudgery, time and money spent on fuel wood collection and through improvement of indoor air pollution. Globally, the project will contribute by reducing emission of GHG into the atmosphere by reducing the fuel consumption through the efficient heat transfer.
iii) That the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied	The project will not disturb the landscapes and sites that constitute the nation's cultural heritage.
iv) That waste is avoided , or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner	<i>The project will reduce the consumption of fuel wood which will contribute in the reduction of waste generated due to the combustion of fuel wood.</i>
v) That the use and exploitation of non-renewable resources is responsible and equitable , and takes into account the consequences of the depletion of the resource	The project activity reduces the consumption of the non renewable biomass.
vi) That the development, use and exploitation of renewable resources is responsible and equitable , and takes into account the consequences of the depletion of the resource.	Not Applicable
vii) That a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions	The CME will distribute the ICS's to the households at subsidized rates through the channel of the distribution networks created in each province vis-à-vis the distributors. The distributors give the ICS to the households through technician/entrepreneurs working on a contractual basis. The CME will impart the initial training for the distributors. The distributors will provide the further training to the technicians employed for installation of the cook stoves and further oversee the implementation of the cook stoves. Training will be given to technicians on implementation record keeping and maintenance of the ICS. These technicians will be designated for certain number of ICS and will be responsible for data recoding and data storage.
viii) That negative impacts on the	Over 80% of these rural households depend on fuel wood as their

<p>environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied</p>	<p>primary source of energy. Total demand for fuel wood is estimated at 11.2 million tons per annum, which is equivalent to 40% of residential energy demand. The number of households that depend on fuel wood as their main energy source is estimated at 2.3 - 2.8 million, the majority of which are located in rural areas. This represents some 12 - 15 million people or 25 - 30% of the South African population.</p> <p>Thus, it is essential that adoption of improved cooking stoves on a much larger scale is urgently needed.</p>
<p>Other comments</p> <p>The intention of the proposed small scale Program of Activity ("hereafter SSC-PoA") involves the installation of energy efficient improved biomass based Improved Cooking Stoves (ICS) in the households of South Africa. It is also intended to expand the geographical scope of the PoA to the other SADC countries comprising of Angola, Botswana, DRC, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania and Zambia at a later stage. The programme is named as "ECOS". Implementation of the proposed activity will reduce the usage of conventional fuels i.e. fuel wood mainly used for household activities. Also the GHG emission reductions occurring from the combustion of wood in energy improved version of cooker unit contribute to sustainable development. ICSs disseminated under this PoA are more efficient in transferring heat from the fuel to the pot than the so called traditional stoves.</p>	

Indicators in Support of the Project Approval Criteria

Category	Indicator	Comment
Environmental	Impact on local environmental quality	<ul style="list-style-type: none"> • Impact of the project on air quality • Impact of the project on water pollution • Impact of the project on the generation or disposal of solid waste • Any other positive or negative environmental impacts of the project (such as impacts on noise, safety, visual impacts, or traffic) <p>The project will replace conventional cooking stove with the improved cooking stove. In conventional cooking stove, heat is allowed to escape into open air and emit a significant amount of smoke. Thus, the ICS will reduce the air pollution and smoke and hence, will contribute in better air quality. Also, it reduces the consumption of fuel wood significantly leading to considerable amount of reduced waste and contributing towards better quality of water.</p> <p>This indoor cooking smoke has been associated with a number of diseases, the most serious of which are chronic and acute respiratory illnesses, such as bronchitis and pneumonia. ICS have been designed to provide an enclosure for the fire to reduce the loss of radiant heat, protect it against wind and increase heat transfer. The improvement in efficiency is achieved by properly adjusting the dimensions of the combustion chamber and ensuring effective air flow.</p>
	Change in usage of natural resources	<ul style="list-style-type: none"> • Impact of the project on community access to natural resources • Impact of the project on the sustainability of use of water, minerals or other non renewable natural resources • Impact of the project on the efficiency of resource utilisation <p>The number of households that depend on fuel wood as their main energy source is estimated at 2.3 - 2.8 million, the majority of which are located in rural areas. This represents some 12 - 15 million people or 25 - 30% of the South African population. ICS will reduce the consumption of fuel wood and hence will contribute in the reduction in the rate of deforestation in the provinces of South Africa. Moreover, the project will also contribute in efficient way of resource utilization.</p>
	Impacts on biodiversity and ecosystems	<ul style="list-style-type: none"> • Changes in local or regional biodiversity arising from the project <p>The project will reduce the rate of deforestation and hence, will contribute in saving the biodiversity of the regions of South Africa.</p>

Indicators in Support of the Project Approval Criteria		
Category	Indicator	Comment
Economic	Economic impacts	<p>Please comment on the economic impacts of the project. Comment specifically on the indicators of relevance which are given here. (1 paragraph)</p> <p>The implementation of the project activity will result in the employment opportunities for people involved with installation, maintenance and sales of these house hold biomass based cookers. The program will improve the status of living of people in rural households since the community level implementation of units of these kinds can be carried out at considerably lower costs. There will be less dependence on firewood and expenses and time associated with firewood buying and collection. The ICS is made locally in the local market, hence, it will not give any impact on foreign exchange requirements and on foreign direct investment.</p>
	Appropriate technology transfer	<p>Please comment on the impacts of the project on appropriate technology transfer. Comment specifically on the indicators of relevance which are given here. (1 paragraph)</p> <p>Adaptation of locally manufactured technology using available raw materials with optimized energy efficiencies leads to build a technical self-reliance. The project will be replicated across Republic of South Africa through the means of the CPA's.</p>

Indicators in Support of the Project Approval Criteria		
Category	Indicator	Comment

Indicators in Support of the Project Approval Criteria

Category	Indicator	Comment	
Social	Alignment with national provincial and local development priorities	<ul style="list-style-type: none"> • How the project is aligned with provincial and national government objectives • How the project is aligned with local developmental objectives • Impact of the project on the provision of, or access to, basic services to the area • Impact of the project on the relocation of communities if applicable • Contribution of the project to a any specific sectoral objectives (for example, renewable energy targets) 	<p>As a responsible global citizen with moral as well as legal obligations under the UNFCCC and its Kyoto Protocol, South Africa is committed to contributing its fair share to global GHG mitigation efforts. Accordingly, South Africa has committed itself to an emissions trajectory that peaks at 34% below a “Business as Usual” trajectory in 2020 and 40% in 2025, remains stable for around a decade, and declines thereafter in absolute terms. The PoA will help the effort for South Africa in meeting the emission reduction targets.</p>
	Social equity and poverty alleviation	<ul style="list-style-type: none"> • Impact of the project on employment levels? (specify the number of jobs created/lost; the duration of time employed, distribution of employment opportunities, types of employment, categories of employment changes in terms of skill levels and gender and racial equity) • Impact of the project on community social structures • Impact of the project on social heritage • Impact of the project on the provision of social amenities to the community in which the project is situated • Contribution of the project to the development of previously underdeveloped areas or specially designated development nodes 	<p>The implementation of the project activity will result in the employment opportunities for people involved with installation, maintenance and sales of these house hold biomass based cookers. The program will improve the status of living of people in rural households since the community level implementation of units of these kinds can be carried out at considerably lower costs. There will be less dependence on firewood and expenses and time associated with firewood buying and collection.</p>

Indicators in Support of the Project Approval Criteria

Category	Indicator	Comment
General	General Project Acceptability <ul style="list-style-type: none"> • Are the distribution of project benefits deemed to be reasonable and fair? 	The CME have made the choice to distribute the ICSs at a price below the retail price to cover the costs for the manufacturing, transporting and assembly. From the CME's perspective there are no financial or economic benefits such as subsidies other than CDM related income. The revenue from the sale of CER's will be used to fund the monitoring costs and as well as training the operation and maintenance personnel which is essential to operate the cook stoves successfully.

Part D: Finance

Project Costs	
Development Costs (R's)	The development cost per cook stove is expected to be 40 Rands
Installed Costs (R's)	The installation cost per cook stove will be negligible.
Other Costs (R's)	The other costs will include the training to be provided for the distributors to successfully implement the project.
Total Project Costs (R's)	The total project cost per cook stove is 40 Rands.
Sources of Finance	
Equity	The finance for the project activity will be partly through the internal accruals from CARE and partly through the same of emission reductions. The organization for the funding will be identified after the registration of the project activity.
Debt (long term)	The finance for the project activity will be partly through the internal accruals from CARE and partly through the same of emission reductions. The organization for the funding will be identified after the registration of the project activity.
Debt (short term)	The finance for the project activity will be partly through the internal accruals from CARE and partly through the same of emission reductions. The organization for the funding will be identified after the registration of the project activity.
Amount not identified (R's)	The costs for the training to be provided for the distributors has not been factored.
Total CDM Contribution sought	The amount of CDM contribution sought for the first CPA is expected to be 1.05 Million Rand
Expected Price of CER in case of a contract to purchase for: A period of 7 years A period of 10 years A period of 14 years (2x7 years)	30 Rands 30 Rands 30 Rands
Indicate the projected Internal Rate of Return for the project with and without CER revenues.	The IRR for the CPA cant be computed as the revenues are lower than the cost per cook stove resulting in negative cash flows.
Constraints on tradability of carbon credits	Not Applicable
Preliminary discussions with potential purchasers	The CME is in discussion with Standard Bank for the sale of the CER's from the first 2 CPA's.

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