

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

CONTENTS

- A. General description of the small scale project activity
- B. Application of a baseline and monitoring methodology
- C. Duration of the project activity / crediting period
- D. Environmental impacts
- E. Stakeholders' comments

Annexes

- Annex 1: Contact information on participants in the proposed small scale project activity
- Annex 2: Information regarding public funding
- Annex 3: Baseline information
- Annex 4: Monitoring Information

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Revision history of this document

Version Number	Date	Description and reason of revision
01	21 January 2003	Initial adoption
02	8 July 2005	The Board agreed to revise the CDM SSC PDD to reflect guidance and clarifications provided by the Board since version 01 of this document. As a consequence, the guidelines for completing CDM SSC PDD have been revised accordingly to version 2. The latest version can be found at < http://cdm.unfccc.int/Reference/Documents >.
03	22 December 2006	The Board agreed to revise the CDM project design document for small-scale activities (CDM-SSC-PDD), taking into account CDM-PDD and CDM-NM.

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SECTION A. General description of small-scale project activity**A.1 Title of the small-scale project activity:**

Title: Solar Cookstoves Project in Bolivia

Version: 2

Date: 31/01/2011

Version: 3

Date: 14/06/2011

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

Bolivia is one of the poorest countries in Latin America, and Bolivian people still face difficulties to meet their cooking energy needs. With the present government's efforts to spread the use of NG, most of the urban population has access to LPG or NG, but due to the higher cost and lack of infrastructure to supply LPG and NG in the rural areas has slowed down its diffusion in the remote areas. As a consequence, a part of the rural population still rely on firewood to meet their cooking energy needs. On the one hand, the poorest areas in Bolivia, are located on the Altiplano, the mountainous plateau located at 4000m of altitude, where wood resources are scarce, and mainly constituted of small trees throughout the mountains. As a consequence of the overexploitation of these forest resources, the region is affected by a strong deforestation. Moreover, the smoke coming out of the energy-inefficient stoves has a negative health impact on women and children who are the main players in the kitchen. According to the World Health Organization, Indoor Air Pollution¹ is one of the major global concerns that remain unattended. The population relying on LPG for their cooking energy needs, has to spend an important part of its income to buy the fuel every month. They are also regularly facing problems of LPG supply, forcing them to use fuels as firewood. Also, the use of LPG, which is a fossil fuel, contributes to carbon emissions.

The high incidence of solar light in Bolivia and its high altitude make the solar energy one of the alternative sources for LPG and firewood. This country is particularly fit for the diffusion of solar cook-stoves. The solar cook-stoves can cover most of the cooking energy needs of the beneficiaries, reducing about 50% of the fuel consumption of the households, and can even be used for other purposes such as pasteurisation of water.

Purpose of the Project Activity

The purpose of the project is to improve the living conditions of around 6900 Bolivian households, by promoting the use of a clean and cost-free energy source: solar energy for cooking, and at the same time, the project intends to fight against global warming by reducing deforestation and use of fossil fuels in the country.

¹ <http://www.who.int/mediacentre/news/statements/2004/statement5/en/>

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The beneficiaries of the project will save money from the purchase of traditional fuel. Moreover, they will save considerable time from the collection of firewood, the purchasing of LPG (some people have to travel for more than 2 hours to purchase their LPG tank) and the cooking process (indeed, even if cooking with the solar cook-stove takes much longer, it doesn't need surveillance as the food cannot get burnt or dehydrated). Indeed, the project will avoid most of the smoke emissions from firewood, which cause lung and eye diseases. The solar cook-stove can be used to pasteurize water. And, cooking over a gentle heat with the solar cook-stoves preserves the food nutrients and produces healthier food.

The beneficiaries of the project learn how to cook healthy food with their solar cook-stove during nutrition courses, but also through a cooking recipe handbook given by the Association Inti Illimani (AII) team. The project beneficiaries also get nutritional and dietary advices from the AII team members. On the environmental aspect, the project helps to replace firewood; due to which, it relieves some of the pressure on the forest in areas where these resources are already scarce. This avoided deforestation as well as the reduction of use of fossil fuels as LPG contributes to the fight against global warming.

The technology

The solar cook-stoves are made of a wooden box, thermally isolated by lama or sheep wool. A double-glazing traps the solar energy inside the box thanks to the greenhouse effect, while reflectors concentrate the sunbeams inside the box. The temperature inside the cook-stove can rise to 180°C. The cook-stove can be used in two different ways:

As a cook-stove: food is directly cooked thanks to solar energy.

As a thermal case: when the weather is cloudy or rainy, the beneficiaries can heat up their food (5 minutes) with their traditional fuels, put the uncooked food container in the cook-stove, where the conserved, heat is used to completely cook the food.

The pre-heating of the food with traditional fuels can also be used in any time to speed up the cooking. Therefore, a lot of beneficiaries resort to this process.



Implementation of the project

The project takes place in 4 of the 9 departments of the country: La Paz, Oruro, Potosi and Cochabamba, but focuses especially on the three first departments, located in the higher altitude and in the poorest regions of the country. A history of the project from the beginning is presented in the following table:

2007	Signature of an agreement between Bolivia Inti Sud Soleil and GoodPlanet to go into the voluntary carbon market.
2008	Definition of the process to complete registration of the project to Gold Standard Beginning of tests and carbon studies : KS, KT
2009	Creation of a Bolivian legal entity : Inti Illimani. Pursuance of tests and carbon studies : KS, KT
2010	First version of PDD submitted to Gold Standard

The implementation of the project is carried out in 3 steps:

- Application for solar cookstoves sent by groups of households are reviewed and accepted by the AII team

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- Conduction of an intensive workshop for the beneficiaries
- Monitoring and follow-up of the beneficiaries after adoption of the solar cookstoves.

The project is being implemented by Bolivia Inti Sud Soleil (BISS) and its local partner Inti Illimani. The solar cookstoves are disseminated through a 4 days workshop conducted by the Inti Illimani team in the local communities. Beneficiaries have to contact AII by submitting at least a group of 20 to carry out the training workshop.

The workshop consists of training the beneficiaries to build their own solar cook-stove, under the directive of AII staff. AII provide all the required materials and food during the workshop. This method of dissemination has been chosen because it allows people to understand clearly the basic components of the solar cook-stove by making them capable to repair their cook-stove by themselves. For the most skilled of them, they can even build new cook-stoves on their own after the training at the workshop (as all the information about the dimensions, etc. are also given to the participants). Also, since a cooking demonstration with the solar cookstoves is given during the course, the beneficiaries can witness the technology and adopt it more easily. During the 4 days construction and utilisation courses, Inti Illimani instructors give the beneficiaries not only the theoretical lectures about the use of solar cook-stove (solar application, thermal case application, etc.), but also about nutrition and health and a demonstration of utilisation of solar cookstoves by cooking at least one meal during the training (see Annex 8 for more details on the construction courses).

After the workshops, Inti Illimani organizes monitoring meetings with the group of beneficiaries in every 2 weeks, to help with the assimilation of the technology. The group has an emulating effect: seeing others succeeding, the beneficiaries are willing to try again and improve their cooking skills. AII monitoring technicians are always available to help and discuss any doubts, motivate people and give detailed explanations to the beneficiaries when needed.

The delay between signature of an agreement between BISS and GoodPlanet and first version of PDD submitted to Gold Standard is also due to various local barrier like language as the local team speak Spanish and all the required documenting had to be translated from Spanish to English, and also lack of expertise to carry out the required surveys, tests, documentation etc. Experiencing from these local barriers, the project proponent has been able to train locally available expertise to complete the required documents. All the documents are provided to the Gold standard have been submitted for further validation process.

A.3. <u>Project participants:</u>
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Name of Party involved	Private and/or public entity (ies) project participants	Kindly indicate if the Party involved wishes to be considered as project participant
Bolivia	Inti Illimani Private entity (Non-profit association)	No
France	Bolivia Inti – Sud Soleil Private entity (Non-profit association)	No
France	GoodPlanet Foundation Private entity (Non-profit foundation)	No

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A copy from the consent to establish/operate given by the National Tax Service is joined in the Annex 13. On the other hand, all NGOs must be registered in the Single National Register (RUN) of NGOs led by the Vice Minister of Public Investment and External Financing². Inti Illimani Association registration is ongoing.

The present Project activity is coherent with direction of the actual Bolivian Government as it promotes the use of renewable energies. This as stated in some official documents or publications:

- Supreme Decree 29272 “*The strategy is to develop renewable energy sources to ensure energy independence...*”³ or in a
- “Energías renovables en Bolivia” magazine specializing in energy “...The Vice Ministry of Electricity has been collecting the experiences of other countries to incorporate non-conventional renewable energy in the national energy matrix”⁴.

Concerning the main activity of the present project: solar energy; in Bolivia there is not a specific law related to it or to any kind of other renewable energy⁵.

No Environmental Assessment Study (EAS) is required for such project activity, more details about consistency with mandatory laws and regulations are presented in the paragraph B.5.

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

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

A.4.1.1. Host Party(ies):

Bolivia

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

The solar cook-stoves will be constructed in 4 departments of the country: La Paz, Oruro, Potosi and Cochabamba.

A.4.1.3. City/Town/Community etc.:

² Decreto Supremo N° 22409 de fecha 11 de enero de 1990 : <http://www.vipfe.gob.bo/ryp/ongs/DS-22409.pdf>

³ http://sawi.ae.gob.bo/docfly/app/webroot/uploads/IMG-ML_NG-admin-2010-09-23-PND.pdf Pg. 167

⁴ <http://eerrbolivia.blogspot.com/2010/11/bolivia-impulsa-incorporacion-de.html>

⁵ <http://www.hidrocarburosbolivia.com/bolivia-mainmenu-117/semanarios-mainmenu-126/26520-una-ley-de-renovables-editorial-energy-press.html>

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The stoves will be used in peri-urban and rural communities of La Paz, Oruro, Potosi and Cochabamba. The workshop, where all materials are prepared, is located in La Paz city.

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

Figure 1: Area of the project (zones concerned by the project are highlighted in yellow)



Inti Illimani's main office is located in the city of La Paz, but as mentioned above, the project also takes place in other three departments. The coordinates of main cities of those departments are given below:

Department	Latitude - Longitude
La Paz	16° 30' S 68°09' W
Oruro	18°0' S 67°09' W
Potosi	19°35' S 65°45' W
Cochabamba	17°26' S 66°10' W

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

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The present project falls under the Sectoral Scope 1: Energy industries (renewable - / non-renewable sources).

As submitted to the Gold Standard, the project falls under the micro-scale category, as estimated emissions reductions are under 5000 tonnes CO₂ eq per year (See section A.4.4.1).

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

According to the following table, estimated amount of emission reductions over the 10-year crediting period is **31 443 tons CO₂eq**.

	Year	Number of SCS per year	Accumulated number of SCS	ER (tons of CO ₂ eq/year)
	2007	400	400	
	2008	400	800	
1	2009	400	1200	821,44
2	2010	500	1700	1 180,78
3	2011	600	2300	1 646,49
4	2012	700	3000	2 183,31
5	2013	700	3700	2 763,37
6	2014	800	4500	3 357,16
7	2015	800	5300	3 994,19
8	2016	800	6100	4 582,32
9	2017	150	6250	4 995,11
10	2018		6250	4 949,76
	Total	6250	6250	30 473,92
	Total number of crediting years	10 years		
	Annual average over the crediting period of estimated reductions (tonnes of CO₂e)	2 646		

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

The GoodPlanet Foundation (France) has funded the project activity under the VER initiatives. Also, no public announcement has been made in the last three years of the project going ahead without carbon revenues keeping in align with the Gold Standard rules and regulations.

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

We confirm the project is not a part of a large-scale project. A similar project is being led in Peru, but as required in the Gold Standard requirements, these two projects have not been bundled.

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:

The methodology applied to the project is: “Indicative Programme, Baseline, and Monitoring Methodology for Improved Cook-Stoves and Kitchen Regimes” V.02 approved by the Gold Standard.

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

This methodology has been chosen because it is applicable as per the definition of Section I of the “Indicative Programme, Baseline, and Monitoring Methodology for Improved Cook-Stoves and Kitchen Regimes”, as detailed in the following paragraph:

This methodology is applicable to programs or activities introducing improved cook-stoves and practices to households and institutions within a distinct geographical area. The project activity is implemented by a project coordinator who acts as a project participant. The individual households and institutions will not act as project participants.

The methodology addresses the switch from cook-stoves and kitchen regimes used in institutions or domestic homes having significant greenhouse gas emissions to those having considerably less or zero emissions. [...]

The following conditions apply:

Low-emission cook-stoves and regimes replace relatively high-emission baseline scenarios.

The project boundary can be clearly identified, and the stoves counted in the project are not included in another voluntary market or CDM project (i.e. no double-counting takes place)

The project is located in a single country.

The improved cook-stoves do not number more than ten per kitchen and each have continuous useful energy outputs of less than 50kW (defined as total energy delivered usefully from start to end of operation divided by time of operation)

Examples of project technologies are improved biomass stoves, fossil fuel stoves, use of stove displacing technologies such as solar cookers, water purifiers and heat retention cookers, renewable-based electricity (biogas, hydro, wind, PV, etc), and measures that reduce consumption of non-renewable biomass or other green-house emitting fuels. Examples of Baseline technologies are biomass stoves, dung stoves and fossil fuel stoves.

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Under the presented scheme:

- The project is implemented by Inti Illimani who acts as the project participant⁶.
- The project aims at replacing non-renewable firewood and/or LPG fuel mix by the use of solar cook-stoves, which is a clean and sustainable energy technology.
- The project boundaries are clearly identified by the communities where solar cookstoves have been implemented. Moreover, in order to ensure the identification of the Inti illimani cookstoves, logos have been drawn on the front of the cookstove and numbers have been assigned for every cookstove since 2010. These cook-stoves are not included in any other voluntary market or CDM projects. Inti Illimani has other funding for this project, but none of them comes from carbon finance.
- The project is located only in Bolivia.
- Each beneficiary only builds one cook-stove during the construction course.
- All SCS since 2007 are identified by a number in each course, also since 2010 SCS have a correlative number. All this information is recorded in the beneficiary's database. Moreover, all SCS are identified with the logo of Bolivia Inti Sud Soleil and Inti Illimani.
- The useful energy output of the solar cook-stoves is approximately 40W, which is under 50kW (demonstration is given in Annex 7).
- Finally, solar cookers are explicitly named as project technologies in the applied methodology.

B.3. Description of the project boundary:

The project geographical boundaries are defined as follow:

- The target area includes the four provinces of La Paz, Oruro, Potosi and Cochabamba.
- The fuel collection area is defined as the Bolivian Altiplano region (a mountainous plateau with an average height of 3500 to 4000m, see NRB report for more details).

In accordance with the methodology, the following emissions sources will be included in the project boundaries:

	Source	Gas	Included	Justification/ Explanation
Baseline	Cooking, production of fuel, and transport of fuel	CO ₂	Yes	Important source of emission
		CH ₄	Yes	Important source of emission
		N ₂ O	Yes	Can be significant in some fuels
Project activity	Cooking, production of fuel, and transport of fuel	CO ₂	Yes	Important source of emission
		CH ₄	Yes	Important source of emission
		N ₂ O	Yes	Can be significant in some fuels

B.4. Description of baseline and its development:

⁶ Individual households are not considered as project participant, an agreement is signed by them during the construction courses to ensure the project ownership (a scanned copy of this agreement is provided in Annex 11)

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The project is a retroactive project and as per the requirement of the methodology applied, Inti Illimani team has carried out a baseline survey in the project area.

The methodology for baseline emissions is applied in a series of steps. Further information about clusters are provided in the Kitchen Survey Report, given as a separate document.

As new stoves are disseminated every year, an evolving baseline has been adopted. Baseline surveys are carried out continuously during the new construction courses.

Baseline cookers are used along with the solar cookers as long as there is a mechanism put in place to provide an incentive for using less the old stoves. The use of traditional and solar cookers is checked during a 4 months strong monitoring. Also an incentive is given to beneficiaries who use their SCS all sunny days. Following pictures show some monitoring meetings, visits and incentive prix delivery.

Figure 2 : Surprise visits of a founding member of BISS



Figure 3 : Monitoring meeting**Figure 4 : Incentive prix delivery**

Step 1. Determine customer groups or project “clusters”

Step 1.1: Establish a pilot Sales Record

A first pilot sales record has been established for beneficiaries. It includes a detailed customer database and a project database. Following data is contained in the database:

- Date of the course
- Name of the Village or the community
- Zone urban / rural
- Distance and traveling time from the office (La Paz) to the village
- Number of participants of the course
- Number of participants using different fuels
- Name of the beneficiaries
- Address
- Fuel used for cooking and estimated fuel consumption before intervention

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- Number of persons in the household
- Monthly income

Step 1.2: Provisionally assess fuel types, fuel mix, and kitchen regime

According to the data from the sales record, fuels and energy used by beneficiaries of the present project in Baseline and project scenario are:

Table 1: Fuels used by beneficiaries of the project

Category	Fuel/energy source
Renewable and non-renewable woody biomass	Firewood from trees and shrubs
Renewable energy fuels, sources or methods with zero greenhouse gas emissions	Agricultural residues, solar cook stoves
Alternative Fuels emitting greenhouse gases during production or combustion	LPG

Almost all beneficiaries have access to LPG, even people living in very isolated places; a provisional estimate of how the fuels are mixed and apportioned has been done:

- Most of urban people use only LPG
- A part of rural people use LPG and Firewood

Because of the characteristics of the proposed project, solar cook stoves are mainly addressed to domestic use, no Solar Cook stove with a commercial use has been identified.

The project beneficiaries use two main fuels for cooking: LPG or firewood, and people using both firewood, and LPG. As a consequence, two clusters are identified:

- “LPG users” and
- “LPG and firewood users”.

Seasonal variations can be significant for firewood users, the Bolivian summers are usually rainy while the winter is very dry (one day of rain every month). During the summer, the firewood gets wet, so the households tend to use more gas. On the contrary, during winter, since the firewood is dry, the households tend to use it more often.

Step 1.3: Analysis of renewability fraction of wood-fuels

As shown in the NRB report (given as a separate document), a large part (around 60%) of the wood used to cook is non-renewable.

Step 1.4: Divide pilot Sales Record into major groups or clusters

Sales records have been divided into the following groups:

Table 2: Sales records division into major groups (in number of households)

	LPG	LPG + FW	FW	FW + Dung	Other
2007	235	146	15		5
2008	233	125		14	2
2009	235	85	26		54

Major groups have been defined according to kind of fuel used by households.

Step 1.5: Carry out a qualitative survey (Kitchen Survey)

Because of the method of distribution of Solar Cook stoves, the KS is done continuously by the Inti Illimani team; it is carried out during the courses and during the monitoring meetings.

In the order to ensure a representative sample, 25% of users have been interviewed. Kitchen survey sample is randomly selected from each course (around 5 beneficiaries per course out of the 20 participants). Normally, most of beneficiaries of one course belong to the same cluster.

This sample is more than the minimum sample size recommended by the methodology (10% of group size is recommended whereas around 25% of solar cook-stoves beneficiaries are participating to the KS). The questionnaire for Kitchen Survey model is included in Annex 6 and in the KS report (as a separated document).

The first part of the survey concerns cooking habits before the acquisition of the solar cook-stove (baseline situation) and is filled out during the construction course by an Inti Illimani instructor. The second part concerning the solar cook-stove situation (project scenario) is filled 4 months later, when the beneficiary has adapted the new technology.

The KS included in the PDD takes into account 270 beneficiaries from 2007 to 2009.

Detailed analysis and results of KS are included in the KS report (separate document). It results in the following recommendations for demarcation of clusters and recommendations for the number and season of the Kitchen Tests have been made:

- **Clustering**

Two main overall clusters, related to the baseline clusters, were identified. Each of them has been described:

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- **LPG Users:** Households that use LPG for cooking. LPG is used in the baseline, as well as in the project (along with the solar cookstove). A single Kitchen Test performed at any time of the year is enough to assess their fuel savings.
- **LPG and Firewood Users:** Households relying on a mix of LPG and firewood. A KT in summer should assess correctly their fuel savings.
- **Solar Cookstove appliances**
All beneficiaries use the stoves for domestic appliances. Clusters have been defined according to fuel consumption for cooking because that is the main appliance of solar cook.
- **Seasonal variation in fuel consumption:**
The use of the solar cook-stove depends on the availability of the sunrays. When the weather is sunny, the use of the cook-stove as a solar cooker assures the maximum fuel savings. On the opposite, a cloudy or rainy weather leads to the use of the cook-stove as a thermal case, or sometimes (depending on the habits of the households), to the non-use of the cook-stove. In this case, the fuel savings are less. Therefore, fuel savings are less important in summer (rainy season), and more important in winter (dry season).

Two Kitchen Tests could be done for each cluster, one for the solar cooker application and one for the thermal case application, but would require too much time and resources. Therefore, only one KT will be performed for the cluster of firewood users, and it will be done during the summer. Also, one KT will be done for each cluster, taking into account the seasonal variations and the weather factors, to ensure conservativeness:

- **LPG users:** According to the results of the baseline KS, the LPG consumption does not change with seasons. One KT will be done for this cluster, at any time of the year.
- **LPG and firewood users:** The baseline survey indicates that the firewood and LPG consumption are greater during the winter. Therefore, it is conservative to perform the KT during summer, when the consumption is lower, and when the rainy weather reduces the benefits of the solar cooker. So one KT will be done, during the summer, in order to ensure conservativeness.

- **Regional variation**

There isn't a relevant difference in fuel consumption from Altiplano and Valley's beneficiaries. No further cluster will be created; Kitchen Test can be carried out with beneficiaries living in either region.

Also, no major switching trends were found during the study.

Step 1.6: Refine demarcation of clusters and populate Project Database

Sales record has been organized according to clusters definition for calculation of emission reductions.

Table 3: Sales records division into defined clusters (in number of households)

	LPG	LPG + FW	Other
2007	235	161	5
2008	233	125	16
2009	235	111	54

Step 2. Calculate baseline emissions**Step 2.1: Estimate expected variation and improvement in emission reductions**

From the KS results, the size of samples for the Kitchen Test (KT) has been established for a confidence interval of +/- 15% at a confidence level of 90% (for the used fuel reduction).

Table 4: Kitchen test sample size from KS results

Cluster	Baseline scenario (without SCS)			Project scenario (with SCS)			Kitchen Test sample size ⁷
	Estimated Mean (bottle/month)	Estimated Standard deviation	Estimated CV	Estimated Mean (bottle/month)	Estimated Standard deviation	Estimated CV	
LPG users	1,8412	0,78863	0.42	0,9686	0,54063	0.55	11
LPG+FW users	1,2961	0,73035	0.56	0,6104	0,27110	0.44	11

The samples for the KT should include at least 11 households for each cluster.

Step 2.2: Specify the units of emission reductions or fuel consumption

Fuel consumption will be mainly given, when not specified, in kg per month and family. Emission reductions will be in tCO₂e per stove per month.

Step 2.3: Make quantitative measurements (Kitchen Tests)

One KT per cluster has been conducted, it has been done on households using the solar cook-stove, comparing their traditional fuel consumption (baseline scenario) with their new fuel consumption thanks to the solar cook-stove (project scenario). KTs have been carried out in as follow:

- **LPG + FW users** (Llallagua) in February 2010 (22 households). These beneficiaries owned their solar cookstove for one year, and were considered to have well adopted the technology.
- **LPG users** (La Paz city) in May 2009 (28 households).

⁷ Sample size calculated according to: Bailis (2007) Kitchen Performance Test (KPT). Sample size required to show statistically significant reductions in per capita fuel consumption (95% confidence)

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Following considerations have been taken into account for KT:

- Paired samples have been taken to compare pre- and post-installation consumption in the same houses.
- The selection of beneficiaries groups have been randomly chosen however practical aspects for carrying out the tests have been taken into account (users availability and motivation, dispersion of the households in the communities, distance, etc.).
- The period over which the tests have been carried out is one week of pre- and one week of post-installation to avoid risks of heterogeneity cooking habits and to include weekend cooking in the correct annual ratio to week day cooking.
- pre- and post-installation conditions were the same, two phases have been immediately follow each other

Step 2.4: Calculate baseline

The Baseline Emissions per stove are, therefore, calculated as follows (for each cluster separately);

(1)

$$\begin{aligned}
 BE_y &= X_{nr,bl,y} * B_{bl,y} * EF_{bl,bio,CO_2} + \sum(AF_{bl,i,y} * EF_{f,CO_2,i}) \\
 &+ \sum(\text{Non-CO}_2 \text{ emissions during cooking}) \rightarrow \text{equation 2} \\
 &+ \sum(\text{GHG emissions during production of the fuels}) \rightarrow \text{equation 3}
 \end{aligned}$$

Where

Parameter	Description	Value	unit	Source
BEm	Baseline emissions per stove in month m specific to cluster		tonnes CO ₂ e/month	
X _{nr,bl,y}	The non-renewable fraction of the woody biomass harvested in the project collection area in year y in the baseline scenario	61%	%	NRB report
B _{bl,y}	The mass of woody biomass (firewood) consumed during cooking in the baseline in year y		tonnes/month	KT report
EF _{bl,bio,co2}	The CO ₂ emission factor for use of the biomass fuel (firewood) in the baseline scenario	1.75	tonnes CO ₂ /tonne FW	IPCC Guidelines 2006, Table 1.2 and Table 2.5
AF _{bl,i,y}	The mass of alternative fuel i in the baseline in month m in accordance with trends projected throughout the project period,. This mass can be set to zero in cases where the KT is appropriately designed to subsume alternative fuels (approach 3).		tonnes/month	KT report

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$EF_{af,co2,i}$	The CO2 emission factor for use of the alternative fuel i in the baseline	2.98	tonnes CO ₂ / tonne LPG	IPCC Guidelines 2006, Table 1.2 and Table 2.5
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(2)

$$\text{Non-CO2 emissions during cooking} = \Sigma (Bbl,y * EF_{bl,bio,non-co2,i}) + \Sigma (AF_{bl,i,y} * EF_{af,i,non co2 gas i})$$

(3)

$$\begin{aligned} \text{GHG emissions during production of the fuels} = & X_{nr} * Bbl,y * EF_{bio,prod,co2} \\ & + \Sigma (AF_{bl,i,y} * EF_{af,prod,co2,i}) \\ & + \Sigma (Bbl,y * EF_{bio,prod,non-co2 gas i}) \\ & + \Sigma (AF_{bl,i,y} * EF_{af,i,prod,non-co2 gas i}) \end{aligned}$$

Where

Parameter	Description	Value	Unit	Source
$EF_{bl,bio, CH4}$	Emission factor for CH4 in the baseline scenario	0.10	tonnes CH4 / tonne FW	Calculated from IPCC Guidelines 2006, Table 1.2 and Table 2.5
$EF_{bl,bio,N2O}$	Emission factor for N ₂ O in the baseline scenario during cooking	0.02	tonnes NO ₂ / tonnes FW	Calculated from IPCC Guidelines 2006, Table 1.2 and Table 2.5
$EF_{af,i,CH4}$	Non-CO2 Emission factor during cooking for LPG for CH4	0.0050	tonnes CH4 / tonnes LPG	Calculated from IPCC Guidelines 2006, Table 1.2 and Table 2.5
$EF_{af,i,N2O}$	Non-CO2 Emission factor during cooking for LPG for N ₂ O	0.0015	tonnes NO ₂ / tonnes LPG	Calculated from IPCC Guidelines 2006, Table 1.2 and Table 2.5
$EF_{bio,prod,co2}$	CO2 Emission factor for wood-fuel during production	0	tonnes gas / tonnes fuel	
$EF_{af,prod,co2,i}$	CO2 Emission factor for LPG during production	0.41	tonnes gas / tonnes fuel	Calculated from ADEME 2007, Guide des facteurs d'émissions, Table 4
$EF_{bio,prod,non-co2}$	Non-CO2 Emission factor for wood-fuel during production	0	tonnes gas / tonnes fuel	
$EF_{af,i,prod,non-co2}$	Non-CO2 Emission factor LPG for GHG gas i during production		tonnes gas / tonnes fuel	

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:

The additionality is demonstrated using the version 5.2 of the “*Tool for the demonstration and assessment of additionality*” that is available on the UNFCCC website as required in the methodology. The assessment was made from the perspective of the project coordinator (Inti Illimani) undertaking the project activity.

CDM – Executive Board

Step 1. Identification of alternatives to the project activity

Sub-step 1a. Define alternatives to the project activity

The following options are identified as alternative baseline scenarios:

- *A1: Continuation of the current situation*
- *A2: Project undertaken without VER Credits*
- *A3: Solar cookstove project implemented by the government*
- *A4: Solar cookstove sold through the market*
- *A5: Switch to LPG and/or other fuels.*

Sub-step 1b. Consistency with mandatory laws and regulations

At the moment, in Bolivia there is no specific law concerning to solar energy or any kind of other renewable energy⁸. Existing laws relatives to the present project activity are:

- Environmental law⁹, which specifically points out the regulations on environmental management, water pollution, hazardous substances, solid waste, environmental prevention and control.
- Specific law for electrical energy¹⁰.

None of those laws include specific requirements for such project activity. Details about requirements regarding EIA are presented in the paragraph D.1.

Therefore, all of the identified alternatives are complying with the existing regulations and laws.

Step 2. Investment analysis

The investment analysis is not opted for this project. A detailed barrier analysis has been provided for the project.

Step 3. Barrier analysis

Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity

Investment barrier:

According to a report by OXFAM¹¹, Bolivia is the poorest country in South America where 65 % of its population of about 10 million lives in poverty (under US\$2/day); while 40 % live in extreme poverty

⁸ <http://www.hidrocarburosbolivia.com/bolivia-mainmenu-117/semanarios-mainmenu-126/26520-una-ley-de-renovables-editorial-energy-press.html>

⁹ <http://www.bolivia-industry.com/sia/marcoreg/Ley/Ley.html>

¹⁰ http://sawi.ae.gob.bo/docfly/app/webroot/uploads/IMG-ML_LA-admin-2010-09-23-1604.pdf

 CDM – Executive Board

(less than US\$1/day). The annual household income in Altiplano is 5861 Bol. (around 700€/yr)¹² compared to the national annual average income in rural zones (8590 Bol).

One of the reasons for less income is also because most of the beneficiaries have agriculture-based income which is not a regular source. Reports have shown that in Bolivia, there are few sectors that boost the economy of the regions like the mining, gas and commercial agriculture, which provide fewer earnings¹. This clearly reflects the poverty of Altiplano region.

Therefore most of the beneficiaries cannot directly invest for a solar cookstove due to financial constraints. The construction cost of a solar cookstove (materials and workmanship) by Inti Illimani is about 71€ (in 2011), this cost even reaches 130€ when including indirect costs (staff, maintenance, transport, course fees, monitoring). A detailed financial plan is included in the Annex 12.

Finally, the cost of a solar cookstove would represent a huge part of the household income (around two months of income). So far there have been no initiatives from the government to provide financial aid to families willing to invest in a renewable technology. The present government in Bolivia has recognized the issues related to climate change and deforestation recently and would certainly take some more time before it implements renewable energy projects on a national level. Therefore the present option for beneficiaries has been to approach the “AII” team for solar cookers. This clearly shows an investment barrier faced by the beneficiaries of the project activity. Investment barrier is one of the reasons since the monthly income per family covers only their daily basic needs: feeding, housing, basic services, education of children, clothing and health¹³.

As explained on the paragraph B.2, carbon credits help to alleviate this barrier because it provides a long term funding source which partially covers the total cost of a SCS.

Total cost of one solar cooker:	130 Euros
Contribution of beneficiaries:	38 Euros
Carbon credits:	14 Euros
Other funds:	78 Euros

Technological barrier

Many technological barriers to the diffusion of solar cookstoves in Bolivia exist:

- Traditionally, no solar stoves are produced and disseminated in Bolivia by the government. The NGO Bolivia Inti brought the technology and therefore had to train the local staff to build the stoves. These local trained staff conducted various training programmes/workshops for the beneficiaries so as to build and maintain the stoves by themselves in the near future. This clearly states that there has been a good initiative from Bolivia Inti for sharing and transferring the technology to the local people. This also reflects that the project is trying to meet one of the

¹¹ Report by Oxfam: Climate change, poverty and adaptation in Bolivia : <http://www.oxfam.org/en/policy/bolivia-climate-change-poverty-and-adaptation>

¹² La diversificación de los ingresos rurales en Bolivia, 2007, Elizabeth Jimenez Zamora, University of Notre Dame <http://www.flacso.org.ec/docs/i29jimenez.pdf>

¹³ http://www.unicef.org/bolivia/spanish/bol_pub_gasto_educacion.pdf

CDM – Executive Board

sustainable development criteria of technology transfer. If this training were not provided to the local staff, it would not only have been expensive but also not very practical to send a trained staff all the way to Bolivia to implement the cookstoves in the project region.

- One of the other barriers is the availability of the raw material needed to construct the solar cookstoves. Depending on the locations (in case of very remote areas) where the training workshops are conducted the construction materials are sometimes not available locally and need therefore to be brought from the city (La Paz).
- In the region, infrastructures are in bad shape, mountainous roads to access villages are often badly maintained and distances between villages and La Paz are high. Thus imply important expenses to transport construction materials to villages.
- Households can be far from one to another. Organizing construction courses are difficult to organize and imply to plan a brief training on 4 days.
- As the technology is not known, no facilities for repairing the stoves exist. Therefore the AII team carries out an intensive training workshop for the beneficiaries about the construction and maintenance of the solar cookstoves followed up by a regular monitoring by the AII team just in case if more assistance is required by any of the beneficiary.

Barrier due to prevailing practice

The project is first of its kind to be funded through the voluntary carbon market in the project area. Households are used to cook with LPG or firewood stoves. Introduction of solar cookers implies them to change their cooking habits (cooking time, preparation of meals, etc.). The project beneficiaries have realised that they cannot be completely dependent on the present resources (firewood and LPG), which are not regularly available, and that they will have to adapt to this new cooking habits. This is a challenging and difficult process but the AII team has been actively motivating the local beneficiaries to use the solar cookstoves regularly depending on the weather conditions. They also need to know that the technology and how it works. Construction courses are based on a voluntary request from groups of 20 households. In that sense, communication must be done to make the project known by rural population.

Sub-step 3b: Show that identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity)

Considering the precedent identified barriers, the only alternative option still remaining possible is the continuation of the current situation (Alternative A1), where people continue using a mix of firewood and LPG.

- *A1: Continuation of the current situation*

The identified barriers don't avoid the continuation of the current situation as described:

- Investment barrier doesn't exist, as households already own traditional stoves to cook with wood or LPG.
- Technological barrier is low as traditional stoves can be easily made and the Bolivian government promotes the use of LPG.

CDM – Executive Board

- Barrier due to prevailing practice doesn't exist, as households are used to cook with wood or/and LPG. No communication is needed to promote traditional stoves and construction of stoves doesn't require to form group of households.

- *A2: Project undertaken without VER Credits*

Carbon funding represents around 35% of the total budget of the project. Without this part of funding, Inti Illimani could not carry out as many workshops as planned in the project. As a consequence on the scale of the project, the cost of a solar cookstove would be higher.

- *A3: Solar cookstove project implemented by the government*

The Bolivian government has no policy of diffusion of solar cook-stove technology, and it is not likely that such a policy will be implemented during the length of the project. There is already a lack of political stability in Bolivia and therefore are very less chances of getting any subsidies from the government to carry out the project without the VER revenues.

Comparatively, the Bolivian government has the willing to diffuse LPG stoves. However, the supply of this fuel cannot be entirely provided. Indeed, rural households face difficulties to find regularly LPG.

- *A4: Solar cookstove sold through the market*

Marketed solar cookstove will face the investment barrier. As explained before, the cost of a solar cookstove, equivalent to 2 months of a rural household income, will be too high to represent an economic opportunity for private companies.

- *A5: Switch to LPG and/or other fuels.*

Most of the urban population already uses LPG. In the rural and remote areas, the use of LPG is also quite common, but cannot replace the use of firewood because of the lack of supply and availability. Indeed, if a lot of households use LPG in the rural areas, they continue to use firewood as a main fuel, because it is free and relatively more available. In average, the cost of LPG represents a significant part (4%) of the income of the households, and many families cannot afford it. Also, the baseline KS demonstrated that in the last 5 years, there has been only very little switch of cooking fuels in the targeted population. Therefore, a switch to LPG is unlikely to happen during the duration of the project. Besides, LPG prices continue to increase.

Step 4: Common practice analysis

Sub-step 4a: Analyze other activities similar to the proposed projects activity

There are no national solar cookstoves programmes by the present government in Bolivia. Recently the government has taken a note of the deforestation and other climate change issues on its development agenda. And with the ongoing political issues over the energy sector and therefore it is unlikely that any large-scale solar cookstoves programmes would be implemented in the near future. Therefore, for the moment, there are various NGO both local and national including AII, which have been implementing projects on solar cookstoves. In our knowledge through local contacts, two similar activities were found in Bolivia, from the CEDESOL Foundation, which works mainly in disseminating improved cookstoves in Cochabamba region, including solar cookstoves and SENTEC (Servicio de Enseñanza Técnica y

CDM – Executive Board

Capacitacion Integral). According to the website of CEDESOL¹⁴, this organization implement cookstoves thanks to subsidies and financial contribution from beneficiaries. There are no solar cookstoves selling agencies in the project region as per the knowledge of the local team of AII. Therefore it shows that this is not a common practice of disseminating solar cookstoves.

Sub-step 4b: Discuss any similar Options that are occurring:

Sub-Step 4a showed that only few similar activities are occurring in Bolivia. Among those few experiences, none was identified as a wide commercial scale activity. Most of solar cookstoves (or by extension efficient cookstoves) are disseminated mainly thanks to subsidies.

B.6. Emission reductions:

B.6.1. Explanation of methodological choices:

B.6.1.1. Baseline Emissions

Baseline emissions are calculated according to the formulas detailed in paragraph B.4, Step 2.4: Calculate baseline.

B.6.1.2. Project Emissions

The project emissions depend on the aging and the non usage of the SCS. The project emissions per stove are calculated for each cluster applying the following equations;

(1)

$$PE_y = X_{nr,pj,y} * B_{pj,y} * EF_{pj,bio,CO_2} + \sum(A_{Fpj,i,y} * EF_{af,CO_2,i})$$

+ $\sum(\text{Non-CO}_2 \text{ emissions during cooking}) \rightarrow \text{equation 2}$
+ $\sum(\text{GHG emissions during production of the fuels}) \rightarrow \text{equation 3}$

Where (noting that parameters common to baseline equations are not repeated):

Parameter	Description	Unit	Source
X _{nr,pj,m}	Non-renewable fraction of the woody biomass harvested in the project collection area in year y in the project scenario	%	Monitoring
PE _m	Project emissions in month m specific to cluster and Unit chosen	tonnes CO ₂ e / month	
B _{pj,m}	Mass of woody biomass consumed during cooking in the project each	tonnes/month	Monitoring

¹⁴ <http://cedesol.org>

CDM – Executive Board

	month.		
AF _{pj,i,m}	Mass of alternative fuel i in the project in month m in accordance with trends projected throughout the project period	tonnes	Monitoring

(2)

Non-CO₂ emissions during cooking = $\sum (B_{pj,y} * EF_{pj, \text{bio, non-co}_2, i}) + \sum (AF_{pj,i,y} * EF_{af,i, \text{non-co}_2, \text{gas } i})$

(3)

GHG emissions during production of the fuels = $X_{nr,b} . B_{pj,y} * EF_{\text{bio, prod, co}_2}$
 $+ \sum (AF_{pj,i,y} * EF_{af, \text{prod, co}_2, i})$

Taking into account aging and usage factors:

$$PE_{i,m} = N_{i,m} * PE_m * Age$$

Where:

$N_{i,m}$ = the number of Units in cluster I (100% working)

$N_{i,m}$ = sold stoves_x * Usage_{x,z}

B.6.1.3. Leakage

The baseline KS field study investigated the sources of leakage listed in the methodology, none of these leakages were found to be significant. Indeed:

- Fuel savings cause increasing consumption of fuels with GHG emission characteristics.* The shift of pressure on the natural resources was found to be insignificant in scale. As the project does not affect firewood or LPG availability or price, no rebound effect was found.
- Increasing use of a high emission fuel either for cooking or for other purposes outside the project boundary.* As mentioned previously, the current effect of the project on firewood and LPG availability or price is insignificant. Therefore, there is no risk of increase of these fuels outside the project boundaries.
- Substitution of a cooking technology with relatively high emissions by a cooking technology with relatively lower emissions:* The project only promotes the use of solar energy which is clean and renewable.
- Compensation for loss of the space heating.* The KS shows that most of the households did not use any kind of heating device.
- Re-utilisation of the traditional firewood outside the boundary.* Traditional stoves were made of brick and mud and are not transportable.
- Significant emissions from transportation or construction involved in the project activity.* The project involves the transportation of the technicians, instructors and material to each community where a construction course is conducted. Also, during the monitoring, the instructor must travel

CDM – Executive Board

6 times from La Paz to the communities. Transportation could therefore be an important source of leakage. However, GHG emissions from transportation are insignificant compared to the project ERs.

Still the leakage d), and f) will be paid careful attention during the monitoring KS.

B.6.1.4. Emission reductions

The overall reductions of GHG induced by the project are calculated as follows:

$$ER_y = \sum BE_{i,y} - \sum PE_{i,y} - \sum LE_{i,y}$$

Where:

Parameter	Description	Unit
ER _y	Emission reduction in total project population in month m	tCO ₂ e/m
BE _{i,m}	Baseline emissions of cluster i in month m	tCO ₂ e/m
PE _{i,m}	Project emissions of cluster i in month m, depending on the year of installation z	tCO ₂ e/m
LE _{i,m}	Leakage of cluster i in month m	tCO ₂ e/m

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

Data / Parameter:	B.1
Data unit:	Beneficiaries
Description:	Number of beneficiaries by cluster and community
Source of data used:	Project database
Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied :	Measured every month according to the planning of the workshops
Any comment:	

Data / Parameter:	B.2
Data unit:	Kg/month/household
Description:	Baseline LPG consumption by cluster

CDM – Executive Board

Source of data used:	Baseline KTs
Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied :	Estimated from the KT results, led at the beginning of the project on a representative sample, as defined by the methodology.
Any comment:	

Data / Parameter:	B.3
Data unit:	Kg/month/household
Description:	Baseline firewood consumption by cluster
Source of data used:	Baseline KTs
Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied :	Estimated from the KT results, led at the beginning of the project on a representative sample, as defined by the methodology.
Any comment:	

Data / Parameter:	B.4
Data unit:	%
Description:	Non-renewable fraction of biomass
Source of data used:	NRB study
Value applied:	
Justification of the choice of data or description of measurement methods and procedures actually applied :	Study led on project area based on figured extracted from reference documents and/or field surveys
Any comment:	

B.6.3 Ex-ante calculation of emission reductions:
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1. Description of the Baseline Scenario

Calculated Emissions from the baseline scenario are presented in the following table

CDM – Executive Board

Year		Baseline Emissions LPG t CO ₂ e	Baseline Emissions LPG+FW t CO ₂ e	Total yearly
1	2009	168	868	1 036
2	2010	202	1 269	1 471
3	2011	325	1 747	2 071
4	2012	425	2 319	2 744
5	2013	528	2 941	3 468
6	2014	638	3 574	4 212
7	2015	750	4 257	5 007
8	2016	860	4 884	5 744
9	2017	853	5 368	6 222
10	2018	786	5 351	6 137

2. Description of the Project Scenario

The project scenario is the use of the solar cook-stoves by the beneficiaries, allowing significant fuel savings. The same baseline survey and the Kitchen Tests gathered information about this project situation:

Year		Project Emissions LPG t CO ₂ e	Project Emissions LPG+FW t CO ₂ e	Total yearly
1	2009	92	123	215
2	2010	111	179	290
3	2011	178	247	425
4	2012	233	327	561
5	2013	290	415	705
6	2014	350	505	855
7	2015	412	601	1 013
8	2016	472	690	1 162
9	2017	469	758	1 227
10	2018	432	756	1 187

3. Emission Reductions

The implementation of the project allows the beneficiaries to make significant savings of the traditional fuels, depending on the cluster of the beneficiary:

CDM – Executive Board

- Cluster 1: Savings of 4.98 kg of LPG/month/household,
- Cluster 2: Savings of 0 kg of LPG and 198 kg of firewood per month per household

These fuel savings lead to emission reductions:

Table 3: Estimated Emission Reductions

Year	ER (tonnes CO ₂ eq)
2009	821
2010	1 181
2011	1 646
2012	2 183
2013	2 763
2014	3 357
2015	3 994
2016	4 582
2017	4 995
2018	4 950

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

The emission reductions are calculated monthly, and aggregated monthly. From January 2007 to December 2009, Inti Illimani had installed 400 cook-stoves per year, thus a mean of 33 solar cook-stoves per month. The monthly detail of emission reductions can be seen in a separate Excel file.

Table 4: Synthesis of estimated emissions

Year	Estimation of project activity emissions (tonnes CO ₂ e)	Estimation of baseline emissions (tonnes CO ₂ e)	Estimation of leakage (tonnes CO ₂ e)	Estimation of emissions reductions (tonnes CO ₂ e)
2009	215	1 036		821
2010	290	1 471		1 181
2011	425	2 071		1 646
2012	561	2 744		2 183
2013	705	3 468		2 763
2014	855	4 212		3 357
2015	1 013	5 007		3 994
2016	1 162	5 744		4 582
2017	1 227	6 222		4 995
2018	1 187	6 137		4 950
Total				30 474

CDM – Executive Board

B.7 Application of a monitoring methodology and description of the monitoring plan:
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B.7.1 Data and parameters monitored:

Data / Parameter:	P.1
Data unit:	Solar cookstoves (SCS)
Description:	Number of beneficiaries by cluster and community
Source of data to be used:	Project database
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Cluster LPG: 2451 SCS Cluster LPG + Wood: 2166 SCS
Description of measurement methods and procedures to be applied:	Measured every month according to the planning of the workshops
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and GoodPlanet
Any comment:	

Data / Parameter:	P.2
Data unit:	Kg/month/household
Description:	Project LPG consumption by cluster
Source of data to be used:	Kitchen Tests
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Cluster LPG: 7.17kg/month/household Cluster LPG + Wood: 11.7 kg/month/household
Description of measurement methods and procedures to be applied:	Study led biennially on a representative sample of beneficiaries
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and GoodPlanet
Any comment:	Given values are used for calculation. Final values will be periodically monitored.

CDM – Executive Board

Data / Parameter:	P.3
Data unit:	Kg/month/household
Description:	Project firewood consumption by cluster
Source of data to be used:	Kitchen Tests
Value of data applied for the purpose of calculating expected emission reductions in section B.5	Cluster LPG + Wood: 23.4 kg/month/household
Description of measurement methods and procedures to be applied:	Study led biennially on a representative sample of beneficiaries
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and GoodPlanet
Any comment:	Given value is used for calculation. Final value will be periodically monitored.

Data / Parameter:	P.4 - X_{NRB}
Data unit:	%
Description:	Non-renewable fraction of biomass
Source of data to be used:	NRB study
Value of data applied for the purpose of calculating expected emission reductions in section B.5	61%
Description of measurement methods and procedures to be applied:	Study led on project area based on figured extracted from reference documents and/or field surveys. The NRB fraction may be updated whether indeed other project activities are initiated that would possibly have a significant impact on the NRB fraction.
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and GoodPlanet
Any comment:	

Data / Parameter:	P.5 - Usage in year y
Data unit:	%
Description:	Percentage of stoves of age x remaining in use in year y
Source of data to be used:	Survey

CDM – Executive Board

Value of data applied for the purpose of calculating expected emission reductions in section B.5	1 year after construction : 90% 2 and 3 years after construction : 85% 4 and 5 years after construction : 80% 6 and 7 years after construction : 75% 8 and 9 years after construction : 70% 10 years after construction : 65%
Description of measurement methods and procedures to be applied:	Survey led once a year on a representative sample of beneficiaries
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and BISS
Any comment:	Given values are used for calculation. Final values will be periodically monitored.

Data / Parameter:	P.6 – Age
Data unit:	%
Description:	Efficiency compared with a new Solar Cooker
Source of data to be used:	Monitoring Survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	1 year after construction : 100% 2 and 3 years after construction : 100% 4 and 5 years after construction : 100% 6 and 7 years after construction : 100% 8 and 9 years after construction : 100% 10 years after construction : 100%
Description of measurement methods and procedures to be applied:	Survey led once every two years on a representative sample of Solar Cookers well maintained.
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and GoodPlanet
Any comment:	All tests already done show that older solar cookers are more efficient than new ones. But in order to simplify calculations and to keep a conservative approach, we consider that efficiency of old solar cookers is the same that new ones.

Data / Parameter:	P.7
Data unit:	Bs/hh/month
Description:	Money savings
Source of data to be used:	Monitoring survey

CDM – Executive Board

Value of data applied for the purpose of calculating expected emission reductions in section B.5	11.25 Bs/hh/month.
Description of measurement methods and procedures to be applied:	Calculated from KS data and from price of LPG.
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and BISS
Any comment:	Money savings come from fuel savings. Only money savings coming from LPG savings will be taken into account. Considering an average save in fuel of 50%, Average LPG consumption in the baseline: 1 bottle (10 kg), price of LPG: 22.5 Bs/bottle.

Data / Parameter:	P.8
Data unit:	Minutes/household/day
Description:	Time savings
Source of data to be used:	Monitoring survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	45 min/hh/day
Description of measurement methods and procedures to be applied:	Average of beneficiaries quantitative estimations given in the KS.
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and BISS
Any comment:	

Data / Parameter:	P.9
Data unit:	%
Description:	Share of the solar energy in the total energy mix
Source of data to be used:	Monitoring survey

CDM – Executive Board

Value of data applied for the purpose of calculating expected emission reductions in section B.5	41% for LPG cluster 60% for LPG + FW cluster
Description of measurement methods and procedures to be applied:	Calculated from fuel consumption reduction (KT) and its energy equivalence.
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and GoodPlanet
Any comment:	

Data / Parameter:	P.10
Data unit:	Km/year
Description:	Total annual distance from La Paz to communities
Source of data to be used:	Monitoring survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	400 km way and return
Description of measurement methods and procedures to be applied:	Calculated from distance per course included in the reports from each course.
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and BISS
Any comment:	

Data / Parameter:	P.11
Data unit:	%
Description:	Fraction of the distance using common transport (bus)
Source of data to be used:	Monitoring survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	80%

CDM – Executive Board

Description of measurement methods and procedures to be applied:	Calculated from distance per course and kind of transport used included in the reports from each course.
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and BISS
Any comment:	

Data / Parameter:	P.12
Data unit:	%
Description:	Fraction of the courses where measures have been taken to ensure that not damage to soil is being caused by the paint
Source of data to be used:	Monitoring survey
Value of data applied for the purpose of calculating expected emission reductions in section B.5	100%
Description of measurement methods and procedures to be applied:	Final evaluation course questionnaire made by beneficiaries
QA/QC procedures to be applied:	Parameter double-checked by Inti Illimani and BISS
Any comment:	

B.7.2 Description of the monitoring plan:

The project database constitutes the heart of the monitoring of the emission reductions. This database will record all the courses conducted by Inti Illimani and their characteristics (date of the course, number of participants), as well as all the information on the beneficiaries collected during the monitoring KS.

The monitoring KS tasks will be done as followed:

- During the construction course, an instructor will administer the first part of the KS questionnaire: “Before the acquisition of the solar cookstove” (baseline scenario).
- During the end of appropriation monitoring (at the end of the four month monitoring), an instructor will administer the second part of the KS questionnaire “After the acquisition of the solar cookstove” (project scenario).

A member of Inti Illimani specially in charge of the monitoring of the emission reductions will encode these questionnaires.

This same person will also be in charge of the following main tasks:

CDM – Executive Board

- Lead the different Kitchen Test Studies.
- Assess biennially the drop-off rate of the solar cookstove.

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 monitoring plan was designed by GoodPlanet Foundation – Programme Action Carbone. It will be implemented by Inti Illimani (for contact information, see Annex 1). The baseline and monitoring methodology application was completed in November 2010 by GoodPlanet and Rocio Maldonado, in charge of carbon aspects of the Inti Illimani project.

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:

The implementation of the project started on the 01/01/2007. As per the Gold Standard rules and regulations, the project starts claiming the credits from the previous two years from the registration date.

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

Inti Illimani uses good quality materials (mainly wood) for the construction of its solar cook-stove. The cook-stoves have a lifespan of more than 10 years (see Annex 9 for more details). Depending on the maintenance of the stove, its lifetime can go up to 15 or 20 years. The only fragile part of the cook-stove is the double glass, which can nevertheless easily be replaced by the participants, as they receive sufficient knowledge about the construction and reparation of the stoves during the workshops.

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

The project activity will use a fixed crediting period.

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.

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C.2.2. Fixed crediting period:

C.2.2.1. Starting date:

30/06/2011 (This date will be up dated according to registration date).

C.2.2.2. Length:

10 years

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SECTION D. Environmental impacts

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

No Environmental Impact Assessment (EIA) has been performed for the proposed project activity, for the following reasons:

1. The host country legislation does not require an EIA to be performed for such a project. The reference text of Bolivian laws is in Annex 5.
2. The Sustainable Indicator Matrix, as shown in the Gold Standard Passport, has a total score of +8 and does not contain any negative scores. According to the ‘Gold Standard Voluntary Emission Reductions (VERs) Manual for Project Developers’ indicators scoring -1 must be subject to the EIA pre-screen checklist to determine the necessity of an EIA. Please refer to A.2 for the Sustainable Indicator Matrix, the scores and the explanations of the scores.
3. The outcomes of the Initial and Main Stakeholder Consultation did not raise any comments on significant impacts of the proposed project on the environment. In order to ensure adequate consideration of a full range of issues, stakeholders have been asked to address the impacts and their significance of, amongst others, the issues as raised in the Social Impacts Checklist of the ‘Gold Standard Voluntary Emission Reductions (VERs) Manual for Project Developers’.

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:

Not Applicable

SECTION E. Stakeholders' comments

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

The stakeholders have been invited to a meeting, which took place on Friday the 27th of March 2009, in La Paz, Bolivia.

During this stakeholder consultation meeting, first a presentation of the association and of the project was done. Afterwards, the carbon vigilance was explained. Finally, the stakeholders were asked to participate to a blind sustainable development exercise and make all their comments.

After this meeting, a report was redacted, as required by the Gold Standard requirements, in which the comments are compiled.

E.2. Summary of the comments received:

The following comments have been received from the stakeholders during the meeting:

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Comment 1:

Professor Herminio Cahuaya, who collaborated with Inti Illimani for the CO₂ measurement process:

“Thanks to the solar cook stove, they [the mothers and the families] earn about 85% of the amount they used to pay per month [for fuel purchase]. On the other hand, the solar stove is useful for everybody. We have cooked with the help of the sun energy, otherwise everything we could have cooked with a traditional oven.

What interested most us is the following: a lot of people from the Altiplano, being a rural area, are not really used to deal with hygiene and health.”

Comment 2:

Madam Jacqueline Quintela, in charge of the association Inti Watana, who solicited a course for young people of her association:

“They all thank you, since in a way you changed their lives. At the beginning they were not very happy, they thought the solar cook stove structure was quite complicated. But now, having used it for a year, you can see the difference. They can bring their food easily, the food they cooked the day before. This is one of the advantages. An other advantage is health, because a lot of them who complained about the vesicle, stomach ache, stopped eating fat. And now, those young people are promoting the solar cook stoves in various regions. Soon Inti Illimani must receive a solicitude for new construction courses.”

Comment 3:

Madam Jacqueline Quintela, in charge of the association Inti Watana, who solicited a course for young people of her association:

“In the case of nutritional handling, what is most attractive, is practising the solar cook stove. During the construction, you live the elaboration, the cooking of food. It is the didactic instrument the most valuable. At the same time, you have other instruments (explicative panels, books...), but the more impactive part of the construction courses is that you eat food cooked in the solar cook-stove and the last day you manipulate the cook-stove and cook yourself, so that you can witness it works.”

Question 1:

Madam Luce Catalina Fernand: “About the paint used, what paint is it? Would it be possible to change or abandon it?”

Answer 1:

Rene De La Rocha: “It is monochrome paint. We are investigating to change it.

Question 2:

Madam Luce Catalina Fernand:

“I know that the procedure for CO₂ compensation can only be done with ODL¹⁵ in Bolivia. But I can see that you did it directly by yourself, with Gold Standard, without the bolivian government.”

Answer 2:

René De La Rocha:

“Bolivia Inti Sud Soleil is a French association. So, Bolivia Inti, as a French association started working without any certification, building solar cook stoves by the mean of operators. We, the team of Inti Illimani, are operators of Bolivia Inti Sud Soleil.”

¹⁵ ODL: *Oficina de Desarrollo Limpio: Clean Development Office*

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

Assessment of the comments:

Stakeholder Comment	Assessment	Response to comment
Comment 1	Positive	/
Comment 2	Positive	/
Comment 3	Positive	/
Question 1	Negative	<p>The team already thought about this point, but they had not taken any measure.</p> <p>The Inti Illimani team of Argentina does not use paint any more, they use lino oil. This is more environmental friendly.</p> <p>The team of La Paz is thinking about changing the paint by the lino oil. It first must be tested if it resists to humidity.</p>
Question 2	Neutral	/

Annex 1**CONTACT INFORMATION ON PARTICIPANTS IN THE PROJECT ACTIVITY**

Organization:	GoodPlanet Foundation
Street/P.O.Box:	1, Carrefour de Longchamp
Building:	
City:	Paris
State/Region:	
Postfix/ZIP:	75116
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FAX:	+33 (0)1 48 42 08 00
E-Mail:	matthieu@actioncarbone.org
URL:	http://www.goodplanet.org - http://www.actioncarbone.org
Represented by:	Matthieu Tiberghien
Title:	Program officer
Salutation:	M.
Last Name:	Tiberghien
Middle Name:	
First Name:	Matthieu
Department:	
Mobile:	
Direct FAX:	
Direct tel:	+33 (0)1 48 42 76 01
Personal E-Mail:	matthieu@actioncarbone.org

Organization:	Bolivia Inti Sud Soleil
Street/P.O.Box:	18, rue Gaëtan Rondeau
Building:	
City:	Nantes
State/Region:	
Postfix/ZIP:	44200
Country:	France
Telephone:	+33 (0)2 51 86 04 04
FAX:	+33 (0)2 40 72 05 30
E-Mail:	soleil@boliviainti.org
URL:	http://www.boliviainti-sudsoleil.org
Represented by:	Vincent Dulong
Title:	Director of Bolivia Inti Sud Soleil
Salutation:	M.
Last Name:	Dulong
Middle Name:	
First Name:	Vincent
Department:	
Mobile:	
Direct FAX:	

CDM – Executive Board

Direct tel:
Personal E-Mail: vincent.dulong@sud-soleil.org

Organization: Inti Illimani
Street/P.O.Box: Calle Fernando Guachalla N° 790
Building:
City: La Paz
State/Region:
Postfix/ZIP:
Country: Bolivia
Telephone:
FAX:
E-Mail: asointillimani@gmail.com
URL:
Represented by: Magda Catorceno
Title: Project coordinator
Salutation:
Last Name: Catorceno
Middle Name:
First Name: Magda
Department:
Mobile:
Direct FAX:
Direct tel:
Personal E-Mail: magdacatorcenoa@gmail.com

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Annex 2

INFORMATION REGARDING PUBLIC FUNDING

Annex 3

BASELINE INFORMATION

Annex 4

MONITORING INFORMATION

Annex 5**ENVIRONMENTAL IMPACT ASSESSMENT**

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According to the Bolivian laws, such a project activity doesn't need to carry out an Environmental Impact Assessment. Indeed, the solar cook stove project is a social service, related to nutrition and health. Therefore, solar cook stove project belongs to Category 4 and does not need an EIA.

Here are the reference regulations, extracted from the Environmental Law « Ley 1333 de Medio Ambiente », from the 27th of April 1992:

Spanish

**CAPITULO IV
DE LA EVALUACION DE IMPACTOS
AMBIENTALES**

ARTÍCULO 25.- Todas las obras, actividades públicas o privadas, con carácter previo a su fase de inversión, deben contar obligatoriamente con la identificación de la categoría de evaluación de impacto ambiental que deberá ser realizada de acuerdo a los siguientes niveles:

1. Requiere de EIA analítica integral.
2. Requiere de EIA analítica específica
3. No requiere de EIA analítica específica pero puede ser aconsejable su revisión conceptual.
4. No requiere de EIA.

English

**CHAPTER IV
ENVIRONMENTAL IMPACT ASSESSMENT**

ARTICLE 25.- All the works, public or private activities, previously to their investing step, must compulsory identify the category of EIA that should be carried out, according to the following levels:

1. Must carry out an integral analytical EIA.
2. Must carry out a specific analytical EIA.
3. Do not need specific analytical EIA, but it could be advised a conceptual review.
4. Do not need EIA.

Environmental prevention and control regulation, « Reglamento de Prevención y Control Ambiental », from the 17th of January 2006:

•

**CAPITULO II
DE LA IDENTIFICACION DE LAS CATEGORIAS DE
EVALUACION
DE IMPACTO AMBIENTAL**

ARTICULO 15°.- Para efectos de este Reglamento, el proceso de identificación de la categoría del Estudio de Evaluación de Impacto Ambiental debe ser realizado de acuerdo con los niveles señalados en el Art. 25 de la LEY:

**CHAPTER II
ENVIRONMENTAL IMPACT ASSESSMENT
CATEGORIES IDENTIFICATION**

ARTICLE 15°.- For effects of this Regulation, the identification process of the category of the Environmental Impact Assessment must be realized in agreement with the levels indicated in the Art. 25 of the LAW:

CATEGORIA 1: ESTUDIO DE EVALUACION DE IMPACTO AMBIENTAL ANALITICO INTEGRAL, nivel que por el grado de incidencia de efectos en el ecosistema, deberá incluir en sus estudios el análisis detallado y la evaluación de todos los factores del sistema ambiental: físico, biológico, socioeconómico, cultural, jurídico-institucional, para cada uno de sus respectivos componentes ambientales.

CATEGORIA 2: ESTUDIO DE EVALUACION DE IMPACTO AMBIENTAL ANALITICO ESPECIFICO, nivel que por el grado de incidencia de efectos en algunos de los atributos del ecosistema considera en sus estudios el análisis detallado y la evaluación de uno o más de los factores del sistema ambiental: físico, biológico, socio-económico-cultural, jurídico - institucional; así como el análisis general del resto de los factores del sistema.

CATEGORIA 3: Aquellos que requieran solamente del planteamiento de Medidas de Mitigación y del Plan de Aplicación y Seguimiento Ambiental. Nivel que por las características ya estudiadas y conocidas de proyectos, obras o actividades, permita definir acciones precisas para evitar o mitigar efectos adversos.

CATEGORIA 4: NO REQUIEREN DE EEIA, aquellos proyectos, obras o actividades que no están considerados dentro de las tres categorías anteriores.

ARTICULO 16° Los criterios para establecer la categoría de EEIA son los siguientes:

- magnitud de la actividad según la superficie afectada, tamaño de la obra, volumen de producción;
- modificaciones importantes de las características del ambiente, tanto en extensión, como en intensidad, especialmente si afectan su capacidad de recuperación, o reversibilidad después del impacto;
- localización próxima a: áreas protegidas, a recursos naturales que estén catalogados como patrimonio ambiental, a áreas forestales o de influencia, o poblaciones humanas susceptibles de ser

CATEGORY 1: INTEGRAL ANALYTIC ENVIRONMENTAL IMPACT ASSESSMENT, level that for the degree of incident of effects in the ecosystem, will have to include in the studies the detailed analysis and the evaluation of all the factors of the environmental system: physical, biological, socioeconomic, cultural, juridical - institutional, for each of its respective environmental components.

CATEGORY 2: SPECIFIC ANALYTIC ENVIRONMENTAL IMPACT ASSESSMENT, level that for the degree of incident of effects in some of the attributes of the ecosystem, considers in the studies the detailed analysis and the evaluation of one or more of the factors of the environmental system: physical, biological, socio-economic-cultural, juridical - institutional; as well as the general analysis of the rest of the factors of the system..

CATEGORY 3: Those that only need the approach of Mitigation Measures and the Application Plan and Environmental Follow-up. Level that for the characteristics already studied and known about projects, works or activities, allows defining precise actions to avoid or to mitigate adverse effects.

CATEGORY 4: DO NOT NEED EIA, those projects, works or activities that are not considered in the previous categories.

ARTICLE 16° The criteria to establish EIA's category are the following ones:

- magnitude of the activity according to the affected surface, size of the work, volume of production;
- important modifications of the characteristics of the environment, as much in extension, as in intensity, specially if they affect its recovery capacity, or reversibility after the impact;
- location near to: protected areas, natural resources that are registered as environmental patrimony, forest areas or of influence, or human populations capable of being affected in a negative way;
- utilization of natural resources;

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- afectadas de manera negativa;
- utilización de recursos naturales;
- calidad y cantidad de afluentes, emisiones y residuos que genere; así como, los límites máximos permisibles;
- riesgo para la salud de la población humana;
- reubicación permanente o transitoria, u otras alteraciones de poblaciones humanas;
- introducción de cambios en las condiciones sociales, culturales y económicas;
- existencia en el ambiente de atributos que posean valor de especial consideración y que hagan deseable evitar su modificación, tales como valores históricos y culturales.

Para identificar los orígenes de los impactos, se requiere:

a) revisar componentes primarios del proyecto:

- localización
- construcción
- operación
- mantenimiento
- terminación
- abandono

b) determinar los cambios probables en el ambiente:

- usos del suelo
- utilización de recursos
- emisión de contaminantes
- disposición de residuos.

ARTICULO 17º.- En función a lo dispuesto por los artículos precedentes y de los Arts. 25 y 27 de la LEY, se utilizará el Procedimiento Computarizado de Evaluación de Impactos Ambientales (PCEIA) que representa un componente del Sistema Nacional de Evaluación de Impacto Ambiental para categorizar el nivel de EEIA requerido para los proyectos, obras o actividades, como sigue:

CATEGORIA 1: Aquellos que requieren de un Estudio de Evaluación de Impacto Ambiental (EEIA) ANALÍTICO INTEGRAL.

Estarán sometidos a este nivel, todos los proyectos, obras o actividades, públicos o privados, que así se determine mediante la aplicación de la metodología de Identificación de Impactos Ambientales (IIA) de la Ficha Ambiental (Anexo 1), a través del PCEIA.

- quality and quantity of tributaries, emission and residues that it generates; as well as the maximum permissible limits;
- risk for the health of the human population;
- permanent or transitory relocation, or other alterations of human populations;
- introduction of changes in the social, cultural and economic conditions;
- existence in the environment of attributes that possess value of special consideration and that make desirable to avoid their modification, such as historical and cultural values.

To identify the origins of the impacts, it is needed:

a) To check primary components of the project:

- location
- construction
- operation
- maintenance
- completion
- abandon

b) To determine the probable changes in the environment:

- uses of the soil
- utilization of resources
- emission of pollutants
- waste disposal.

ARTICLE 17º.- In function to arranged by the previous articles and of the Arts. 25 and 27 of the LAW, it will be used the Environmental Impacts Assessment Computerized Procedure (EIACP) that represents a component of the Environmental Impacts Assessment National System to categorize EIA's level needed for the projects, works or activities, as it continues:

CATEGORY 1: Those that need a Integral Analytical Environmental Impact Assessment. Will be submitted to this level, all the projects, works or activities, public or privates, which are determined like that while applying the Environmental Impacts Identification Methodology of the Environmental Card (Annex 1), across the EIACP.

CATEGORY 2: Those that need a Specific Analytical

CATEGORIA 2: Aquellos que requieren un Estudio de Evaluación de Impacto Ambiental (EEIA) ANALITICO ESPECIFICO.

Estarán sometidos a un EEIA ANALITICO ESPECIFICO todos los proyectos, obras o actividades, públicos o privados que de acuerdo con la metodología de IIA de la FA, causen efectos significativos al ambiente en uno o algunos de los factores ambientales.

CATEGORIA 3: Aquellos que requieran solamente del planteamiento de Medidas de Mitigación y la formulación del Plan de Aplicación y Seguimiento Ambiental.

Requerirán de lo señalado los proyectos, obras o actividades, públicos o privados, que por aplicación de la metodología de IIA de la FA, se determine que sus impactos no sean considerados significativos y requieran de medidas de mitigación precisas, conocidas y fáciles de implementar.

CATEGORIA 4: Aquellos que por aplicación de la metodología de IIA de la FA se determine que no requieren de EEIA ni de planteamiento de Medidas de Mitigación ni de la formulación del Plan de Aplicación y Seguimiento Ambiental. Pertenecen a esta categoría:

- Obras:

- Construcción y demolición de bienes inmuebles unitarios o unifamiliares en áreas urbanas autorizadas.
- Conservación, rehabilitación, reparación, mantenimiento o modificaciones de bienes inmuebles unitarios o unifamiliares en áreas urbanas autorizadas.
- Pozos someros y aislados para abastecimiento de agua en el medio rural.

- Actividades:

- Servicios financieros: bancos, financieras y similares; empresas de seguros y reaseguros.
- Servicios en general (correos, telégrafo, servicios telefónicos).
- Comercio minorista en forma individual.
- Educativas.
- De beneficencia.
- Religiosas.

Environmental Impact Assessment. All the projects, works or activities, public or private, will be submitted to a Specific Analytical EIA, that in agreement with Environmental Impacts Identification Methodology of the Environmental Card, cause significant effects to the environment in one or some of the environmental factors.

CATEGORY 3: Those that only need the approach of Mitigation Measures and the formulation of the Application Plan and Environmental Follow-up. The projects, works or activities, that for the application of the Environmental Impacts Identification Methodology of the Environmental Card, are determined to have impacts that are not considered significant and need mitigation measures precise, known and easy to implement, will require this approach.

CATEGORY 4: Those that for application of the Environmental Impacts Identification Methodology of the Environmental Card are approach of Mitigation Measures nor of the formulation of the Application Plan and Environmental Follow-up. They belong to this category:

- Works:

- Construction and demolition of unitary or one-family real estate in urban authorized areas.
- Conservation, rehabilitation, repair, maintenance or modifications of unitary or one-family real estate in urban authorized areas.
- Shallow and isolated wells for water supply in the rural area.

- Activities:

- Financial Services: banks, financial and similar; insurance companies and reinsurances.
- Services in general (post office, telegraph, telephonic services).
- Retail trade in individual form.
- Educational.
- Of welfare.
- Religious.
- Of social, cultural and sports service.
- Handcrafted in the urban area, when they possess an authorization of the local entity of

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- De servicio social, cultural y deportivo.
 - Artesanales en el medio urbano, cuando cuentan con autorización de la entidad local de saneamiento básico.
 - Salud.
 - Nutrición.
 - Desarrollo institucional.
 - Asistencia técnica.
- basic reparation.
 - Health.
 - Nutrition.
 - Institutional development.
 - Technical assistance.

Los proyectos, obras o actividades, públicos o privados, no considerados en el listado, deben aplicar a la metodología de IIA de la FA (PCEIA) para identificar la respectiva categoría de EEIA.

The projects, works or activities, public or private, not considered in the list, must apply to Environmental Impacts Identification Methodology of the Environmental Card (EIACP) to identify EIA's respective category.

Annex 6**KITCHEN SURVEY QUESTIONNAIRE**

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Fecha: Encuestadores:	Encuesta de familias Parte sin cocina solar		
Numero: <i>(de la persona en el grupo)</i>	Pueblo :	Provincia :	Grupo :

Nombre y Apellido:	Empleo:
	Dirección:
Sexo: <input type="checkbox"/> M <input type="checkbox"/> F	Ingreso <i>(de toda la familia)</i> : Cada : <input type="checkbox"/> Año <input type="checkbox"/> Mes <input type="checkbox"/> Semana <input type="checkbox"/> Día
	¿Son agricultores y no compran su comida? <input type="checkbox"/> Si <input type="checkbox"/> No

Las 4 páginas siguientes van a tratar la situación antes de las cocinas solares.

TIPO DE COCINAS

Combustible	Material	¿Cuántas hornillas?	Lugar		
			Afuera de la casa	En una cocina	Otro habitación (precisar)
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

USO DE COMBUSTIBLE

Tachar el principal, segundo (si hay) y otros combustibles (si hay) para cada utilización.

- El Principal se usa casi todo los días, y se usa más. Puede ser que hayan dos principales (si utilizan la misma cantidad de combustible que el Principal). En este caso, tachar dos casillas.
- El Segundo se usa casi todo los días, pero menos que el principal.
- El Otro se usa ocasionalmente (por ejemplo, el fin de semana o en fiestas).

No olvides precisar la frecuencia de utilización.

¿Que usa para el Desayuno?							
	Gas	Electricidad	Leña	Kerosene	Carbón	Bosta	¿Con que frecuencia?
Principal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>veces cada semana
Segundo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada semana
Otro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada.....

¿Que usa para el Almuerzo?							
	Gas	Electricidad	Leña	Kerosene	Carbón	Bosta	¿Con que frecuencia?
Principal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>veces cada semana
Segundo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada semana
Otro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada.....

¿Que usa para la Cena?							
	Gas	Electricidad	Leña	Kerosene	Carbón	Bosta	¿Con que frecuencia?
Principal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>veces cada semana
Segundo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada semana
Otro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada.....

Numero:	Encuesta de familias Parte sin cocina solar
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USO DE COMBUSTIBLES

¿Que usa para calentar agua para bañarse?								
	Sol	Gas	Electricidad	Leña	Kerosene	Carbón	Bosta	¿Con que frecuencia? (por persona)
Principal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada semana
Segundo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada semana
Otro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada

Aquí hay dos tablas para otros usos. Los otros usos pueden ser por ejemplo la cocina para el perro, la cocina del pan, del té, u otros usos.

¿Que usa para (escribir aquí otro uso).....?								
	Sol	Gas	Electricidad	Leña	Kerosene	Carbón	Bosta	¿Con que frecuencia?
Principal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada
Segundo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada
Otro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada

¿Que usa para (escribir aquí otro uso).....?								
	Sol	Gas	Electricidad	Leña	Kerosene	Carbón	Bosta	¿Con que frecuencia?
Principal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada
Segundo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada
Otro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> veces cada

¿Cuándo hace frio, calienta el medio ambiente?						<input type="checkbox"/> Si	<input type="checkbox"/> No	
¿Durante cuales meses?								
<input type="checkbox"/> Enero	<input type="checkbox"/> Febrero	<input type="checkbox"/> Marzo	<input type="checkbox"/> Abril	<input type="checkbox"/> Mayo	<input type="checkbox"/> Junio			
<input type="checkbox"/> Julio	<input type="checkbox"/> Agosto	<input type="checkbox"/> Septiembre	<input type="checkbox"/> Octubre	<input type="checkbox"/> Noviembre	<input type="checkbox"/> Diciembre			
¿Usa el mismo horno (o la misma cocina) para calentarse y cocinar?						<input type="checkbox"/> Si	<input type="checkbox"/> No	
¿Que usa para calentarse?								
	Gas	Electricidad	Leña	Kerosene	Carbón	Bosta	Tipo de instalación	¿Cuántas horas?
Principal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 horas cada día
Segundo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 horas cada día
Otro	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	 horas cada.....

Numero:	Encuesta de familias Parte sin cocina solar
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COMPRA Y RECOGIDA DE COMBUSTIBLES

¿Como compra los combustibles?			
Gas (Garrafas)	Compra..... garrafas vez cada..... Precio:.....Bol/garrafa		
	¿Compra a domicilio? <input type="checkbox"/> Si <input type="checkbox"/> No	Si no compra a domicilio :	Para ida y vuelta, se necesita (cuanto tiempo)..... Como (transporta).....
Gas(red)	¿Cuanto paga cada mes?.....Bol/mes		
Kerosene:	Compra..... litros vez cada..... Precio:.....Bol/litro		
	¿Compra a domicilio? <input type="checkbox"/> Si <input type="checkbox"/> No	Si no compra a domicilio :	Para ida y vuelta, se necesita (cuanto tiempo)..... Como (transporta).....
Carbón :	Compra..... bolsas vez cada..... Precio:.....Bol/bolsa		
	¿Compra a domicilio? <input type="checkbox"/> Si <input type="checkbox"/> No	Si no compra a domicilio :	Para ida y vuelta, se necesita (cuanto tiempo)..... Como (transporta).....

Leña			
¿Compra o recoge (corta) leña?	<input type="checkbox"/> Compra leña cortada	<input type="checkbox"/> Recoge (o corta)	<input type="checkbox"/> Compra arboles a un dueño
Si compra leña cortada			
¿Cuanta cantidad compra?	<input type="checkbox"/> Arrobas <input type="checkbox"/> Quintal <input type="checkbox"/> Sacaña <input type="checkbox"/> Otra unidad (Precisar):.....		
..... vez cada.....	Precio:.....Bol/unidad		
Tipo de leña	<input type="checkbox"/> Madera de construcción	<input type="checkbox"/> Arbustos	<input type="checkbox"/> Arboles
¿Compra a domicilio? <input type="checkbox"/> Si <input type="checkbox"/> No	Si no compra a domicilio :	Para ida y vuelta, se necesita (cuanto tiempo)..... Como (transporta).....	
Si compra arboles a un dueño			
¿Cuanta cantidad compra?	Arboles ves cada.....	Precio:.....Bol/árbol	
Tipo de árbol:	Precio para la moto sierra (con gasolina):		
¿Cuando tiempo se necesita?	¿Quien lo hace?.....		
Si recoge o corta leña			
¿Cuanta cantidad recoge?	<input type="checkbox"/> Arrobas <input type="checkbox"/> Quintal <input type="checkbox"/> Sacaña <input type="checkbox"/> Otra unidad (Precisar):.....		
..... vez cada.....	Tipo de leña	<input type="checkbox"/> Madera de construcción	<input type="checkbox"/> Arbustos <input type="checkbox"/> Arboles
¿Donde va para recoger leña?	<input type="checkbox"/> En su propiedad	<input type="checkbox"/> En un lugar publico	
¿Cuando tiempo se necesita?	¿Quien lo hace?.....		

Bosta			
Consumo	Cantidad:	Unidad:	...veces cada...

Numero:	Encuesta de familias Parte sin cocina solar
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COSTUMBRES

Para Cocinar

		Desayuno	Almuerzo	Cena
<i>¿Quién Cocina?</i>				
<i>¿Cuánto tiempo cocina?</i>	<i>Preparación</i>			
	<i>Cocción</i>			
<i>¿Cuántas personas comen?</i>	Mayores de 10 años			
	Menores de 10 años			

<i>¿Recién cambió de combustible?</i>	<input type="checkbox"/> Si	<input type="checkbox"/> No	Cambió de..... para.....
			¿Cuándo?.....
			¿Por qué?.....

Para cada combustible que usa, diga cuando se consume más combustible, y explique porque.				
Combustible	Invierno	Verano	Es igual	¿Por qué?
Gas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Leña	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Kerosene	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Carbón	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bosta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Annex 7**POWER OF THE SOLAR COOKSTOVES**

According to a study presented in the XV Peruvian solar energy symposium in 2008, the power of a solar heater similar to the cookers made by Inti Illimani is 50 W¹⁶. This test have been done under the method adopted by the Iberoamerican network of solar cooking and supervised by the general office of Research & technical cooperation from the University of Ancash (UNASAM). Some parameters and results of the study are presented in the Table 5.

Some tests have also been carried out on the solar cookers of Inti Illimani, using the methodology for Water Boiling Test (WBT¹⁷).

Table 5 : Parameters and results from tests to measure Power of solar cookers

	Mass of water (g)	Time (s)	ΔT (°K)	Energy (J)	Power (W)
Test made by F. Flores (2008) ¹⁶ with experimental solar heaters in Huaraz, Peru W Altitude: 3 100m Latitude: 9° 31' S Longitude: 77° 32' W		14 100	66,2	705 626	50
Test made by R. Maldonado (2010) with a SCS made in 2009 by BISS in La Paz, Bolivia Altitude: 3 660m Latitude: 16° 30' S Longitude: 68° 9' W	1 000	4 320	35	146 300	34
Test made by R. Maldonado (2010) with a SCS made in 2003 by BISS in La Paz, Bolivia Altitude: 3 660m Latitude: 16° 30' S Longitude: 68° 9' W	1 000	8 700	68	284 240	33

Considered Water heat capacity

4,18 J/g K

Then, the continuous useful output of each stove is around 40W, which is far less than 50 KW, as stipulated for the methodology.

¹⁶ Flores F. (2008) <http://issuu.com/residente/docs/calentador-con-energia-solar>

¹⁷ Bailis R. et. al. (2007) http://www.pciaonline.org/files/WBT_Version_3.0_0.pdf

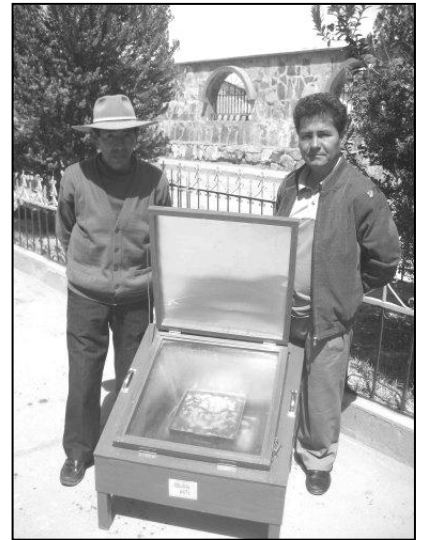
Annex 8**SOLAR COOKSTOVE DISSEMINATION PROCESS**

The construction workshops given to each beneficiaries for a period of 4 days and a complete detail programme of the workshop in explained below:

- 1) The beneficiaries have to request AII team for solar cookers. The condition to carry out a workshop in a particular area is to have a minimum of 20 beneficiaries for the workshops. Once the request is finalised, the AII team personally visit the area to enquire for a place where the workshop can be conducted for 4 days. This can be a community building/or a large room where training for 20 people can be easily given. The availability of the required raw material in the local market is checked and the ones that are not available, is bought from the neighbouring region/city. Once the materials and the place are finalised, the AII team fixes up four days as per the convenience of the beneficiaries to start the workshop.
- 2) During these 4 days, the first day, each beneficiary is provided with a set of raw materials (wood, hammer, nails, glass, paint etc) required to construct the solar cookstoves. This followed by explaining in detail the technical know-how about the constructing part. Since the beneficiaries are constructing the solar cookstoves themselves, personal attention is given for each participant during the construction phase so as to make sure that there are no mistakes. These three days of construction work involves theoretical advices regarding the importance of the project to the environment, how it promotes sustainability in the region and the nutrition value of the food cooked by the solar cookers. The final day is devoted to a practical use of the constructed solar cookstoves, where each beneficiary has to cook some food. The workshop is concluded with common lunch cooked with the solar cookstoves.
- 3) A monitoring survey is followed up by the AII team in the area to understand whether the beneficiaries could use the solar cookers, whether they had any technical problems etc. Such monitoring reports are carried out for each workshop that is carried out by the AII team.
- 4) The AII team promotes the beneficiaries to continue using the solar cookers by awarding the beneficiaries with tea-kettle, cooking utensils, pressure cooker etc if they were able to continuously use the solar cookers.

Some of the workshop photographs are provided below:

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Annex 9**FIRST SOLAR COOKSTOVE COURSES IN 2000**

Table 6 presents names, addresses and phone numbers of identified solar cookstoves beneficiaries who attended to the first construction courses led by Bolivia Inti in 2000 and 2001. Those solar cookers are still working.

Table 6 : Names, addresses and phone numbers of ancient beneficiaries

Name	Address	Phone number	Year of solar cooker
Olga Luz Chuquimia Peñafiel	Complejo San Luis	(591) 22 42 45 57	2000
Elba Mujica	Calle Ignacio Prudencio N° 40	(591) 22 41 11 49	2000
Jacqueline Murillo	Calle Ignacio Prudencio N° 11	(591) 22 42 11 02	2000
Benita	Calle Chaco N° 1152		2001
Miriam Nogales	Calle Ignacio Prudencio		2001
Dunia Fernandez	Calle Carandaiti N° 2576	(591) 73 52 92 44	2001
Justina Espinoza	Calle Adolfo Gonzales N°2377	(591) 22 41 36 64	2000

The following pictures show the first construction course carried out by Bolivia Inti in 2000 and a beneficiary of a 2000's course met in 2011 with a solar cookstove always functioning.

Figure 5 : First pilot construction of Solar Cookstoves in 2000

Figure 6 : A beneficiary of a 2000's Solar Cook Stove in 2011



Annex 10

ESTIMATION OF THE TRANSPORTATION EMISSIONS

As the project is spread across 4 departments of the country, the Inti Illimani team travels a lot. Therefore, it is necessary to estimate the GHG emissions linked to this transportation, in order to know if they are significant, and if they need to be monitored.

The project causes transportation of three types:

- The transportation of construction material from La Paz to the course site requires the rental of a truck. Generally, two courses are held in the same place, so the material for both courses is transported in the same truck.
- The 4 member team of Inti Illimani travels by bus to the courses site.
- After the course, 8 monitoring meetings are being held by the monitoring technician, who travels by bus.

Formulas applied to estimate transportation emissions

The GHG emissions for each type of transportation will be assessed separately:

$$TE_{total} = TE_{material} + TE_{technicians} + TE_{monitoring}$$

Where

- TE total = Total Transportation Emissions (in TCO₂eq/year)
- TE material = Emissions from transportation of material (in TCO₂eq/year)
- TE technicians = Emissions from transportation of technicians (in TCO₂eq/year)
- TE monitoring = Emissions from monitoring meetings (in TCO₂eq/year)

The emissions from the transportation of the material are estimated as follows:

$$TE_{material} = 0.5 \times N_{courses} \times AD_{course} \times Cons_{Truck} \times EF_{gasoline}$$

Where

- TE material = Emissions from transportation of material (in TCO₂eq/year)
- N courses = Number of construction courses per year (e.g. 20 courses per year)
- AD courses = Average distance from La Paz to the course (e.g. 400km way and return)
- Cons Truck = Fuel Consumption of a Truck (in L/km)
- EF gasoline = GHG emission factor of gasoline (in TCO₂eq/L)
- 0.5 = number of trucks used per course

The emissions from the travel of technicians to the courses are estimated as follows:

$$TE_{technicians} = 4 \times N_{courses} \times AD_{course} \times \frac{Cons_{Bus}}{N_{passengers}} \times EF_{gasoline}$$

Where

- TE technicians = Emissions from transportation of technicians (in TCO₂eq/year)

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- N courses = Number of construction courses per year (e.g. 20 courses per year)
- AD courses = Average distance from La Paz to the course (e.g. 400km way and return)
- Cons Bus = Fuel Consumption of a Bus (in L/km)
- EF gasoline = GHG emission factor or gasoline (in TCO₂eq/L)
- Npassengers = number of passengers in a bus
- 4 = Number of technicians
- 5

The emissions from the travel of monitoring technician to the meetings are estimated as follows:

$$TE_{monitoring} = 8 \times N_{courses} \times AD_{course} \times \frac{Cons_{Bus}}{N_{passengers}} \times EF_{gasoline}$$

Where

- TE monitoring = Emissions from monitoring meetings (in TCO₂eq/year)
- N courses = Number of construction courses per year (e.g. 20 courses per year)
- AD courses = Average distance from La Paz to the course (e.g. 400km way and return)
- Cons Bus = Fuel Consumption of a Bus (in L/km)
- EF gasoline = GHG emission factor or gasoline (in TCO₂eq/L)
- Npassengers = Number of passengers in a bus
- 4 = Number of monitoring meetings

The Emission factor of gasoline is calculated as follows:

$$EF_{gasoline} = \frac{1}{D_{gasoline}} \times \frac{NVC_{gasoline}}{1000} \times (EF_{gasoline,CO2} + EF_{gasoline,CH4} \times GWP_{CH4} + EF_{gasoline,N2O} \times GWP_{N2O})$$

Where

- EF gasoline = GHG emission factor or gasoline (in TCO₂eq/L)
- D gasoline = Density of gasoline (in kg/L)
- NCV gasoline = Net Calorific Value of gasoline (in TJ/Gg)
- EF gasoline, CO₂ = CO₂ emission factor or gasoline (in TCO₂/L)
- EF gasoline, CH₄ = CH₄ emission factor or gasoline (in TCH₄/L)
- EF gasoline, N₂O = N₂O emission factor or gasoline (in TNO₂/L)
- GWPCH₄ = Global Warming Power of methane
- GWPN₂O = Global Warming Power of nitrous oxide

Data for estimating transportation emissions

Data	Value	Unit	Source
CO ₂ Emission Factor of gasoline	69300	kgCO ₂ /TJ	Table 3.2.1
CH ₄ Emission Factor of gasoline	33	kgCH ₄ /TJ	Table 3.2.2
N ₂ O Emission Factor of gasoline	3.2	kgN ₂ O/TJ	Table 3.2.2
GWP methane	21		IPCC 2007, Table 2.14
GWP nitrous oxide	310		IPCC 2007, Table 2.14
Net Calorific Value of gasoline	43.3	TJ/gG	IPCC table 1.2

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Density of gasoline	0.71	kg/L	
Fuel Consumption of a truck	2.0	km/L	US Transportation Department, Bureau of Transportation Statistics - table 4-14M and 4-15M, 1960
Fuel Consumption of a bus	2.2	km/L	

Finally, the calculations of the transportation emissions give the following estimations:

Estimation of the transportation emissions of the project (in TCO₂eq/year)

Emissions from material	4.37
Emissions from technicians	0.79
Emissions from monitoring	1.59
Total Emissions	6.75

This leakage represents less than 2% of the annual ERs of the project (512 tCO₂eq/year). Therefore, it is negligible. However, distance to villages and mean of transportation have been included in the monitoring plan to ensure transportation emissions do not increase too much and cannot be considered as a leakage.


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Annex 11
TRANSFERT OF CREDIT OWNERSHIP


- - - -

During every construction courses, beneficiaries sign an agreement to transfer the credit ownership to GoodPlanet.

A copy of this signed agreement is given below:



ASOCIACIÓN INTI ILLIMANI - BOLIVIA
ASOCIACIÓN BOLIVIA INTI SUD SOLEIL - FRANCIA
ACCIÓN CARBONO - FRANCIA



actioncarbone.org

TRANSFER OF CREDIT OWNERSHIP

Understanding the cause of deforestation and the limited availability of non-renewable sources in Bolivia Bolivia Inti has initiated the Solar Cook stoves project. GoodPlanet is a NGO based in Paris, France and has taken the initiative to fund the Solar cook-stoves project in the regions La Paz, Cochabamba, Oruro and Santa Cruz of Bolivia. GoodPlanet is funding this project from the Voluntary carbon funds and will own all the credits produced by the solar cook-stoves project in Bolivia.

The beneficiary signed below, agrees to surrender all rights to GoodPlanet for the carbon credits produced by each unit.

Tomando en cuenta las causas de la deforestación y de la disponibilidad limitada de recursos no renovables en Bolivia, Bolivia Inti ha iniciado el proyecto de cocinas solares. GoodPlanet es una ONG basada en Paris Francia y ha tomado la iniciativa de financiar el proyecto de cocinas solares en los departamentos de La Paz, Cochabamba, Oruro y Santa Cruz en Bolivia. GoodPlanet esta financiando este proyecto con los bonos de carbono y sera propietaria de los bonos producidos por el proyecto de cocinas solares en Bolivia.

Los beneficiarios que firma a continuación están de acuerdo para ceder sus derechos a GoodPlanet por los créditos de carbono producidos por cada unidad.

Grupo: Valle del sol

Name (Nombre)	Identity Document (Documento de Identidad)	Signature (Firma)
Aurora Gomez		<i>[Signature]</i>
Benjamin Conde Choque	4768347 Sta Cruz	<i>[Signature]</i>
Sobino Inca Tumiri	3839634	<i>[Signature]</i>
Justina Alaca Bautista	5575877	<i>[Signature]</i>
Zenon Tola Jalacori	1414428 Potosi	<i>[Signature]</i>
Severa Choque Alave	8629184 Potosi	<i>[Signature]</i>
Teofila Bautista Felipe	6677991	<i>[Signature]</i>
Genaria Sayali Charali	5105777	<i>[Signature]</i>
Boy Martinez		<i>[Signature]</i>
Nicolasa Aduriri Copatiti	6631218	<i>[Signature]</i>
Dionisia Quspa Queda	5517121 P1	<i>[Signature]</i>
Jennor Conde Flores	88580521	<i>[Signature]</i>
Noemi Chara Pomero	8561691 Potosi	<i>[Signature]</i>
Elisía Alaca Martínez	5309699	<i>[Signature]</i>
Honorina Pezera Calizaya		<i>[Signature]</i>
Nelson Tola Inca	10533669	<i>[Signature]</i>
Zenobia Bautista Felipe	6677968	<i>[Signature]</i>
Martha Lopez	5504575	<i>[Signature]</i>
Celia Fuentes Queda		<i>[Signature]</i>
Eugenio Pillco		<i>[Signature]</i>

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Annex 12
FINANCIAL PLAN

Content of this Annex is presented as a separated document

Annex 13**CONSENT TO OPERATE CERTIFICATE**

NIT
NÚMERO DE IDENTIFICACIÓN TRIBUTARIA

RÉGIMEN GENERAL

**CERTIFICADO DE INSCRIPCIÓN
PADRON NACIONAL DE CONTRIBUYENTES**

NIT: 178494028
NOMBRE / RAZÓN SOCIAL: ASOCIACION INTI ILLIMANI

DATOS GENERALES:
DOMICILIO FISCAL: CALLE FERNANDO GUACHALLA NRO.790 PISO PB ZONA SOPOCACHI
DEPENDENCIA: LA PAZ
ALCALDÍA: La Paz
GRAN ACTIVIDAD: SERVICIOS
MES DE CIERRE: DICIEMBRE
ACTIVIDAD PRINCIPAL: Actividades de otras asociaciones (Logias)
ACTIVIDADES SECUNDARIAS:

REPRESENTANTE LEGAL: CATORCENO AGUILERA MAGDA
N° SUCURSALES: 0

OBLIGACIONES:
FORM. 500 - IUE - CONTRIBUYENTES OBLIGADOS A LLEVAR REGISTROS CONTABLES - ALTA 16/11/2010 - ANUAL
FORM. 608 - REGIMEN COMPLEMENTARIO DEL IVA - AGENTES DE RETENCION - ALTA 16/11/2010 - MENSUAL

FECHA DE INSCRIPCIÓN AL PADRÓN: 16/11/2010
FECHA DE EMISIÓN DEL CERTIFICADO: 16/11/2010

JACQUELINE ROJAS ZEBALLOS
JEFE DPTO. GESTIÓN DE RECAUDACIÓN Y EMPADRONAMIENTO
GERENCIA DISTRITAL LA PAZ

IMPUESTOS NACIONALES

Este certificado contempla los datos declarados en su formulario de empadronamiento, además de las obligaciones generadas a partir del mismo. En caso de no estar de acuerdo con uno o más datos u obligaciones apersonese al Departamento de Gestión de Recaudación y Empadronamiento de la Gerencia Distrital o Graco de su jurisdicción para regularizarlos.

ACLARACIONES SOBRE LAS OBLIGACIONES DEL CONTRIBUYENTE
- De acuerdo a la actividad económica declarada en su formulario de Empadronamiento, la Administración Tributaria determinó que adicionalmente a los impuestos que consignó, le corresponden las siguientes obligaciones:
IUE - 500 RC-IVA - 608

ACUSE RECIBO N° : 20-5344-023-5

NOMBRE O RAZÓN SOCIAL: ASOCIACION INTI ILLIMANI
N° MEDIDOR DOMICILIO FISCAL: 384378
N° MEDIDOR DOMICILIO HABITUAL:
DOMICILIO FISCAL: CALLE FERNANDO GUACHALLA NRO.790 PISO PB ZONA SOPOCACHI - ENTRE ABDON SAAVEDRA Y ECUADOR
DOMICILIO HABITUAL: -

PADRON NACIONAL DE CONTRIBUYENTES
LOS MISMOS DERECHOS Y OBLIGACIONES PARA TODOS