



Project description

Say Hi to Sun - Solar energy & enforced Association branding

Brazil is a vast country with geographical and cultural differences. But all over the country the sun shines year round and makes optimal to take advantage of this natural and renewable energy source. Actually, Brazil has one of the highest solar incidence in the world, yet only a fraction of the total energy production domestically (approx. 1.2%) comes from solar power. There exists a great potential for increased solar power production and heating. HI Brazil wants to invest in efficient systems to help reduce energy consumption in its hostels. This project will provide two HI hostels with an on-site solar thermal system that will reduce the energy consumption with 21-30% yearly.

The project aims to reduce the energy demand from the national hydro power grid to on-site systems that uses a renewable energy source. The investment will give the hostels access to 100% clean and affordable energy to heat up the water, while reducing energy consumption and carbon emissions while securing clean energy for the future. The project will reduce their dependents from the national hydropower grid which harms the local environment, exploit territory, their communities and ecosystems. The hostels will be pioneers within their regions and will educate and promote their new systems within the Association network, communities and hostels for domestic and international travelers.

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The project also aims to improve the National Associations economic dependence, and their investment in a new national marketing and HI branding strategy. The participating hostels have obliged to return 50% of their monthly cost savings from the project to the National Association. These monthly payments will be dynamic and go on until the total amount of the potential funding has been reached. The project supports the investment in innovative technology to reduce property energy consumption and emissions, while giving back to the National Association and the hostels within it that are not applying for this years competition.

The extra funds the NA will be receiving the next years will be used to improve their marketing strategy, enforce the national branding and recruiting new hostels to the HI Brazil network. In an increasing and more competitive accommodation market in Brazil, these funds will make a great difference for the HI network.





The Sustainable Development Goals that the project addresses and how

The main objective in which the project would contribute to the UN SDGs:



- Guarantee affordable, safe and renewable energy for the future.
- Enhance and promote a modern, efficient and reliable water heating service.
- Be self sufficient and independent in the water heating for the properties.
- Improve the efficiency and reduced energy consumption.
- Minimize greenhouse gases related to energy production in, and construction
- of hydropower plants.

The project also addresses and contribute in achieving several of the other goals:

			
<p>Support the access of small-scale industrial and other enterprises, and to promote inclusive and</p>	<p>Protect national heritage and support positive economic, social and environmental links</p>	<p>Adopt urgent measures to combat climate change and its effects.</p>	<p>Take action to reduce the degradation of natural habitats, halt the loss of biodiversity and, protect and</p>

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sustainable industrialization.	between urban, peri-urban and rural areas.		prevent the extinction of threatened species.
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Methodology

The Solar Thermal System

Solar water heating (SWH) is the conversion of sunlight into heat for water heating using a solar thermal collector. A sun-facing collector heats a working fluid that passes into a storage system for later use. Typically, solar panels work by transferring heat from the collector to the tank through a separate circuit and a heat exchanger. Heat collected by the panel heats up water (or oil or another fluid) that flows through a circuit of pipes into a copper coil inside your hot-water tank.



Photos from the already implemented system in the HI Brazil hostel Adrena Sport Hostel, Belo Horizonte.

Members of the board of the National Association and the participants of the interchange program Say Hi to Sustainability have together come up with this year's project idea for the 2020 HISF competition. The combined ideas of providing participating hostels with sufficient funds to start the system implementation processes, and the contribution to the NA through the hostels future costs savings, is a solution that will gain the whole network in Brazil. The vice-president of the NA send out an application form to all HI hostels in Brazil with numbers and figures needed to be part of this year's competition. One of the requirements to apply was that the remaining budget after the potential funding could be covered by the property management, in terms of savings or other alternative funding not mentioned in this application. In the end, two hostels were approved to apply; Hostel 7 (Brasília) and CabanaCopa Hostel (Rio de Janeiro.)

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As the first step to realize the project, the management of each hostel contacted several providers and local entrepreneurs to inspect their properties and make an offer for the necessary hardware and installation of a solar thermal system. After inspecting the proposals from different providers, evaluating the cost, environmental attributes and duration of installation, a state registered company, Solar DF, was chosen for Hostel 7; and a city based company, Comsol Rio Solar, was chosen for Cabanacopa Hostel. The hostels will install water tanks with different capacities to cover the need of heated water due to their guest capacity. Respectively two 2000 liters tanks for Hostel 7. CabanaCopa Hostel already have three 500 liters tanks installed, but uses today energy from a hydropower grid to heat the water. In their budget proposal is the solar panels, other hardware and installation service needed to rebuild the system to facilitate solar thermal energy. This goes for Hostel 7 as well in addition to the water tanks. The tanks and solar panels will be placed on the rooftops of the different hostels.

See the full proposals and budget items attached.

The equipment delivery time differ in the different proposals, with a maximum delivery time of 30 days for Hostel 7. The same goes for the installation period within 15 days after the equipment has been received. It is expected that it will take 45 days from the day Hostel 7 orders the system until it is installed and ready to be used. The proposal for CabanaCopa Hostel have shorter delivery and installation time for its system, so it is expected that the project duration will not surpass 45 days. The installation of the systems will be done by external providers, and the hostel managers will be responsible for monitoring the process on site.

A solar thermal system has already been implemented in one of the associations hostels; Adrena Sport Hostel. The good experiences from this project and the insight from the hostel manager Pedro will help facilitate and overcome potential future challenges with the system regarding maintenance and monitoring. Pedro is also a member of the HI Brazil board.

Because of the alternative part funding, the payment and installation of the system can be completed prior to a potential payout from the HISF. On the other hand, the management of the properties, nor the National Association, don't have the necessary funds to complete the project without support from the HISF. The project is therefore dependent of becoming top three in the competition amongst the NAs. After a potential confirmation of fund support from the HISF, the project will be initiated.

Monitoring plan

The project manager André Perotto will be in contact with the other hostel manager to oversee the implementation of the new systems. The hostel managers will cooperate with the responsible of sales and on site workers of Solar DF and Comsol Rio Solar to make sure

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the installation goes smoothly. The managers will have staff meetings to explain the new heating systems and the new implications for the daily operation after the systems are in place.

After the installation of the system, the managers will monitor the energy consumption on a monthly basis, recording the cost savings. Each month an amount equal to 50% of the cost savings related to energy consumption will be transferred to the National Association from each hostel. It is estimated that it will take 37 months before the hostels combined have paid the NA the total amount of the potential funding. See full estimation below.

The National association will use the increased revenue to enforce the HI brand nationally and market specific destinations and hostels within the network. An estimated amount of 15 hours is allocated for the monthly administration work. There is also an estimated 120 hours for the five board members to work with the allocation of extra funds for the marketing strategy each year. If the project is voted top 3 and the fund is granted, there will be held an extraordinary board meeting were the enforced branding and marketing initiatives will be planned. The strategy will be followed up and discussed on the national meetings normally held in November. The strategy will be distributed to all hostel owners and managers within the network.

Calculation of personnel time allocated to the project the next 37 months

15 hours administration, monthly x 37 = 555 hours


120 hours board members, yearly x 3 = 360 hours

Total amount of NA personnel time = 915 hours

Within which part of Sustainability Chart will this project improve the hostels?

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Our Nature
Managing waste & water



The new systems will reduce energy consumption related to heating up the water the hostels are using. The system monitors and regulates the heat of the water used for showering, improving the water management within the hostel.

Our Hostels
Achieving carbon neutrality



The hostels management will have increased awareness of their emissions and can more easily target reduced emissions in the future using the MyClimate tool. The new systems will reduce carbon emission with 11.4 tons yearly and secure renewable energy production for water heating onsite for the future.

Financial Sustainability
Creating fair profit & network development



The new systems will have a considerable cost reduction for the hostels, improving their economic freedom to invest in further sustainable initiatives. The system will also gain all hostels within the network with the increased revenue for the Association, in terms of improved marketing and branding.

Protecting Destinations
Culture & biodiversity




By decreasing the demand of energy from regional hydraulic energy grids, the hostels protests against the exploitation of natural habitats and biodiversity. There have been several accidents related to dam failures the last few years in Brazil, destroying local land and ecosystems.

Consuming Sustainably
Equipment, food & beverage



A solar thermal collection system is infrastructure for the future! It produces quality and efficient energy for heating on site. It supports the local economy by demanding sustainable energy production systems from local providers.

Our Communities
Giving back & building bridges



By decreasing the demand of energy from regional hydraulic energy grids the hostel protests against the exploitation of local communities; forced people relocation and human misery in industry failures. The hostel promotes sustainable energy production and consumption within the community.

Environmental, social and economic impacts

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Environmental Benefits	Social Benefits	Economical Benefits
<ul style="list-style-type: none"> - A calculated 27 441 Kwh reduction in energy consumption yearly; - equal to 686 full battery charge (194 138 km) of a Nissan Leaf. - A yearly reduction in carbon emission of 11.4 tons for 20 years (or more.) - Reduced energy demand from regional hydropower grids. - Self-dependence on renewable energy for heating water for 20+ years. 	<ul style="list-style-type: none"> - Reduced demand from hydropower grids and the negative social effects these have to reallocating communities and potential accidents and human suffering. - Supporting the hostels environmental education towards domestic and international guests, in-house and on social media. 	<ul style="list-style-type: none"> - An increased 30 065 BRL (GBP 6 631) budget revenue for the National Association within the first 37 months after implementation. - 21-30% reduction in yearly energy costs for the participating hostels; - a yearly 23 782 BRL saved from all three hostels; - total of 475 640 BRL saved during the project period. - Increased revenue for the hostels to invest in new sustainable projects

Estimation of emission reductions (CO² tonnes)

The hostel managers have used the tool provided by the partnering organisation MyClimate to calculate the total amount of carbon emissions from the hostel operation. The calculator provided on their webpage made it possible to identify the hostels total carbon emissions in 2019. The expected emission reductions for the coming years were then calculated by entering the estimated reduction in energy consumption for the respective properties.

Hostel 7

The hostel consumed 58 687 kwh in 2019 from a green energy source (hydropower.) Along with all the other aspects within the operation the total amount of carbon emission was 23.8 ton.

The same calculation was made with the expected 30% reduction in yearly energy usage, which is equal to a yearly 41 082 kwh consumption. After the system is implemented the hostel is calculated to emit a total of 18.1 tons of carbon dioxide yearly. This equals to a yearly reduction in carbon emission of 5.7 tons.

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2019	Total kwh 58 687	Total CO2 emissions	23.8 t
2021-2041 (yearly expected consumption)	Total kwh 41 082	Total CO2 emissions	18.1 t
Calculated yearly reduction in CO2 (23.8 t - 18.1 t)			5.7 t
Calculated total reduction in CO2, project period (20 years)			114.0 t

CabanaCopa Hostel

The hostel consumed 46 837 kwh in 2019 from a green energy source (hydropower.) Along with all the other aspects within the operation the total amount of carbon emission was 27.6 ton.

The same calculation was made with the expected 21% reduction in yearly energy usage, which is equal to a yearly 37 001 kwh consumption. After the system is implemented the hostel is calculated to emit a total of 21.9 tons of carbon dioxide yearly. This equals to a yearly reduction in carbon emission of 5.7 tons.

2019	Total kwh 46 837	Total CO2 emissions	27.6 t
2021-2041 (yearly expected consumption)	Total kwh 37 001	Total CO2 emissions	21.9 t
Calculated yearly reduction in CO2 (27.6 t - 21.9 t)			5.7 t
Calculated total reduction in CO2, project period (20 years)			114.0 t

The energy provided to these two hostels as of now is hydropower and a renewable energy source. It is primarily the calculated reduction in kwh of 21-30% that will reduce the carbon emissions by 11.4 tons yearly. This is because of the more effective, direct sun heating systems planned to be installed. There are other environmental and social benefits with changing from the state power grid to this on-site energy production system which is explained above, and which not shows in the carbon calculation.

Total

The project is estimated to reduce carbon emissions with 11.4 ton yearly from all the properties. With a calculated lifespan of 20 years, the project will reduce carbon emissions with a total of 228 tons within the project period. Some of these systems have liferanges more than 20 years if maintained properly, hence further positive environmental benefits and reduced carbon emissions not calculated here can be an outcome if the project is implemented.

2019	All hostels	Total CO2 emissions	51.4 t
2021-2041	All hostels yearly	Total CO2 emissions	40.0 t

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Calculated yearly reduction in CO2 (51.4 t - 40.0 t)	11.4 t
Calculated total reduction in CO2, project period (20 years)	228.0 t

Cost and Return on investment

The project will have a potential huge cost saving effect for the two participating hostels and increase the budget for HI Brazil in the coming years. The hostels management has obliged to give back 50% of the monthly cost savings of the project equal to the amount of the potential funding from both HISF and the Say Hi to Sustainability programme. HI Brazil will receive a monthly payment from the hostels until the total amount reaches 37 065Reais (6 631 GBP.) This is calculated to be after the 37nd month after the systems are implemented. The extra monthly funds will have a great economic impact for the NA and all the hostels within the network, and help the board work out an improved marketing and national branding strategy.

The calculations below are based on the energy usage and cost for the year 2019 from the two hostels. Hostel 7 moved to a new building in mid April, therefore the numbers used for the months January to April for this particular hostel are the average numbers from the months May to December, adjusted for the experienced alterations in Low/High season from the previous property.

The predicted yearly energy consumption and cost is based on a 21% (Cabanacopa) and 30% (Hostel 7) decrease in the total energy usage after the systems are implemented. These predictions are based on the expertise and experience of the local hardware and service providers, calculated for the specific regions of the country (amount of sun hours etc.)

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Hostel 7, Brasilia

Energy usage 2019																
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Monthly average	Total year	
Kwh	4632	5000	6000	6000	3413	3080	2775	3807	4645	6331	7418	5586		4891	58687	
Reais (BRL)	3752	4050	4860	4860	2540	2535	2332	3278	3973	5171	5763	4359		3956	47473	
Pound														734	8804	
													BRL per KWH May-Dec average 2019		0.81	
Energy usage predicted yearly 2021-2041 (30% reduction expected)																
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Monthly average	Total yearly	
Kwh	3242	3500	4200	4200	2389	2156	1943	2665	3252	4432	5193	3910		3424	41082	
Reais (BRL)	2626	2835	3402	3402	1935	1746	1574	2159	2634	3546	4206	3167		2769	33232	
Pound														514	6163	
													Reduction Kwh	1467	17605	
													Savings BRL	1187	14241	
													Savings Pound	220	2641	
														Total increased income (BRL) for the NA (Total amount of funding 2020)	37065	62 Months
														Total savings (BRL) until 2041	284820	
														Total reduction in Kwh until 2041	352100	
														Total savings (Pound) until 2041	52820	

Hostel moved into new building in April. Months January to April is calculated with the average numbers between May and December, adjusted for Low/High season.

The amount of months the NA will receive a monthly payment from the calculated 50% of the project costs savings, until it reaches the total amount of this years funding, property calculation.

Investment	BRL 37,695.00	
Savings (Average)/ Monthly	BRL 1,186.75	
Repairs/ yearly	BRL 1,000.00	
Investment Total in 20 years	BRL 57,695.00	
Payback (months)	32	
Liferange	20	Years
ROI (profit/ investment)X100	Profit/year	BRL 14,241.00
Total Profit	BRL 284,820.00	
ROI	393.66%	

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CabanaCopa Hostel, Rio de Janeiro

Energy usage 2019																
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Monthly average	Total year	
Kwh	6571	3639	4218	2723	2435	1903	1918	2216	3943	4810	6839	5622		3903	46837	
Reais (BRL)	6335	5199	6365	4912	3989	2209	1907	1943	2528	2206	4183	3655		3786	45431	
Pound														695	8343	
														BRL per KWH average 2019	0.97	
Energy usage predicted yearly 2021-2041 (21% reduction expected)																
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Monthly average	Total yearly	
Kwh	5191	2875	3332	2151	1924	1503	1515	1751	3115	3800	5403	4441		3083	37001	
Reais (BRL)	5005	4107	5028	3880	3151	1745	1507	1535	1997	1743	3305	2887		2991	35890	
Pound														549	6590	
														Reduction Kwh	820	9836
														Savings BRL	795	9541
														Savings Pound	146	1753
														Total increased income (BRL) for the NA (Total amount of funding 2020)	37065	93 Months
														Total savings (BRL) until 2041	190820	
														Total reduction in Kwh until 2041	196720	
														Total savings (Pound) until 2041	35060	

The amount of months the NA will receive a monthly payment from the calculated 50% of the project costs savings, until it reaches the total amount of this years funding, property calculation.

Investment	BRL 18,800.00	
Savings (Average)/ Monthly	BRL 795.08	
Repairs/ yearly	BRL 1,000.00	
Investment Total in 20 years	BRL 38,800.00	
Payback (months)	24	
Liferange	20	Years
ROI (profit/ investment)X100	Profit/year	BRL 9,541.00
Total Profit	BRL 190,820.00	
ROI	391.80%	

Total

Part of the investment is the expected maintenance cost during the systems liferange. The amount is calculated to be on average 1000 BRL yearly until 20 years after the system is installed. The project is expected to have a huge cost saving effect for the two participating hostels. The project is estimated to yield 475 640 BRL (GBP 87 880) within the project life range of 20 years. The National Association will see an increased budget income of 37 065 BRL (GBP 6 631) within the first 37 months after the project is implemented.

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Total increased income (BRL) for the NA (Total amount of funding 2020)	37065	37	Months
Total savings (BRL) all properties until 2041	475640		
Total reduction in kwh until 2041	548820		
Total savings (Pound) all properties until 2041	87880		

Why should the project be funded ahead of others?

First of all; HI Brazil has never received any previous funds from the HI Sustainability Fund. A potential top 3 in this competition will create national engagement and increased global attention. HI Brazil will be the first National Association in Latin America to ever receive funding since the HISF started up in 2012. This can motivate other NAs on the continent to apply in the next year's competitions and increase the awareness of the sustainable initiatives by Hostelling International.

This project will not only benefit the affected hostels economically, but also all the current 48 hostels within the hostel network. The extra budget funds this project will generate for the NA the coming years will promote the HI brand nationally, the destinations and specific hostels through marketing investments and branding. It will also facilitate the recruitment of new hostels to the network.

HI Brazil and its hostel wants to be agents for sustainable tourism. In a time when populist movements are gaining support all over the world and environmental aspects are being questioned and neglected, it is important to fight back and show that green investments are sustainable not just environmentally and socially, but also economically. To implement these systems and promote the benefits here in Brazil will serve as a counterbalance to the increasing amount of fake news and populist politics.

Communication Plan

The information and promotion of the new solar thermal systems within the hostels and network will be a big part of the educational aspect of the project. The information about the project and recruitment for votes in the competition, as well as the promotion of the installed systems will be promoted on the social medias of Hostel 7, CabanaCopa Hostel, the Association HI Hostel Brasil and the interchange program Say Hi to Sustainability. The four accounts together have almost 21 000 followers on Instagram and 51 000 followers on Facebook. The Say Hi to Sustainability project will make an educational video about the installed systems and promote it on the same channels, as well on Youtube, and using it within the hostels to inform guests.

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There will be made information signs about how the solar heating systems works, and the positive social, economical and environmental benefits they have. These will be put up inside the hostels in suitable spaces.

The National Association will make a press release to inform about the potential funding to the project and the expected increased income due to the hostels obligation to pay back the 50% cost saving to the NA.

Contribution from the National Association

HI Brazil will contribute with the personnel time necessary to implement the systems in the properties, and the work associated with collecting and budget the increased income from the project. As well as the work the extra fund will provide for enforced branding and marketing of HI Brazil nationally.

It is estimated a total of 360 hours from the Association board in finding the most efficient branding and marketing strategy, yearly follow-up work during the National Meetings and during the year. An estimated total of 555 hours will be allocated for the only associate hired within the Association during the first 37 months after implementation of the project.

A contribution in the form of cash, and as a requirement to be higher than what the HISF will support, is not economically possible from the National Associations side this year. The 2020 budget for the NA is tight and has no room for this kind of investment unfortunately. We hope this is taken into consideration when evaluating our project, and that the potential of an increased budget from this years competition can help recruit more hostels to the network so that the NA can contribute in future HISF competitions.

SAY HI TO THE SUN AND VOTE FOR HI BRAZIL



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