

HI USA: A Rooftop Full of Panels

Installing a solar photovoltaic system that generates 100% of HI SD Point Loma's electricity



Project Summary

Nestled in a neighbourhood setting in sunny San Diego, HI San Diego Point Loma is a welcoming retreat for eco-minded travellers. However, the hostel faces California's hardships: ongoing droughts, over population, and an imminent need to combat climate change. But the hostel has a plan to source 100% of its electricity through the use of solar panels.

With the city's endless sunshine, these panels can generate all the electricity the hostel needs to operate and serve guests. This includes all the air conditioning that's needed for climate control almost year-round, and the staff house adjacent to the hostel! In just a couple months, the system can be up and running and producing electricity for the next 30 plus years!

The solar array will reduce our greenhouse gas emissions by 36.6 metric tons annually which is like saving 4,114 gallons of gasoline, installing 1,389 LEDs, or charging your cell phone 4.7 million times! As a bonus, this non-profit hostel will never have to see an electricity bill again.

HI San Diego Point Loma has been a leader among the HI network in sustainable initiatives, carving itself out as a sought-after destination for this reason. A high visibility project like this will add to the hostel's strong eco foundation, allowing it to position itself as the ultimate urban eco-travel destination. Tourism is San Diego's largest industry, and this project will help visitors and residents alike in recognizing the need for and benefits of sustainable travel.

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While there are many environmental issues and opportunities for HI to tackle, combatting climate change is our single-greatest priority, and installing solar panels at our existing properties is one of the most effective way to reduce our collective onsite carbon footprint.

Hostel Overview

HI San Diego Point Loma is an eco-oasis nestled within a quiet neighbourhood that's just a short walk from the beach and a few minutes' drive to downtown. The hostel welcomes 12,000 travellers each year while also regularly hosting activities and events for its guests and community.

The first thing you'll notice when walking up to the door is the drought-resistant garden filled with ornamental and edible plants and surprised to find that it gets watered every time the laundry is washed. You'll soon discover the allure of the patio both during the day and at night, with a hammock, grills, a firepit, and plenty of cozy spots to relax and socialize. The proximity to the beach, authentic eateries, and top attractions, enhanced by that quintessential SoCal vibe, makes this hostel a favorite destination among the HI USA network.

As a leader in sustainable tourism, HI San Diego Point Loma was HI USA's first hostel to receive STEP certification (offered by Sustainable Travel International). The hostel goes above and beyond the basics of LED lights and Energy Star appliances, incorporating greywater recycling, the purchasing of renewable energy credits, and composting. Guests also find it easy to be a responsible traveler onsite, with access to bike rentals, a variety of walking tours, and vegan and vegetarian options at events.

With solar panels to round out HI San Diego Point Loma's commitment to sustainability, this hostel can serve as a model for how sustainability can enhance the guest experience, serve the community, and be financially viable.

Project Purpose

- 1) Generate nearly 100% of the hostel's electricity consumption on site through solar photovoltaic technology
- 2) Educate guests, visitors, and staff on renewable energy and climate change
- 3) Inspire other hostels across HI to explore onsite renewables

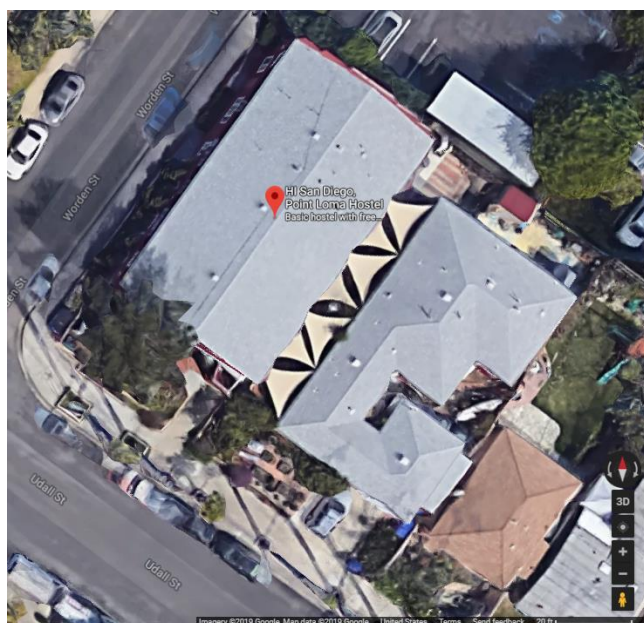
This project contributes directly to Sustainable Development Goal #13 Climate Action. Climate change is the most daunting and critical sustainability challenge we face today and into tomorrow. It is vital that all people and organizations work to recognize and reduce their carbon footprint. For hostels, installing onsite renewable energy systems is the most effective way to reduce greenhouse gas emissions from onsite energy consumption, one of two core activities that contribute to each of our organizations' carbon footprints.

Project Plan

HI USA has reached out to local solar contractors to determine project feasibility prior to submitting this application. Early estimates show the potential for designing a rooftop solar photovoltaic array that can produce nearly all electricity consumed within the hostel and staff house. HI USA owns the two buildings (3790 and 3778 Udall Street, respectively), which

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will both see panels as part of the installation. Below, is an aerial view of the hostel and staff house from Google along with a proposed system design from one of the potential contractors.



The system will connect directly to the local utility grid by replacing existing meters. Through the process of net-metering, electricity generated will be used immediately by the hostel or staff house or pushed onto the local grid, if not needed immediately. At night and during times when the hostel and/or staff house needs more electricity than the panels can provide, electricity will still be able to flow from the local grid into the buildings. No battery storage units are included in the design given cost and lack of space onsite.

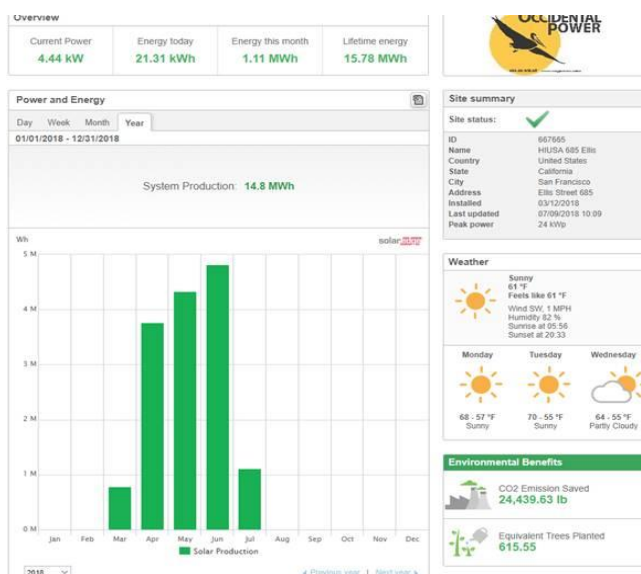
While federal tax credits still exist for organizations to install solar photovoltaic systems, as a non-profit HI USA can not easily access these credits. No other financial mechanisms (loans or power purchase agreements) will be utilized. The system will be purchased outright from

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the installer by HI USA as part of our capital improvement budget in the upcoming Fiscal Year starting April 1st, 2019. The total cost of the project is expected to be between 80,000 – 100,000 USD. Given our current annual expenditure on electricity of 14,486 USD, the organization anticipates a return on investment of 5 – 7 years depending on this year's HI Sustainability Fund results. Future savings will support the hostel's operating and programming budget.

The first step we will take is to review final bids and proposals from at least three local solar contractors. The average of bids received has been used for budgeting and savings within his application. When we have selected an installer, they will get exact measurements, develop a final blueprint and system design, and use it to apply for all appropriate local permits. Materials will be ordered, delivered, and installed by the contractor within the following weeks. Agreements with the local utility to switch to net-metering will be finalized, and the system will be officially turned on following final inspections by local authorities. We anticipate this entire process to start April 1st and conclude within 4-6 months.

As part of the contract, the installer will provide us with an online monitoring system that will allow us to measure system production and efficiency in real time. To the right is look at what the system looks like for our other rooftop array on top of HI San Francisco City Center.



Environmental Impact

The solar photovoltaic array will reduce greenhouse gas emissions from the consumption of electricity within the hostel and staff house. The chart below shows electricity consumption and costs between the two buildings over the last 2 years.

Year	Total Electricity (kWh)	Total Electricity Costs (\$)	Total GHG Emissions (Metric Tons)
2017	47,925	\$12,342	33.9
2018	51,705	\$14,486	36.6

The US Environmental Protection Agency's greenhouse gas equivalencies calculator was used to estimate greenhouse gas emissions. Reducing 36.6 metric tons of carbon-dioxide-equivalent annually is equal to:

- Not driving 89,397 miles in an average passenger car, or
- Taking 8 cars off the road per year, or
- Growing 605 tree seedlings for 10 years, or

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- Not charging your smartphone 4.7 million times

Communication Plan

The project will be highlighted within a news post on HIUSA.org and on national and hostel-specific social media channels. It will be a key feature in the post-year environmental impact report. Within the hostel, an educational display will be designed locally and installed that highlights climate change, renewable energy, and the role of sustainable tourism. The project will be used as part of HI USA's basket of sustainability accomplishments in other internal and external communication and education as opportunities arise.

Why this Project Should be Funded

Climate change is already having an impact on some areas of tourism across the World and threatens many more of our favorite destinations over the next few decades. As an organization dedicated to preserving and promoting responsible travel, we must take significant steps to reduce our carbon footprint.

Generating electricity on-site needs to be a key component of our climate action strategy.

This project is guaranteed to reduce greenhouse gas emissions by 36.6 metric tons this year for the next 30 plus years. When looking at other projects funded by HI SF, few have offered this level of guaranteed reduction in carbon footprint.

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