HI Sustainability Fund 2018

HI Canada: Solar Panel Installation at HI Calgary

Purpose/objectives of the project activity
The proposed 13.86 kW solar panel installation at HI Calgary will:
• Reduce consumption of electricity from Alberta Electrical Grid
• Contribute to Strategic Energy Management Plan $CO2_e$ emissions ↓goals
• Provide another demonstration of our collective commitment to renewable resources and sustainability

The primary objective for this project is to advance the clean growth economy by installing a solar power system that will reduce our reliance on the Alberta electrical grid and, as a result avoid emitting 12.15 tonnes of CO_{2e} emissions annually. Our Association has adopted a Strategic Energy Management Plan (SEMP) to guide capital investment and operational decision-making. One of our goals within the SEMP is to realize a 30% reduction in our CO_{2e} emissions by 2030 (baseline year, FY2011).

Additionally, the project will provide an additional platform of information to informally educate our guests on the efficacy of the clean energy economy option available and in use in buildings like ours. With data collected from previous electricity consumption, we will be able to clearly demonstrate the positive impact of the installations by comparing and sharing consumption data going forward.

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The Sustainable Development Goals that the project addresses and how

Goal 7: Affordable and clean energy

"*Energy is central to nearly every major challenge and opportunity the world faces today*." (UN SDG 7). This project addresses SDG 7 (Affordable & Clean Energy) by partnering with a government agency to invest in renewable energy infrastructure. Additionally, the data collection system will provide a platform to inform guests and employees, as well as neighbouring organizations, of the impacts and benefits of an urban based solar power installation.

Goal 13: Climate Change

"*Climate change, however, is a global challenge that does not respect national borders. It is an issue that requires solutions that need to be coordinated at the international level to help developing countries move toward a low-carbon economy*." (UN SDG 13). HI Calgary, a gateway hostel in Alberta, draws electricity from a provincial grid with a CO_{2e} emission intensity of about 0.9 kg/kWh……the highest in the country. Any measure that reduces the amount of electricity consumed in this province makes a direct and important contribution to reducing CO_{2e} emissions and is part of the solution toward a low-carbon economy (SDG 13, Climate Action

Methodology

Using SkyFire quote information for a 13.86kW system in this location, we can assume the system will generate 13,500 kWh per year. This would represent approximately 12% annual electricity drawn at this hostel.

Details of Work:
Contract professional engineer, an energy manager specialist, to review scope of work and call for quote parameters

- Call for quotes from local contractors, review of quotes and selection of contractor
- Secure required building permits
- Confirm final budget with contractor
- Place order for solar installation components and installation
- Professional engineer to review installation to maximize effectiveness and set up monitoring system/protocol
- Begin monitoring program.
- Initiate communication strategy to inform guests and community of the amount of electricity

Monitoring plan

The success of the project will be monitored through the collection of two data sets.
The first will be the data generated by the monitoring software installed with the system. This will provide daily, monthly and yearly numbers relating to the amount of electricity

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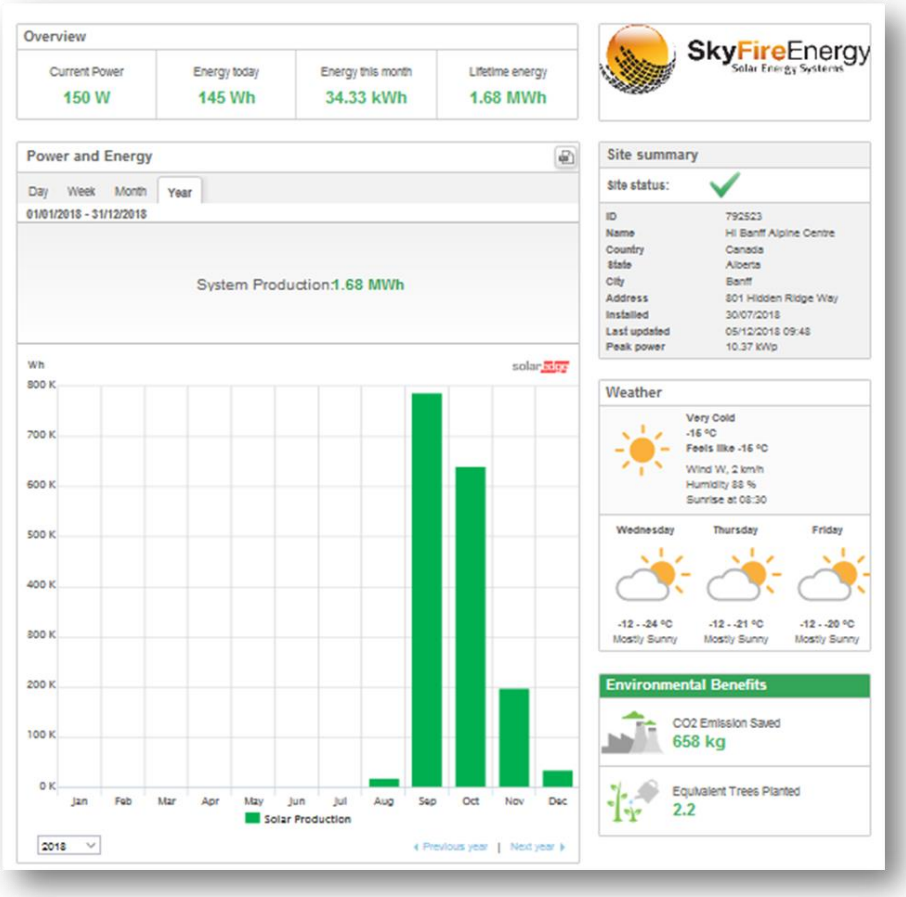
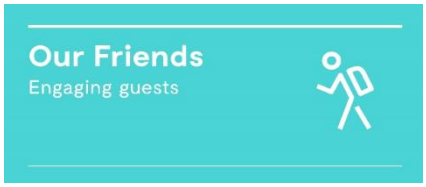


The second data set will be continually available through our ongoing collection electrical power consumption data. Comparisons with previous years electrical draw are important elements of our Strategic Energy Management Plan framework and, as such, critical to tracking performance.

Contribution of the project activity to the ten areas

This project makes a direct contribution to the goals under the **Our Hostels** area. The installation of this solar panel project would displace approximately 12% of HI Calgary's draw from the electrical grid.



The solar power installation will provide an educational opportunity for guests and employees to gain a greater understanding of operating with a feed-in solar power system. Information posters will give information relative to the system's installation, the fuel and emissions reductions and the safety features.

Environment, social and economic impacts

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Environment: HI Calgary draws electricity from a provincial grid with a CO_{2e} emission intensity of about 0.9 kg/kWh……the highest in the country. Any measure that reduces the amount of electricity consumed in this province makes a direct and important contribution to reducing CO_{2e} emissions.

Social: The solar power installation will provide an educational opportunity for guests and employees to gain a greater understanding of operating with a feed-in solar power system. The investment will inspire pride among employees and confirm the Association's commitment to reducing CO_{2e} emissions by 30% by 2030

Economic: The 13.86 solar power installation is expected to annually displace 13,500kWh of electricity, resulting in an annual savings of £1,200. Over a 25-year life time, this would total to £30,000.

Estimation of emission reductions (CO_{2e} tonnes). *Provide calculations and an estimate of how it will reduce the carbon footprint of the hostel*

The proposed system is projected to generate 13,500 kWh in its first year. Assuming this is an annual production, this will displace the equivalent draw from the Alberta electricity grid and avoid 12.15 tonnes of CO_{2e} emissions each year going forward. Over a 25-yer life time, this would total to a reduction of more than 300 tonnes of CO_{2e} emissions.

Saved funds and return of investment (ROI).

Anticipated Product/Project Cost	£18,000
Anticipated Gov't of Alberta rebate	£5,800
Anticipated net project cost	£12,200
Current annual cost (electricity)	£9,000.00
Anticipated annual cost reduction	£1,200.00
Investment recovery period (years)	10.2

The savings realized from this installation will be reinvested into the operations of the hostel.

Why the project should be funded ahead of others?
Calgary, Alberta is one of the sunniest locations in Canada (almost 2400 hours per year), and the sunniest of all in which the HI Canada network has a hostel. This funding this project will allow us to take advantage of all that sunshine in the middle of the oil and gas industry. The resulting reduction in CO_{2e} emissions will provide inspiration for our guests, our employers and our neighbours.

The electrical grid in Alberta, Canada, the province in which HI Calgary in located, is the most carbon intensive in the country with a CO_{2e} intensity coefficient of 0.9 kg/kWh. Given the nature of the power generation in this province, this project will represent one of our most significant impacts on CO_{2e} emission reduction. It will be an important contributor to our ambitions in advancing the clean growth economy and to our Strategic Energy

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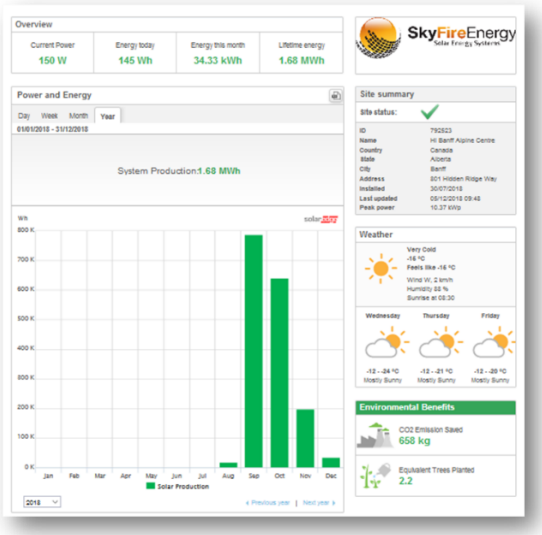
Management Plan goal of to realizing a 30% reduction in our CO_{2e} emissions by 2030 (baseline year, FY2011). Installing the proposed solar power system will reduce our reliance on the Alberta electrical grid and, as a result, avoid emitting 12.15 tonnes of CO_{2e} emissions annually.

Additionally, if we are successful in the 2019 HI-Sustainability Fund competition, HI Calgary will have the opportunity to apply to receive a rebate (35% of costs) offered by the Government of Alberta. This program encourages property owners to install solar photovoltaic systems that produce renewable electricity and are tied into the provincial electricity grid.

Sustainable communication plan for guests and stakeholders As hosts to hundreds of thousands of Canadian and international visitors to our hostels in western Canada since 1933, our message on this initiative can reach across the country and around the globe. With the solar power installation in place, we will track the success of this project in reducing our consumption of electricity from the Alberta electricity grid, one bearing the highest carbon footprint in Canada. These reductions in successes will be connected to the Hostelling International Sustainability Fund by declaring this contribution to our commitment to reduce our carbon footprint in our communication strategies. These include an active presence on several social media platforms (facebook, twitter, Instagram and YouTube)

This will be a central story told in our promotions through our many media channels. Hostelling International Canada is active and expert in spreading the word via our existing web site and various social media channels. We will use these tools to reach guests and the community.
In addition, the real-time dashboard display is to be available for viewing by guests at this hostel on an LED flat screen or tablet at the hostel.



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