

Light Up the World Solar Power Installation at Pedregal Schools

2026 SAIT Volunteer Trip Report



LUTW thanks the **Rotary Clubs** of Calgary Fish Creek, Calgary Stampede Park, Calgary West, and the Calgary Downtown Club for their funding support for LUTW's 2026 SAIT student volunteer Solar Project. In the May 17th to May 29th period **15 SAIT students** and their professors from Calgary helped LUTW install a solar electrification system and satellite internet at a pre-school and a high school in the remote Peruvian Community, of **Pedregal**.

The solar and satellite equipment was funded by total of **\$20,000** which included contributions from all four clubs as tabled in the Cost Summary section of this report. Funding also included a **\$7500 District Grant** as a 3:1 matching contribution from Calgary Fish Creek Rotary Club. LUTW also thanks **SILFAB Solar** and **S-5!** for their donation of the solar panels and solar mounting equipment required for the project.

Pedregal is a small rural community in the Peruvian Andes of approximately **150 members**. It is very remote being approximately **8 hours** to the nearest city of Ayacucho. It is at an altitude of **4,150 meters** above sea level. The community has a pre-school, elementary school, and a high school that accommodates **78 students** in total.

Technical Summary of the Installation

The solar system installed consisted of **12 solar modules of 370 W** each for a total rated photovoltaic output of **4,440kW. 15kWh** of lithium iron phosphate battery storage was installed to ensure constant power during the evening hours and for days with little sunshine. A **6500W inverter** was installed to ensure sufficient power to all the loads in the school such as a heater, kettle, lights, projectors, laptops, televisions, satellite internet and more. The system integrates a data collector as well so that system usage can be monitored remotely

and facilitates remote support in case of any issues. Electricity access was installed in all classrooms, bathrooms, and storage areas in the pre-school and elementary school for a total of **25 rooms** electrified and illuminated.



Social Benefits

This year, **58 students** are directly benefiting from the system, and **15 teachers** are using it to enhance the children's education. The high school operates on a 15-day boarding schedule - 15 days on campus from 8:00 AM to 6:00 PM, followed by 15 days at home - since many students live too far away for daily commuting. During these home periods, teachers often travel for hours to visit students and assist with homework. This results in the system being used 24/7 during the school year.

The impact on SAIT students was transformative. Through hands-on experiential learning in Pedregal, students developed intercultural competence, technical skills, and essential professional capabilities including teamwork, problem-solving, adaptability, resourcefulness, perseverance, and resilience all within a real-world energy infrastructure context. Post-trip reflections revealed profound personal growth: students were deeply moved by the community's warmth and generosity, gained renewed appreciation for resources often taken for granted in Calgary, and recognized how this experience will distinguish them as they enter the professional job market.

Feedback from the community indicates that students are more excited about school and more engaged in class. Meanwhile, teachers can better prepare and deliver interactive lessons using the internet, projectors, and digital media displays. Beyond the classroom, the system serves as a community hub where residents gather to warm up and stay connected, in an area with no electrical grid or prior internet access. Student enrollment is expected to remain steady or grow as the local population continues to rise.

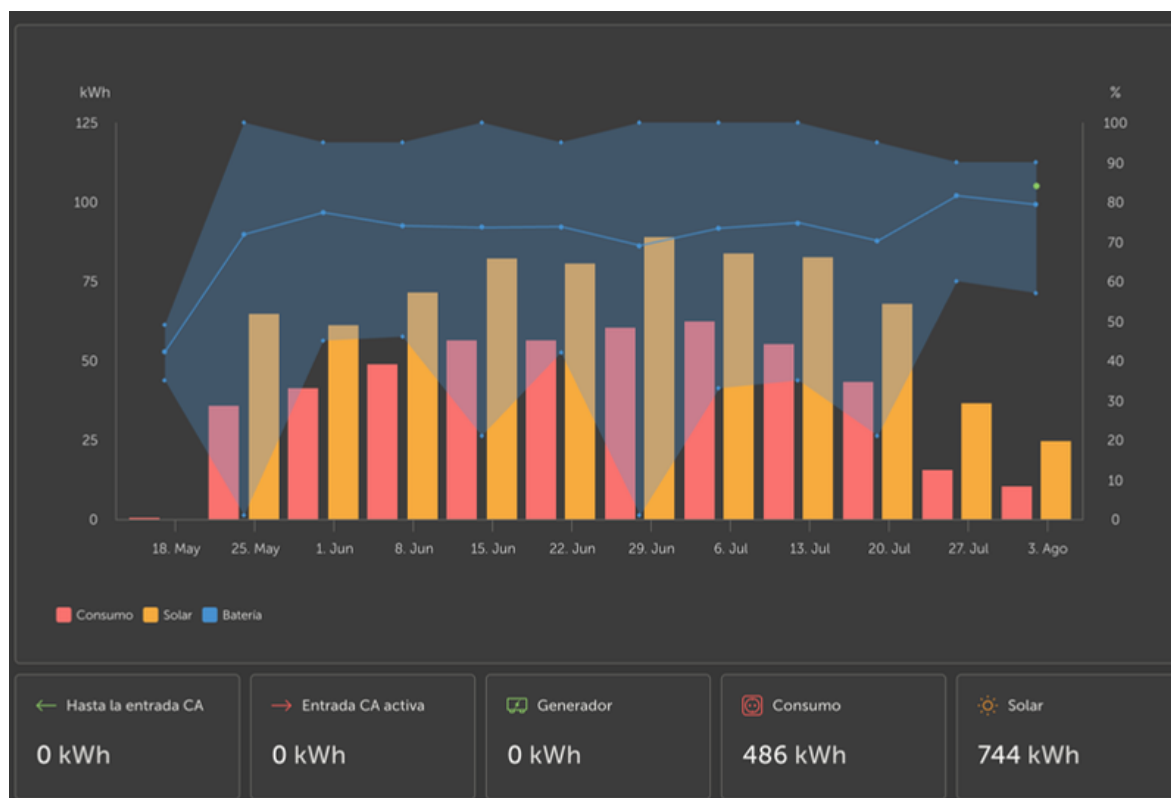
Community Contributions

The local municipality provided a one-time payment of ~\$2,100 CAD towards the school solar project. School teachers and students prepared a welcoming ceremony with thank-you posters and student singing and dancing interactions. The entire community hosted the inaugural ceremony complete with a champagne christening of the solar system and a traditional meal for the LUTW team and all community members. Community members also assisted with some of the labour-intensive tasks such as unloading equipment and trenching for cable installations. LUTW team members had numerous occasions to interact with the students and community members especially during the daily football and volleyball matches at end of the day!



Monitoring and Evaluation

Community members and school staff participated in a training session regarding the system's proper usage allowing them the opportunity to resolve any uncertainties or doubts about using it. The system monitoring is done remotely by satellite connection to the LUTW office in Lima. If the system is not working properly LUTW will receive an automatic notification and will call the school principal and school maintenance crew for troubleshooting. If the problem can't be fixed remotely, a local technician will be despatched to solve the system issue in coordination with the designated community member and school staff. A graph of the energy system is shown below and demonstrates correct system operation, consistent power production, and steady battery charge levels throughout the project period.



Cost Summary

Calgary Fish Creek, Calgary Stampede Park, Calgary West, and Calgary Downtown Clubs provided funding for the solar installation materials as outlined in the table below:

Equipment funded by Calgary Fish Creek and District Grant	\$10,000 Total
1 x LFP Battery 15kWh + shipping & import costs	\$3,950
Grounding system	\$500
Electrical outlets, cables, sockets, switches	\$3,200
Electrical cabinet	\$1,400
Monitoring, sensors and display device	\$950

Equipment funded by Calgary Stampede Park	\$5,000 Total
Internet main router	\$300
Satellite internet dish	\$700

Satellite internet access points	\$3,000
Internet cable, connectors, access point mounts	\$1,000

Equipment funded by Calgary West	\$2,500 Total
3 x Charge Controller 150/35	\$600
1 x Inverter 6500VA	\$1,900

Equipment funded by Calgary Downtown Club	\$2,500 Total
Solar Panel shipping and importation	\$800
Installation tools, field equipment	\$600
Kettles, space heaters, LED spotlights, LED lights	\$650
Electrical accessories	\$450

Notes

- LUTW has provided a comprehensive list of materials along with receipts
- The twelve 370 W solar panels were donated by **SILFAB Solar**
- The module mounting brackets were donated by **S-5!**

