

Sumaq Wasi Peru



CHALLENGE	OPPORTUNITY	SOLUTION	YEAR	PARTNERS
Extreme frost in the Andes	Improve health outcomes for thousands	Solar thermal capture	2021-2022	Ministry of Housing, Construction and Sanitation Pontifical Catholic University of Peru Peruvian mining industry Cambridge Research and Technology, LLC

Sumaq Wasi is an innovative partnership to support the government of Peru in addressing a long-standing climate and health crisis affecting the resilience of thousands of indigenous Peruvians living in the remote Andean mountains.

Heladas – known as extreme frost – contributes to hundreds of respiratory illnesses and related fatalities each year, especially among children and the elderly. The adverse effects are also intensifying because of climate change.

A contributing factor to these adverse health outcomes is the family dwelling, which is unable to maintain a safe and healthy ambient temperature inside the home as temperatures drop below 20 degrees Celsius outside.

The government of Peru is committed to finding a sustainable and scalable solution for more than 300,000 Peruvians living in these conditions. bechtel.org, together with the government and communities, Pontifical Catholic University of Peru (PUCP), and Cambridge Research and Technology, began applying human-centered design thinking, materials science (e.g., using only native materials), and engineering to develop a solar harvesting technology to capture, store, and transfer heat energy with the goal of maintaining 16-18 degrees Celsius (61-64 degrees Fahrenheit) – the safe and healthy temperature for the families.

The project partners piloted and validated the technology in a controlled environment at the PUCP campus in Lima and selected communities in Cusco.

Going to scale

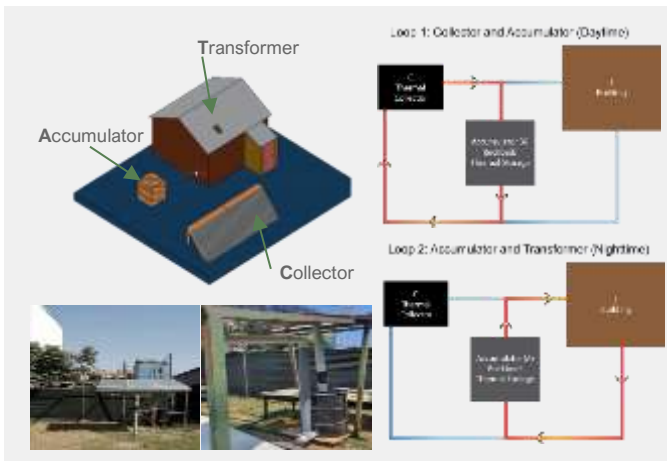
The next phase is to begin scaling the technology to enable the government to deliver approximately 30,000 homes and begin improving the health resilience of around 150,000 indigenous peoples.

bechtel.org will serve as the project management delivery partner responsible for:

- forming and operationalizing a project management organization with the government and the PUCP.
- integrating the technology into a new home system and delivering solutions to targeted communities in Cusco, Puno and Apurimac.
- supporting the training of adult family members to maintain the home system.
- establishing and implementing a monitoring and social measurement methodology.
- transferring technical knowledge and project management tools to advance the government’s planning for further scale up of the home system.

Impact focused

The goal of the project is not only to improve the health resilience of the families, but also demonstrate the performance of the home system and optimize the project delivery model to be a repeatable solution against Heladas. An essential aspect of this project is to measure the correlation between the temperature generated from the home system and better health and safety outcomes of the family. Data and insights from the project can aid in future targeted planning, intervention, and budgeting, tailored for indigenous families in the remote Andes.



Solar solution graphics provided by Cambridge Research and Technology, LLC.