

Solar energy powering resilient communities in Chile

The introduction of a people-centered solar energy program in northern Chile is enabling local communities to benefit from solar energy solutions and improve their resilience to changing environmental conditions.

The Program is enabled through the BHP Billiton Foundation's Chile Country Program which in part, aims to enhance community and environmental resilience in response to rapid socio-economic and environmental changes.



SERC Chile

SERC Chile is an excellence research center created by the National Science and Technology Commission (CONICYT) in 2013. With the aim to be a leader in research and development of solar energy in Chile, SERC is a consortium of institutions including Universidad de Tarapacá, Universidad de Antofagasta, Universidad de Chile, Universidad Técnica Federico Santa María, Universidad Adolfo Ibáñez, Pontificia Universidad Católica de Chile, Universidad de Concepción and the research center, Fraunhofer Chile.

INSTITUCIONES SERC CHILE EJECUTORAS:



One of the Center's four strategic focuses is the development and widespread adoption of small-scale solar solutions. In 2015, SERC Chile promoted the five-year Ayllu Solar Project, with BHP Billiton Foundation and Fundación Chile as strategic partners. The project budget of US\$14.92 million is funded by BHP Billiton Foundation.

SOCIOS ESTRATÉGICOS:



The Ayllu Solar Project



The Ayllu Solar Project fosters sustainable development in the urban and rural communities of northern Chile's Arica and Parinacota region, through the use of solar energy. *Ayllu* means 'community' in the Aymara and Quechua languages, which are the indigenous languages of these communities.

The specific objectives of the project are to:

- create cost-effective, replicable and scalable energy solutions based on solar energy
- build the human capital capacity of the community to effectively develop local solar energy solutions.
- ensure the sustainability of effective solar energy solutions, business models, support network, community involvement, and an appropriate institutional framework.

Maximising the potential of solar energy

The high-altitude northern desert region of Chile has some of the world's greatest potential to produce electricity, heat and light using solar energy. However, the communities of the northern Chile are generally small and widely dispersed, making it challenging to source local technical solar energy expertise. There are also no specific subsidies for renewable energy projects available in Chile, so small-scale projects, in particular, face difficulties accessing finance and obtaining permits.



Working with local communities

The Ayllu Solar Project uses a co-construction approach to work with local communities to deliver productive technological solutions and resilient socio-technical systems. The approach builds human capital and allows these communities to improve their own living conditions in a lasting sustainable way over time. Support is provided through technical training and educational programs which have been implemented through a network of 36 schools in the region.

Traditional approach compared with co-construction

	Traditional Approach	Ayllu Project
Design	Developed by technicians	Developed jointly between the technical team and the community
Operation & Maintenance	Dependent on external technicians	Installation of technical capacities in the community to allow the inhabitants of the territory to operate and maintain the project
Management of the technological application	Defined under technical criteria, externalized or not considered	Developed jointly with the community based and giving relevance to the local reality
Beneficiaries role	Communities are passive receivers	Communities play an active role and participate in the fundamental decisions that define the project.

By working with local educational institutions, including primary and technical schools and universities, the Project is:

- providing educational tools and programs to students and communities; and
- teaching social and technical skills while encouraging entrepreneurship.

The project is looking to replicate its outcomes in other regions of Chile and throughout South America.

The Chile Country Program

The BHP Billiton Foundation Chile Country Program is focused on harnessing the potential of young people through education, enhancing the capability of organizations and groups to participate in decision making, and enhancing the resilience of communities to respond to environmental change.

It comprises a portfolio of projects which:

- address common challenges through cross-sector dialogue and problem solving
- take a sustainable approach to implementation which allows three to five years to effect change
- strengthen the capacity of civil society and institutions to enable positive change in the lives of citizens
- draw on expertise from leaders in relevant fields to support project design, implementation and monitoring
- focus on learning, building evidence and sharing good practice to enhance outcomes and impact; and
- support transformative change through leadership, innovation and technology implemented locally by capable organizations which are informed by national and global learnings.

For more information on the BHP Billiton Foundation and the Chile Country Program, visit bhpbilliton.com/foundation.