



PROJECT:

Direct use of geothermal energy for the promotion of sustainable production model in rural areas in **Chile**



Implementing entity:

University of Chile, Faculty of Physical and Mathematical Sciences (through its Energy Center)



Project partners:

Geothermal excellences center of the Andes (CEGA); Regional Secretariat of the Ministry of Energy



Amount:

Budgeted: USD175,750
Spent: USD175,750



Duration:

29.05.2017 - 31.01.2019



Project objective:

The overall objective of the project was to reduce GHG and local pollutants emissions based on the proposal of business model and replicability strategies for the implementation of the pilot project centred in the sustainable production of firewood and vegetables in rural areas of Chile considering geothermal resources. The project considers the design and installation of a heating system with a geothermal heat pump for firewood dryer. To improve the efficiency of the system, it is proposed to build the dryer inside a greenhouse with all the energy losses of the dryer to be used for heating this greenhouse.

Project status: Completed

01

Geothermal greenhouse and firewood dryer have been constructed as a result of the project in the city of Coyhaique in the south of Chile.

02

Operational body to run the constructed facilities composed of representatives of the local community has been established and representatives trained

03

The wood dryer has the capacity to produce 30 cubic meters per month (360 cubic meters per year) of stacked firewood, while the greenhouse produces 2,000 lettuces per 1-1,5 months (16,000-24,000 lettuces per year).

04

Based on the test runs of the facilities throughout the project a business model and sustainable strategy has been developed. The specific focus is on agricultural products as they have raised most interest in the community.

05

Awareness raising and education activities of the project included the development of the project-specific [web-site](#); a number of workshops in schools and universities in the city of Coyhaique; collaboration with representative of the Ministry of Agriculture at city and regional level, with Municipality of Coyhaique, with Ministry of Environment and Energy.

06

Calculation of the CO₂ emissions reduction was in line with the IPCC guidelines. Project location is highly dependent on imports of agricultural products. The CO₂ emissions reduction is therefore linked to the avoidance of emissions from transportation of lettuce to the location. The emissions reduction related to firewood is based on the change to dry firewood as opposed to wet, which is not as sustainable and is the norm in the area. As a result of the project the CO₂ emissions have been reduced by 162.7 tCO₂eq/year.