



Sustainability action · Project Renewable Energy and Energy Efficiency

Dreher and Kotzian run-of-river hydro power plants, Brazil

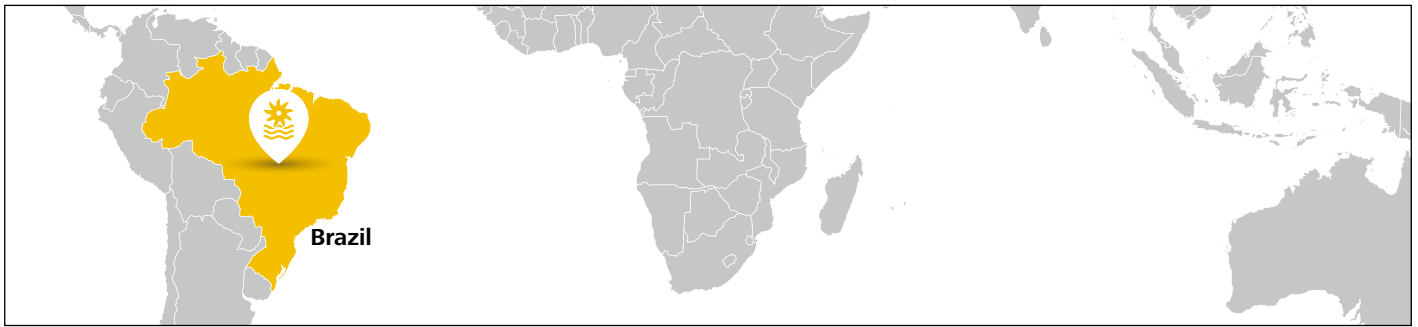
These two small hydro projects contributes towards helping Brazil fulfill its goals of promoting sustainable development by providing populations in rural areas with access to a clean and renewable energy source.

Project

The project activity consists of two small hydropower plants (SHPs). The Dreher SHP has an installed power of 17.95 MW and a new reservoir covering an area of 0.83 km². The Kotzian SHP has an installed power of 13.230 MW and a new reservoir covering an area of 0.66 km². The project provides electric power to the National Interconnected System - SIN (from Portuguese – Sistema Interconectado Nacional), and serves 47,000 families in 72 municipalities of Rio Grande do Sul. The plants do not require large reservoirs, instead using run-of-river hydro technology. Which preserves the natural course of rivers, flora and fauna and bringing development opportunities to local regions.

The projects was named after two engineers, Ernesto Jorge Dreher, born in Porto Alegre in 1915, who was one of the founders of the State Electricity Regulatory Commission (now CEEE) and also responsible for many hydrological surveys that resulted in the state and Kotzian Henry, who was born in 1899 in Czechoslovakia, and developed and coordinated several projects hydroelectric plants for the CEEE. In Rio Grande do Sul, there is great potential for the implementation of SHPs. The regions around the sierra and plateau have abundant water sources. Moreover, the SHPs construction helps to meet the growing energy demand on Rio Grande do Sul state, to decrease the external energy dependency and contributes to the environmental sustainability, as it increases the share of renewable energy in relation to the total consumption of electricity of Brazil. About 83% of the electricity generated in Brazil comes from Hydroelectricity, which makes the country the world leader in renewable energy generation, reducing dependence on fossil fuels which contributes to the greenhouse effect.

Checklist	Additionality and permanence	3 rd party verified	Transparency	Annual CO ₂ -reduction	Social and environmental benefits	Marketing material
Project 301 644	According to the rules of the VCS	By Bureau Veritas	Provided by Markit Registry	28,500 tCO ₂ e	As documented in our database	Pictures available



Location

The project is located in center the state of Rio Grande do Sul, between the cities of Salto do Jacuí and Julio de Castilhos. The stretch of the Ivaí River, where the power plants of the project activities are located on, take advantage of the favorable water flow conditions to generate power with minimal environmental impact.

Project achievements

Socio-economic impact

- Building of a new chapel in the the municipality of Salto do Jacuí
- PROSSEMA Health program Safety and Environment, was developed with the participation of SHP Dreher and Kotzian
- The project provides employment opportunities for the local population, generating approximately 1,200 new jobs, as the plants require teams for operation, management and repair services
- Road improvement works were carried the the Salto do Jacuí and Julio de Castilhos municipalities
- The project add value to the tax revenues of municipalities, improving the investment climate of municipalities and promoting socio-economic development of the communities involved
- Improved reliability of the electrical system in the region connected
- Lower environmental impact for present and future generations
- To ensure the well-being of communities with education support and infrastructure investments
- New and more comfortable homes built for families that had to be relocated during construction
- Various construction materials were donated to communities
- The Brazilian energy sector benefits from the technology and capacity development generated by the project. This can stimulate further innovative initiatives and encourage the development of modern and more efficient renewable energy units throughout Brazil.

Environmental impact

- 750,013 native trees were planted during reforestation recovery project
- 460,543 seedlings prvided to local communities
- 8,978 seedlings of native trees supplied to João Gonçalves Vieira School for student planting projects
- Banks of the river Ivaí and tributaries have been largely reforested
- Less environmental impact function of small wetlands
- Conservation procedures, combined with the constant monitoring of the teams involved, provides a stable base for future conservation efforts
- Training programs have been created to educate local communities on environmental preservation
- By replacing fossil fuel based thermal power plants with clean small-scale hydro power the projects decreases pollution in the area and the social costs related to it.

