Sustainability action · Project Renewable Energy and Energy Efficiency

Hezhou micro run-of-river hydro, China

Three micro hydro plants provide China's rural and mountainous South with clean energy. Without the need for a retaining dam, the plants use natural height differences to generate sustainable power.

Project

In Hezhou county, one can see the benefits of the small Zhoujianao, Daping II, and Zhongshan Caoduiyuan hydro stations: until recently, the population's light and heat came from burning wood (which lead to deforestation and soil erosion) or from dirty and inefficient diesel generators. Now, the use of locally produced renewable energy allows for sustainable development without emissions harmful to people and planet.

Further benefits to the locals include infrastructure improvements thanks to the project owners, who renovated roads and built bridges; before, some rivers could not be crossed during the rainy season. In addition, in a joint initiative, the hydro plants gave donations to provide furnishings for a new primary school, to strengthen sustainable development.

Technically, the hydro plants operate without dam (with their known problems of dam construction, flooding, resettlement, environmental impacts on river flora, etc.) but convert the force of water flowing through a penstock over a natural height difference into electrical energy. The emission reductions result from the replacement of carbon intensive coal power – still common in China – with clean hydro power. The combined power output of the three plants is 2.8MW.

Checklist	Additionality and permanence	3rd party verified	Transparency	Annual CO_2-reduction	Social and environmental benefits	Marketing material
Project 301 052	According to the rules of the Gold Standard	By Gold Standard Foundation	Provided by Markit Environmental Registry	4,500 tCO_2e	As documented in our database	high resolution pictures available

Location

The project consists of three small hydropower stations located in Hezhou Zhongshan county, Guangxi province. The rural, mountainous region, covered in 75% forest, is famous for its beautiful landscape.

Project achievements

Socio-economic impact

- In the construction phase, mainly locals found work. 26 jobs have been created in operation and maintenance, with training on the job and salary above Chinese standards.
- Newly built or improved local roads and bridges ease the locals' daily lives and improve connections to the lowlands – particularly in the rainy season. Before the project owners' infastructural engagement, some villages were cut off whenever rivers overflowed their banks.
- The decrease of open fireplaces in households due to the availability of safe and clean energy leads to less respiratory diseases.
- Rural electrification in general offers higher living standards to the local population.
- Thanks to financial donations by the hydro plants, a new primary school has been equipped with educational materials.
- As confirmed by the local Water Resource Bureau, there is no negative impact by the micro hydro plants on water consumption or irrigation.

Environmental impact

- The decrease of open fires for light and heating leads to less deforestation and soil erosion, while the decrease of diesel generator use improves local air quality and mitigates air pollutants such as sulphur dioxide and nitrogen oxide.
- A strict disposal plan guaranteed for the avoidance of dust emissions during construction, and for proper treatment of wastewater during construction and operation
- Replanting was conducted after construction works to minimize any potential negative ecological impacts.

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