

## China: Generating power from the Zijiang River



Certification:



### Key Facts



## Background

China's economy has grown rapidly. Together with a high population growth, the ongoing industrialization is causing an enormous increase in energy demand in the country. Although China has set itself the goal of increasing electricity generating capacity from renewable sources, coal is still the number one source of energy.

Today, about 70% of the country's energy needs are met by coal-fired power plants. China is both the world's largest producer and consumer of coal. Due to a readily available supply, coal is a cheap source for the country and China now accounts for around half of global coal consumption. However, most supply comes from northern and western China, yet the growth in energy demand is mainly centralized around southern and eastern provinces. Therefore coal often has to be transported across the country.

With a population of 1.3 billion and an average of 7.5t CO2 emitted per capita, China's carbon footprint is one of the largest in the world. This has had a significant impact on public health in the country and in 2012 alone, over half a million people died of respiratory cancers. To improve their environmental impact and reduce health risks, China needs to diversify its energy mix.



## The Project

Hydropower has huge potential in China. Already, around 20% of China's installed generation capacity is made up of hydropower and this could continue to grow. Projects like the Yiyang Xiushan hydropower plant therefore contribute to making China's energy mix more sustainable. The plant consists of around five turbines, each with an installed capacity of 13MW. The total capacity is around 65MW. The project annually produces around 276million kWh of clean power.

### Location:

Hunan Province, China

### Project type:

Renewable Energy - Hydropower

### Total emission reductions:

»» 243,000t CO<sub>2</sub>e p.a. ««

### Project standard:

VCS

### Project start date:

June 2008

## Sustainable Development

By supporting this project you'll contribute to the following Sustainable Development Goals:



**SUSTAINABLE DEVELOPMENT GOALS**



While focusing on reducing greenhouse gas emissions, all our projects also generate multiple co-benefits. These are supportive of the United Nations Sustainable Development Goals.



**Good health and well-being**

Apart from avoiding carbon emissions, the project also reduces the emission of other pollutants that are released during the burning of fossil fuels - such as sulphur dioxide, nitrous oxides and soot. Through this, air quality will improve and thus the risk of respiratory diseases is reduced.



**Quality education**

Hydropower is a zero emission energy source and a particularly important component of sustainable energy generation for China. By using a reservoir, power production does not depend on weather or rainfall and thus provides a stable and reliable source of power.



**Decent work and economic growth**

The project generates employment opportunities in both the construction and operation of the hydropower plant. Furthermore, the project will attract investment into the local area, providing a boost to the nearby economy.



**Industry innovation and infrastructure**

The hydropower station uses state-of-the-art technology, modernising the installed generating capacity within the regional grid. Furthermore, this will encourage further investment into modern technology across China.



**Responsible consumption and production**

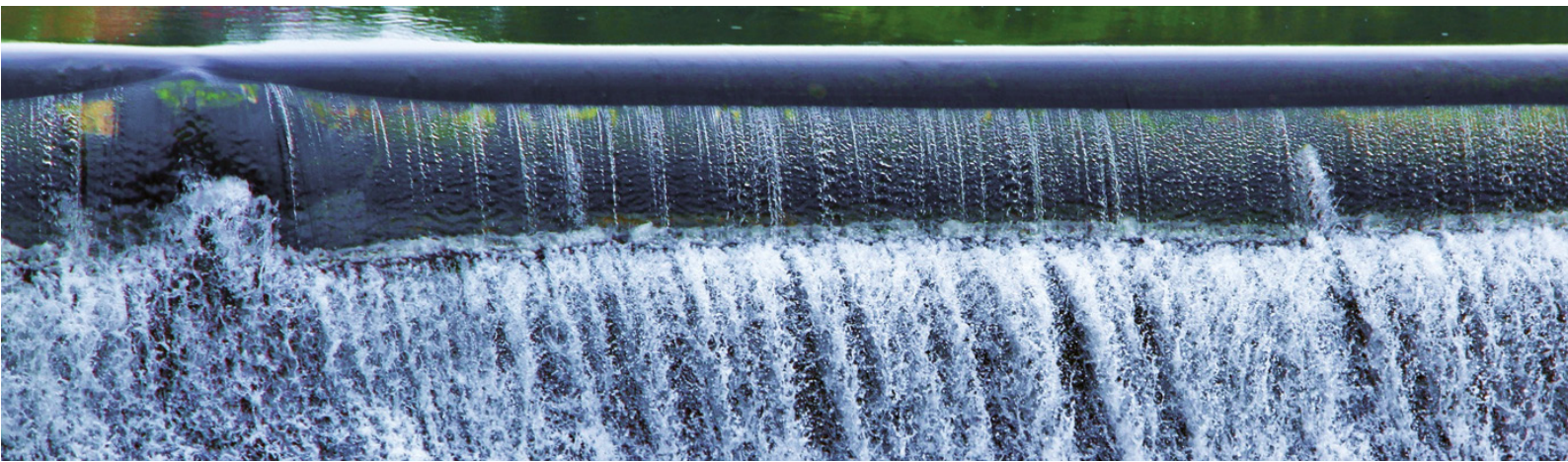
The implementation of a hydropower project reduces the supply-demand gap within the Central China Power Grid in a sustainable manner. Furthermore, it supports China in reaching its target of increasing renewable energy.



**Climate Action**

Hydropower is a clean, renewable, and environmentally friendly source of energy. It significantly reduces greenhouse gas (GHG) emissions and contributes to the mitigation of global warming.





## Technology brief – how it works

Hydropower is one of the oldest means of using energy. The principle is simple: All it needs is water and a difference in vertical height. The kinetic energy of the water flow drives a turbine coupled to a generator and thus is transformed into electricity.

This project is of the run-of-river type. The plant uses the natural flow of the river and diverts only part of the stream to drive the turbines. The project uses a dam meaning that the power supply doesn't rely on weather or rainy seasons. This makes the power consistent and reliable year-round and thus reduces the need for back-up generators which are often powered by fossil fuels. Furthermore, it means that the power supply can be controlled so that in times when demand is lower, water can be held back rather than creating a surplus of energy.



## Project Standard



The Verified Carbon Standard (VCS) is a global standard for the validation and verification of voluntary carbon emission reductions. Emissions reductions from VCS projects have to be real, measurable, permanent, additional, unique, transparent, and third-party verified. Assessed against the background of the total volume of emission reductions, VCS is the globally leading standard for voluntary carbon offsets.

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