

Small-scale Hydropower Generation System

Features

- Generates electricity from the power of water that runs and falls naturally, thus not generating CO₂ that may cause global warming.
- Eliminates 668 tons of CO₂ annually.

Overview

(Technical principles, actions, etc.)

1. Tap Water and Global Warming

Water supply is a service that involves a high environmental load, because the service uses a large quantity of electric energy for the purification and transmission of water. Therefore, the introduction of new energy and energy-saving measures are important action assignments of the service.

In addition, we consider the integral aspects of the business to include the stable supply of safe, palatable water at a low price, the prevention of global warming and the protection of the natural environment that produces healthy water.

2. Introduction of Small-scale Hydropower Generation System

Nara prefecture developed the “Nara Prefectural Government Stop Global Warming Plan” in March, 2001, and launched programs to curb greenhouse gas emissions.

As part of the plan, the Nara Prefectural Waterworks Bureau developed a ‘project for implementing environmental protection measures’ and introduced a small-scale hydropower generation system to the Water Quality Control Center (presently, the Nara Prefecture Regional Waterworks Center) in April, 2007, and to the Sakurai Water Treatment Plant in April, 2010. The small-scale hydropower generation system generates power using the natural flow and fall of water without emitting CO₂, which may cause global warming.

The project was selected as one of the “Best 100 New Energies,” a joint program conducted by the New Energy and Industrial Technology Development Organization (NEDO) and the Ministry of Economy, Trade and Industry, as a good example of local introduction of new energy systems.



Small-scale hydropower generation system (hydroelectric generator),
Nara Prefecture Regional Waterworks Center



Small-scale hydropower generation system (hydroelectric generator),
Sakurai Water Treatment Plant

Capacity and Effects

■ Power supply to the Water Quality Control Center from the small-scale hydropower generation system.

□ Nara Prefecture Regional Waterworks Center

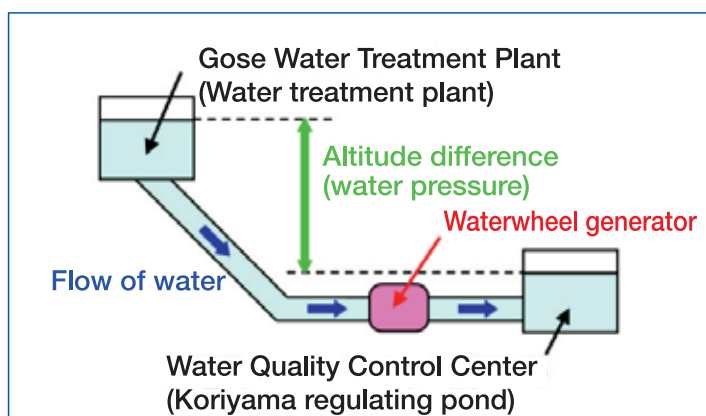
Reduces approximately 670,000 kWh a year = Covers the power consumption of 181 general households and approximately 15% of the power consumption of the Nara Prefecture Regional Waterworks Center.

□ Sakurai Water Treatment Plant

Approx. 1,560,000 kWh annually = covers 420 households
Supplies approximately 40% of the power consumed at Sakurai Water Treatment Plant

■ CO₂ emissions reduced by a small-scale hydropower generation system

Reduces 668 tCO₂ per year, equivalent to saving 539 kL (2695 drums) of petroleum = equivalent to the CO₂ amount absorbed by 265 ha of forest



Small-scale hydropower generation system