



rentricity

Rentricity Case Study

Pennsylvania American Water Company

Pennsylvania American Water Oneida Valley Water Treatment Plant Butler, Pennsylvania

PROJECT SUMMARY

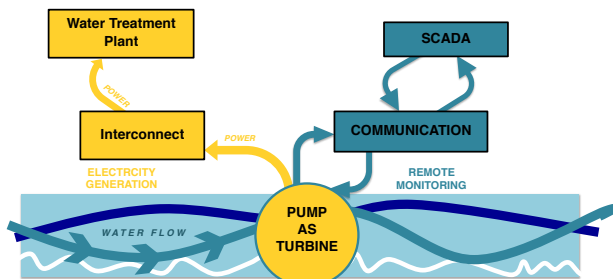
Rentricity installed its Flow-to-WireSM in-conduit energy recover system at a raw water intake at Pennsylvania American Water's (PAW) Oneida Valley Water Treatment Plant. The system generates clean electricity, offsetting electricity used to pump and treat water at the plant. Rentricity's energy recovery system is integrated into PAW's infrastructure which transfers water from the Oneida and Thorn Run reservoirs to the water treatment plant.

THE CHALLENGE

PAW's gravity-fed system includes a pressure reduction valve (PRV) to reduce water pressure before the treatment plant. The water distribution process, including water transfer, treatment, and storage is extremely energy intensive, and converting the excess water pressure into electricity, instead of waste heat, can help offset the plant's electricity usage.

RENTRICITY'S SOLUTION

Rentricity's Flow-to-WireSM system was custom designed for the PAW site's specific hydraulic conditions. It included a turbine generator with a piping bypass around the existing PRV, electrical controls and water process controls to keep the energy recovery system transparent to PAW's normal operation. The project also rerouted inflow pipes from the Thorn Run and Oneida reservoirs so that they now enter the plant through one common pipe.



Schematic of Rentricity's Flow-to-WireSM system

RENTRICITY'S RESULTS

The PAW Flow-to-WireSM installation has a capacity of 30 kW, generating 131.4 megawatt hours annually, allowing the company to offset electricity purchased from the grid. The Flow-to-WireSM system has an estimated 40-year life span, providing decades of predictable revenue and clean energy generation for Pennsylvania American Water.



Project Facts:

Installation Size: 30 kW

Annual Energy Generation: 131.4 MWh

Facility's Energy Offset: 5% of the plant's annual electricity use

Annual Reductions in Greenhouse Gas

Emissions: 90.6 tons per year

Grants/Subsidies: \$180,000 from Pennsylvania Energy Development Authority (PEDA)

Project Representatives & Partners

- **Dan Hufton** - Senior Director of Production, Pennsylvania American Water Company
- **Geoff Bristow** - Pennsylvania Energy Development Authority / PA DEP
- **Frank Bursic** - Rentricity Regional Director



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