

CASE STUDY:

Rochester Water Reclamation Plant



The Rochester Water Reclamation Plant has realized the value of making use of its existing resources.

The Rochester Water Reclamation Plant generates biogas as a major byproduct of its wastewater treatment process, which includes anaerobic digesters. This biogas has the potential to provide the plant with a renewable source of fuel that saves money on energy costs. During the major plant expansion of 1980, two 400 kW generators were installed which used the biogas gas to produce electricity. In 2000, due to concerns of local energy shortages, plant staff got the Rochester Water Reclamation Plant prepared. Partnering with the local Rochester Public Utility, and utilizing the technical knowledge of its staff, plant management decided to look for ways to use the facility's gas more efficiently.

In its current configuration, the Rochester Water Reclamation Plant produces enough biogas to reduce its power purchasing needs by 25% during summer months, but it plans to increase this percentage with a number of upgrades. The two existing 400 kW generators are currently being upgraded to 1000 kW generators, both with turbocharged



engines that will increase generator efficiency by 20%. The plan is to reroute the excess heat given off by the generators back to the anaerobic digesters. This added heat should increase biogas gas available for use in the engine generators by another 25%. Overall, the upgrades should allow the facility to supply 100% of its short-term power needs, and supply 50% of its on-going energy needs – making a significant dent in its fossil fuel energy consumption and making significantly better use of its on-site resources.

*For more information contact
Chet Welle, Rochester Water Reclamation
Project, 507.281.6190 x 3003,
cwelle@ci.rochester.mn.us*