



Energy Reduction at DC Water

How ICIS enabled DC Water to identify Usage and Costs

The Facility

The District of Columbia Water and Sewer Authority (DC Water) is an independent authority of the District of Columbia USA providing water treatment services to the region. The Blue Plains Advanced Wastewater Treatment Plant is the largest advanced wastewater treatment plant in the world, with a capacity of 370 million gallons per day (MGD), a peak capacity of 1.076 billion gallons per day and covering 150 acres.

The Challenge

DC Water required a sustainability solution that would enable them to identify, monitor and target the largest energy consumers at the facility, and engage in energy reduction projects to reduce their overall consumption and carbon emissions. In conjunction to this they required integration of the energy data with their Financial systems in order to track billing and ensure they were availing of the most cost effective source of energy for the facility. DC Water has a number of separate pumping stations for the treatment facility with vast amounts of data being collected by the process control system. As such, after a design study it was deemed unfeasible to invest in a traditional metering system and so they turned to ICIS for support with our patented virtual metering sustainability software platform that could leverage their existing infrastructure and provide the information that they required.

DC Water had a corporate requirement to achieve the following:

- Identify significant Energy Users and Energy Flow at the facility
- Continuously monitor, review and track energy usage and waste processed
- Link to the financial aspects of the organisation and justify energy costs
- Target energy reduction and cost saving projects for the facility

The Solution

In order to achieve their goals, DC Water engaged with ICIS in order to utilise our sustainability solution to provide the necessary information and analytical tools that would enable them to quickly and efficiently implement their energy management program. The ICIS platform was used to integrate into their tiered Wonderware historian architecture that was logging process data and metering information from various pumping facilities and the main waste water treatment plant itself.

With the unique ICIS technology, DC Water could:

- Build complete energy maps for their power and water (treated, potable and waste) from a building level right down to the pumping equipment
- Backfill energy data, removing the need to wait for a number of months for a new meter to collect it
- Grow the system modularly, adding new pumping stations and areas of the treatment facility allowing for the targeted analysis and review of specific energy users and water processed
- Gain quick wins on energy savings projects, as there is no delay in analysis like traditional metering systems
- Leverage existing infrastructure and data sources such as their bill rated meters, Nexus Metering, Wonderware SCADA and Historians plus PLC information

By utilising our approach in leveraging new and existing meters with the ICIS virtual metering for equipment and energy flow, the ICIS solution was deployed over a number of weeks to the facility. DC Water now have complete transparency of energy used and water processed through their facilities with the aid of dashboards, energy maps and analysis tools.

In conjunction with this energy usage review a financial portal provides detailed cost reports and analysis for an instant understanding of usage and future bills. DC Water purchase their energy from a combination of local distribution suppliers and the commodity markets. ICIS allows for the integration of their real-time energy pricing from the markets and their schedule tariff pricing from the local providers so that billing can be verified and checked in real-time. This allows for a proactive approach to budgeting for future bills and a constant review of the pricing modal for the organisation.

The Results

The results achieved by DC Water show clearly the benefits of using the ICIS platform as opposed to a traditional metering solution.

- A reduction in capital expenditure by using ICIS and the DC Water Automation infrastructure as opposed to a new energy management system
- Zero plant downtime for the installation and configuration of the ICIS platform
- Identification of energy users, water processed and an understanding of energy flow within weeks of the ICIS deployment
- Linking of energy cost analysis to patterns in pricing markets, tariff changes, weather conditions and waste processed

The ICIS platform now provides DC Water with a targeted analysis toolset for both their energy and cost analysis that is easily expanded upon. Weekly and monthly energy usage and billing reports with baseline information is generated that enables management and finance to keep an active view on the facility which they now incorporate into their standard facility business meetings.

The Future

DC Water continue to utilise and expand the ICIS platform and are now on target to achieve their energy reduction targets through the implementation of projects such as a Digester System that will reduce energy usage from the grid. The ICIS platform has provided a greater understanding of energy usage and the costs associated with it for the facility. DC Water continues to strive in its continuous improvement programs through the use of various ISO standards and will now be targeting itself with achieving **ISO 50001** certification for energy management, with the ICIS platform acting as its driving force behind the monitoring and analysis required to achieve this goal.

About Us

ICIS have been providing sustainability software solutions since 2007 and are the market leaders in virtual metering technology. For further details visit www.icissoftware.com

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