

Success Stories

# 2005 New Jersey Clean Energy Leader

## The Dome-Tech Group

### Clean Energy Market Innovator

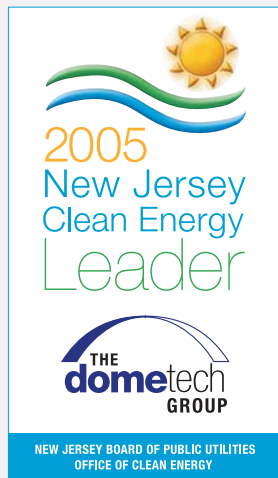
#### PROJECT INFORMATION

- Organization
  - **The Dome-Tech Group**
- Project Name
  - **New Jersey American Water**
- Location
  - **Various New Jersey sites**
- Project Contact
  - **Kristen Nawoj, Marketing Manager, Dome-Tech**
- Technologies
  - **High Efficiency Water Pumps**
  - **High Efficiency Lighting**
  - **HVAC Upgrades**
  - **Desiccant Dehumidification System**
  - **PV System**
- Estimated Annual kWh and Energy Savings
  - **26,546,000 kilowatt hours**
  - **265,000 Dekatherms of gas**
- Clean Air Benefits (Emission Reduction)
  - **17,000 tons of CO<sub>2</sub>**
  - **39 tons of N<sub>2</sub>O**
  - **112 tons of SO<sub>2</sub>**
- Payback Period
  - **Less than 7 Years**
- NJCEP Incentive/Rebate
  - **\$1.9 million**



“In addition to a very good return on investment, the energy program has improved our operations...”

*Scott Connor  
Capital Projects Manager  
NJAW*



#### Background

The Dome-Tech Group is dedicated to finding means to lower energy costs with the least capital investment. They develop and build on-site renewable and clean power systems and deliver hands-on energy conservation services for companies and institutions.

Dome-Tech was recognized as the 2005 New Jersey Clean Energy Market Innovator for various projects it installed for Merck's Rahway, NJ, campus; the Marriott in Edison, NJ; and New Jersey American Water.

#### Challenge

With New Jersey American Water, Dome-Tech was faced with several challenges to help its client enhance energy performance at some of its facilities across the state. As the Garden State's largest water utility, serving more than 2 million residents, NJAW has had to find ways to cut costs while at the same time increasing efficiency. NJAW contracted The Dome-Tech Group to identify a way to accomplish this goal.

As the price of water continues to increase, NJAW depends heavily on each of its facilities' pumps and purification systems for maximum productivity. Most of NJAW's energy is consumed by pumps to distribute the water. With that in mind, an energy efficiency and cost reduction program was put in place, starting with the screening and development of cost-effective energy conservation opportunities (ECOs).

#### Solution

With so much emphasis on conserving energy throughout the pump systems, NJAW needed to have initiatives set in place to ensure that this was accomplished. With Dome-Tech's expertise





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Dome-Tech engineer checking a meter at New Jersey American Water.



The NJAW solar photovoltaic energy system was completed in September 2005. On a cloudless, sunny day, the solar energy system will, in one hour, generate energy equivalent to that needed to run lights, air conditioners, and other electric power appliances in 500 homes.

and the help of rebates and incentives from New Jersey's Clean Energy Program, NJAW found a solution. Pump projects included complete pump replacements with high efficiency designs; pump retrofits and repairs; high efficiency motor and variable frequency drive installations; and the re-powering of pumps using natural gas engines (utilizing waste heat for building heating).

Additional energy conservation projects included: high efficiency lighting upgrades; building HVAC upgrades; and the installation of a desiccant dehumidification system that utilizes waste heat generated by natural gas engines.

In addition to the conservation projects, NJAW made a strong commitment to the environment by installing one of the largest ground mounted solar photovoltaic systems in New Jersey at its Canal Road Water Treatment Plant in Franklin, NJ. The system consists of over 2,800 solar panels and provides nearly 15% of the plant's energy needs. A \$1.9 million rebate from the New Jersey Board of Public Utilities' Clean Energy Program made the solar initiatives possible.

### Benefits

By producing a portion of their own energy, NJAW has fixed the cost of this power for the next 30 years. They will also be paid nearly double the value of the energy for the sale of SRECs (Solar Renewable Energy Certificates), which they receive for producing clean energy. The overall payback of NJAW's project is less than 7 years.

Along with the monetary and environmental benefits, Dome-Tech's client is also benefiting from the energy generated by the solar PV system, which allows them to perform certain operations round the clock, instead of being limited to certain times. As a result of the solar PV system's success, NJAW expanded upon it by adding 90 kilowatts in 2006. This 700 kW system will make it the largest ground-mounted system in the state for the foreseeable future.

Dome-Tech's clients are realizing tremendous savings from the energy efficiency and renewable energy systems installed. Savings from the Merck, Marriott, and NJAW projects include more than 26,546,000 kilowatt hours and 265,000 dekatherms of gas annually, and the reduction of carbon dioxide emissions by more than 17,000 tons; nitrogen oxide emissions by 39 tons; and sulfur dioxide emissions by 112 tons per year. That is the equivalent of taking more than 3,000 cars off New Jersey roads for a year or planting 4,600 acres of trees!

The Dome-Tech Group, through its extensive expertise and capabilities with energy innovation and renewable energy initiatives, continues to significantly aid companies and institutions in their energy efficiency projects, which goes a long way toward making New Jersey become a clean energy leader.

To learn more about New Jersey's Clean Energy Program, and to find out why **clean energy is smart business**, go to [NJCleanEnergy.com](http://NJCleanEnergy.com).

