



A Study in Physical Plant Efficiency:  
Metro Government of Nashville and Davidson Counties, Nashville, TN

# State-of-the-Art Energy System Heats Up Nashville's Economy.

## Customer Profile

World famous today as Music City, USA and home to the Grand Ole Opry, Nashville is a vibrant city of more than half a million people. It was also named by *Fortune* magazine as one of the 15 best US cities for work and family, and by *Forbes* magazine as one of the 25 cities most likely to have the country's highest job growth in the next five years.

## The Challenge

The Metro Nashville District Energy System (DES) provided heating and cooling to buildings in downtown Nashville for nearly 30 years, relying on an aging trash-burning plant with limited reliability and capacity. Despite many efforts to improve operations and safety and increase capacity, the facility struggled to stay economically and environmentally viable.

**"Constellation helps keep my tenants and the City of Nashville comfortable year-round."**

—Richard Fletcher, Chairman, Downtown Nashville Energy Coalition



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## The Solution

Nashville Metro Council turned to Constellation to design, develop and operate a new state-of-the-art \$46 million district energy system. Constellation worked to increase the interim efficiency of the old plant while constructing the new one which resulted in a seamless transition for all downtown customers. The facility, completed seven months ahead of schedule, began operation in December 2003 and was hailed by Nashville's mayor as "a true catalyst for downtown economic development."

The project was financed entirely with municipal bonds, with the City of Nashville retaining ownership of the facility. Constellation operates and maintains the facility under a 15-year agreement.

## The Results

The new DES facility has the capacity to provide 23,400 tons of cooling and 260,000 lbs/hr of steam heat. And it's projected to save Nashville about \$66.9 million by 2014. In addition, it is expected to lower heating and cooling costs significantly for downtown customers. The facility currently provides heating and cooling for approximately 40 downtown buildings, including the State Capitol, the NFL's Tennessee Titans stadium, the Gaylord Entertainment Center, home of the NHL Nashville Predators, and privately owned office buildings and hotels.



## Highlights

- Central chilled water and steam plant
- Initial construction cost of \$46 million
- 15-year operations contract with three 5-year renewal options
- 260,000 lbs/hr steam capacity
- 23,400 ton cooling capacity
- **Projected savings \$66.9 million** in first 10 years

## Technical Highlights:

### CHW PLANT

- 23,400 ton capacity
- Nine 2,600-ton dual compressor chillers
- Eighteen 1,300-ton cooling towers
- Variable primary CHW pumping system
- Constant-speed CW pumping system

### STEAM PLANT

- 260,000 lbs/hr production at 150 psig saturated
- Four 65,000 lbs/hr dual-fuel water tube packaged boilers
- **Fully redundant feedwater system**

## Call Us

To discover how we can put our expertise to work for you, call us today at **1.866.237.7693**.

**Constellation**, an Exelon company, is a leading competitive supplier of power, natural gas, renewable energy and energy management products and services for homes and businesses across the continental US. We provide integrated energy solutions that help customers strategically buy, manage and use their energy. Our customers, including two-thirds of the Fortune 100, rely on our commitment to innovation, reliability, transparency and service. That is the kind of value you and your communities can expect from Constellation.

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