



## Armstrong County Government

Local Government/Energy Efficiency | Kittanning, Pennsylvania

*Constellation Energy delivers energy and environmental solutions that help customers save energy, minimize costs, and reduce greenhouse gas emissions. Our expert and dedicated staff—combined with unparalleled corporate resources—provide world-class energy solutions, including consulting, assets, efficiency services, renewable generation, and energy supply. Our solutions are designed to achieve your energy goals and promote a sustainable future.*



### Project Highlights

- \$2.7 million in capital improvements
- 15-year guaranteed savings project
- Expected annual savings: \$191,000
- Verified first year savings: \$193,800

### Customer Profile

Armstrong County, Pa., located in western Pennsylvania northeast of Pittsburgh, dedicates itself to enhancing the quality of life and serving the needs of its 70,000 citizens by providing essential public services in a courteous, effective and fiscally-responsible manner. Among its goals are to be responsible with taxpayer resources and to utilize technological solutions for improving efficiencies and effectiveness.

### Project Description

In 2007, the Armstrong County leadership selected Constellation to help the County meet those financial and technological goals at county properties throughout the county seat of Kittanning. Constellation performed an extensive and thorough investment grade audit, revealing numerous opportunities for energy efficiency improvement. From this audit Constellation's experts developed a two-phase improvement project, implementing energy conservation measures in 12 properties covering more than 100,000 square feet.

### Efficient, Effective Solutions

Phase 1 addressed lighting, water, and infrastructure improvements at five primary county sites. Light fixtures were retrofitted or replaced with new energy-efficient electronic ballast systems and new high-efficiency luminaries. LED signs replaced incandescent and fluorescent signage; compact fluorescent bulbs and fixtures replaced incandescent lamps. Occupancy sensors were also installed to increase energy savings.

## Technical Highlights

- Energy conservation measures covering 12 sites and more than 100,000 square feet
- Lighting retrofits, upgrades, and new fixture installations throughout to increase quality of light while achieving maximum savings
- Replaced aging steam boiler with four modular high-efficiency non-condensing hot water boilers
- Installed new 100-ton chiller utilizing existing air-cooled condensers
- Installed and programmed new DDC systems with expanded capabilities



Constellation applied several water and related energy conservation strategies to improve operating performance and efficiency at the County Health Center and the County Courthouse Complex, which includes the county jail and administration building. Water and sewer savings were realized from replacing or rebuilding fixtures, and installing conservation accessories such as aerators and restrictors.

Additionally, Constellation implemented a number of significant infrastructure improvements. New Direct Digital Control (DDC) systems were installed and older systems upgraded to allow designated County personnel access to automated temperature controls directly from their laptops or desktops, as well as other vital tools for managing energy expenses. Modular, high-efficiency non-condensing hot water boilers installed at the Health Center eliminated equipment needed for steam production—as well as the need to repair and maintain steam accessories. Constellation also installed a new 100-ton chiller using existing air cooled condensers at the Health Center, and a new water cooled chiller to replace an existing chiller at the Courthouse.

Phase 2 included lighting system upgrades, maintenance garage controls, building automation, and water conservation measures at seven additional sites. Constellation also retrofitted the County Courthouse's steam plant to a hot water plant to reduce energy use; by eliminating the steam, Constellation reduced standby losses and saved natural gas.

## Achieving Fiscal Responsibility

Working with Constellation's financial experts, Armstrong County utilized the Pennsylvania Guaranteed Savings Act (subsequently amended by Act 77) allowing for a 15-year cost recovery/payback period as the procurement process to obtain capital improvements. This approach allowed the County to realize cost savings arising from energy savings on an annual basis to pay for the construction and installation of the many energy- and cost-saving measures.

A total of \$2.7 million in upgrades and improvements were financed, with project costs to be paid for from the savings realized by the upgrades. First year verified savings were \$193,800. Annual savings over the course of the 15-year guaranteed savings project are expected to average \$191,000 per year.

## Call Us

To discover how we can put our expertise to work for you, call us today at 1-800-436-3749 (1-800-4ENERGY).

[www.constellation.com](http://www.constellation.com)

© 2011. Constellation Energy Group, Inc. The materials provided and any offerings described herein are those of CNE and its affiliates, subsidiaries of Constellation Energy Group, Inc. Brand names and product names are trademarks or service marks of their respective holders. All rights reserved. Errors and omissions excepted.

Constellation ([www.constellation.com](http://www.constellation.com)) is a Fortune 500 company whose combined revenues in 2010 totaled \$14.3 billion.