



City of Flagstaff, Arizona

Multi – Phased Energy Management & Conservation Performance Contract

APS Energy Services completed an Investment Grade Audit for the City of Flagstaff, Arizona. To assist the City of Flagstaff in managing future maintenance budgets, infrastructure improvements, carbon footprint and equipment operations, APS Energy Services identified the following Energy Conservation Measures:

❖ Comprehensive Lighting System Retrofit

More than 5,000 fixtures were replaced with energy efficient components that reduce electric consumption and improve lumen output at acceptable light levels for each area/room.

❖ Occupancy Sensors Installation

Installation of sensors in more than 100 rooms to maximize energy efficiency.

❖ Street Light Conversion

More than 1,000 high pressure sodium and mercury vapor street lights were replaced with low pressure sodium fixtures.

❖ LED Pedestrian Signs & Traffic Signals

Replacement of 90 pedestrian fixtures, 328 green traffic signal fixtures and 328 yellow traffic signals.

❖ Motors Replacement

A total of 77 HVAC and process motors were replaced with premium efficiency motors, sized for specific applications.

❖ VendingMisers™ Controls Installation

Installation of VendingMisers™ Controls on suitable cold drink and snack machines throughout the City.

❖ Expansion of Direct Digital Control (DDC) System

Utilizing optimum start/stop; room temperature set-point control; scheduled start/stop; single point, web-based integration and remote access capability.

❖ Chiller Installation

Replacement of two existing chillers with electric, 125-ton chillers, a cooling tower, ventilation and humidity control at the Jay Lively Ice Rink.

❖ Water Conservation Program

Replacement of toilet tanks with new low flow tanks, replacement of urinals with new waterless urinals and replacement of sink valves with moderator valves.

❖ Chiller Replacement

Installation of a new 80 kVA and 15 kVA UPS to provide reliable uninterruptible power supply and a new dedicated HVAC unit for the server room at City Hall.

❖ HVAC Upgrade

Installation of a new 60-ton condensing unit with compressors and associated equipment at the Main Library.



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Solar Photovoltaic Power Generation

Installation of a 15 kW solar PV array that is split between the Southeast and Southwest sections of City Hall. A portion of the installation is mounted to the exterior facade on the South side of Flagstaff City Hall, while the remaining array consists of over 2,700 square feet of solar panels mounted on a 12-foot-wide covered walkway running the length of the existing sidewalk from the West parking lot to the Southwest entrance.



Cogeneration at Wildcat Wastewater Treatment Plant

APS Energy Services completed the design and construction of a cogeneration unit at the Wildcat Hill Wastewater Treatment Plant. The project provides Wildcat Hill Wastewater Treatment Plant with a biogas reciprocating engine capable of producing approximately 292 kilowatts (kW) of electric power and 27,000 mmbtu heat at a 7,000 foot elevation at full load.



To date, the total annual energy savings for all City of Flagstaff projects is:

- ❖ 2,077,508 kWh
- ❖ 802 Gallons of Water



These savings translate to the following environmental benefits:



273

Passenger cars not driven for one year



169,352

Gallons of gasoline saved in one year



10

Acres of forest preserved from deforestation in one year

