

# Energy Savings Performance Contract Project Report Performance Year 2

February 20, 2018

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Account Executive



# Agenda

- Project Mission
- History & Background
- Realized Benefits Performance Year 2
- Verified Savings Results Performance Year 2
- Measurement & Verification Method
- Q & A With Commission

# Project Mission

- Find Positive ROI Energy Conservation Measures (CMs)
  - *Lighting and Controls*
  - *Street Lighting*
  - *Water Conservation*
  - *HVAC Controls*
  - *Demand Controlled Ventilation*
- Self Fund Complete Project per FS 489.145
  - *Audit*
  - *CMs*
  - *Deferred Capital Projects*
  - *Costs of Financing*
- Produce & Recommend Turnkey Project
  - *Fixed Cost*
  - *No Change Orders – Contractor at Risk*
  - *Guaranteed Savings*

# History & Background

- Investment Grade Audit
  - *26 Sites – Buildings and Parks*
  - *Initial Surveys Conducted*
  - *Narrowed to 17 Sites*
  - *Multiple Projects Identified*
  - *In Depth Costs and Savings Estimates Calculated*
  - *Project Mix Defined By City With Master Plan*
  - *Delivered February 3, 2014*
- Energy Savings Performance Contract
  - *Executed March 14, 2014*
  - *Value: \$6,039,229*
  - *Annual Savings Guaranteed: \$432,665*
  - *Simple Payback: 13.95 Years*
  - *19 Year Net Present Value: \$1,262,252*



# History & Background

- Construction
  - *Start: April 2014*
  - *Complete: October 2015*
- Measurement and Verification
  - *Performance Year 2 Start: October 30, 2016*
  - *Performance Year 2 End: October 29, 2017*
  - *Report Delivery: January 12, 2018*
  - *Commission Verbal Report: February 20, 2018*



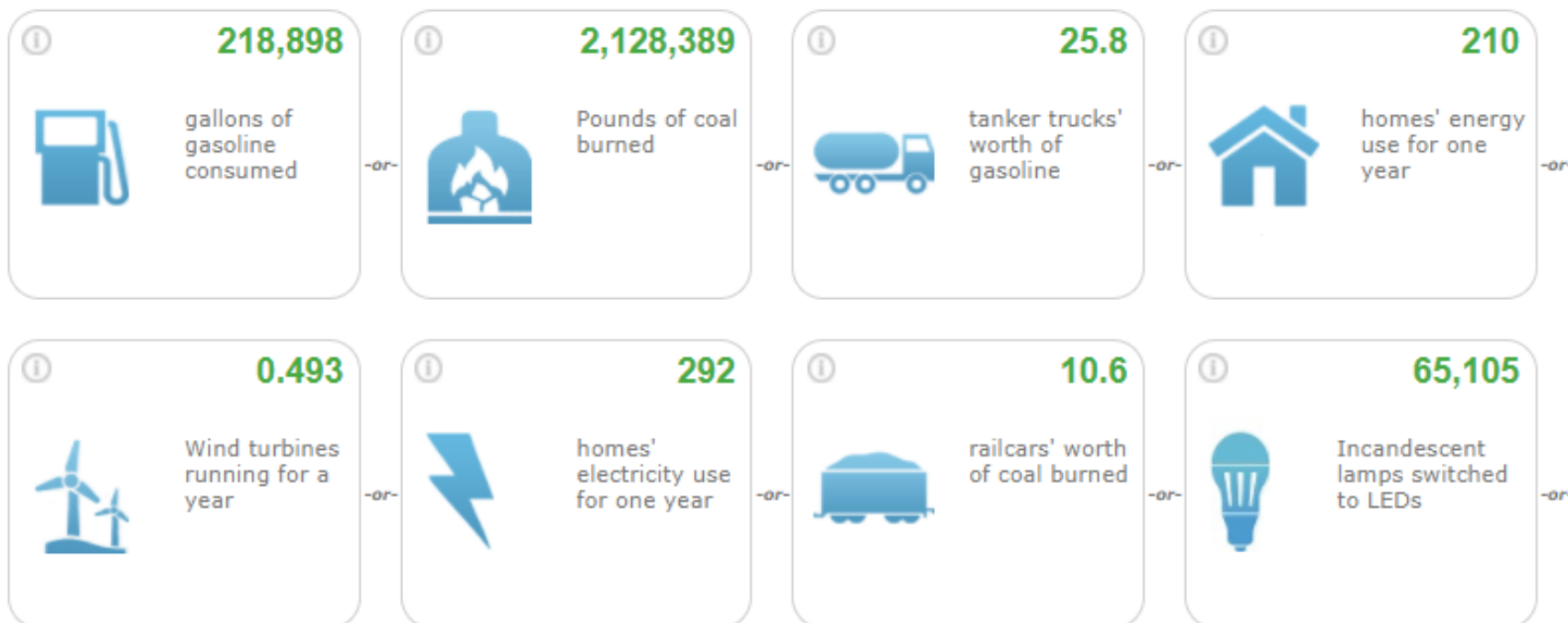
# Realized Benefits Performance Year 2

- Annual Savings Verified Exceeds Guarantee By \$36,239
  - *Guaranteed*       \$ 442,391
  - *Verified*         \$ 478,630
- Significant Capital Renewal Projects Completed
  - *Equipment End Of Life Issues – No Capital Budget - Resolved By Project*
  - *HVAC Equipment: New Chillers, Pumps, Air Handlers, Valves, VAV Boxes, Variable Frequency Drives, Fan Coil Units, Split System Units for IT Spaces*
  - *HVAC Controls: Pneumatic Replaced With DDC*
  - *Interior Lighting: Included Replacement 17 Buildings*
  - *Street Lighting: Included Replacement of Over 4,000 Cobra Head and Decorative Lamps With Low Maintenance LED Technology*



# Realized Benefits Performance Year 2

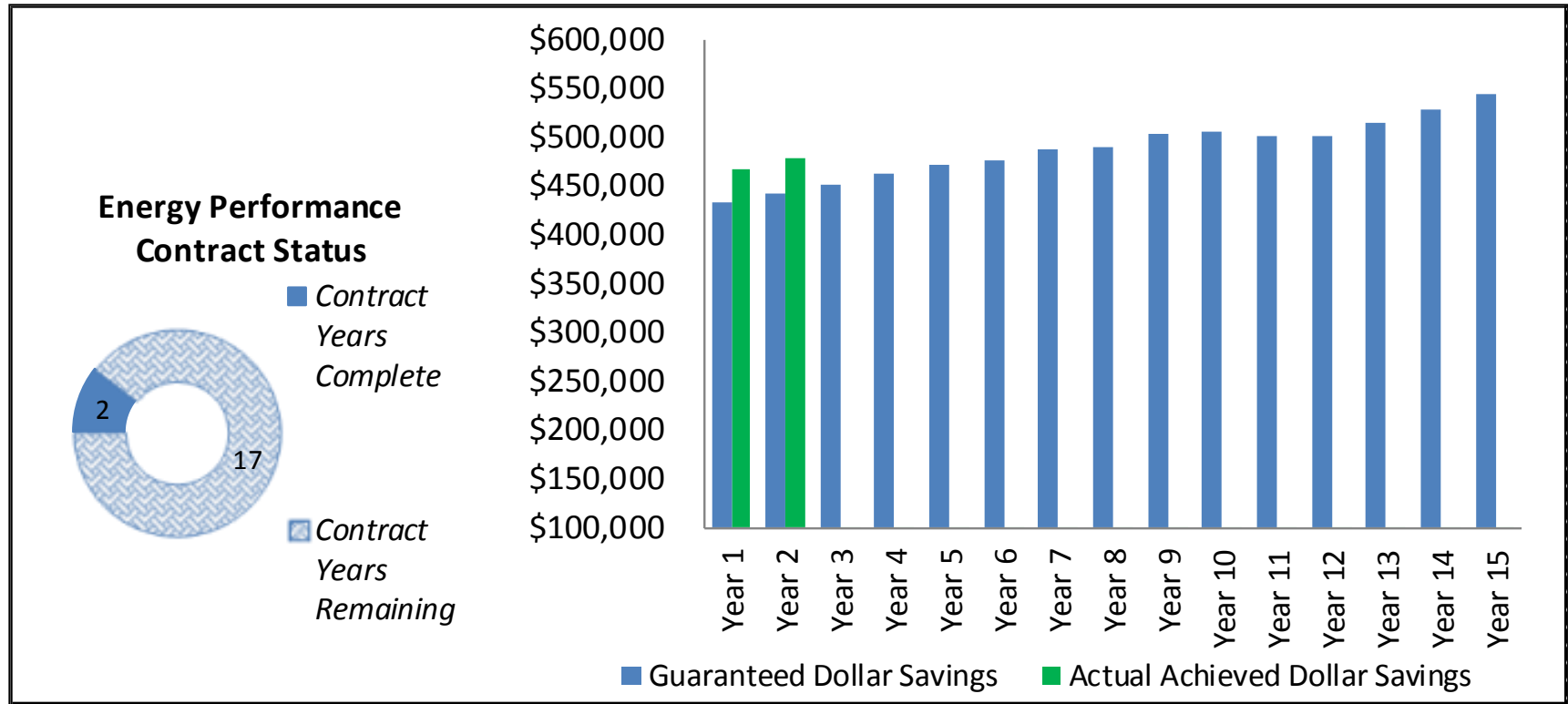
- Environmental Leadership
- Electrical Energy Saved is 2,613,952 kWh
- Which Avoids 1,945 Annual Tons of CO2 Emissions





# Verified Savings Results Performance Year 2

## 2017 Guaranteed & Verified Annual Savings Summary Chart



# Verified Savings Results Year 1 Data

## 2016 Guaranteed & Verified Annual Savings Summary Table

ECM DESCRIPTION	GUARANTEED ANNUAL PROJECT SAVINGS	VERIFIED ANNUAL PROJECT SAVINGS	EXCESS/ SHORTFALL (DIFFERENCE)
CM 1 - Lighting Improvements & Controls	\$ 46,506	\$ 84,405	\$ 37,899
CM 2 - Street Lighting Retrofit	\$ 352,676	\$ 350,381	\$ (2,295)
CM 3 - Low Flow Plumbing Fixtures	\$ 1,296	\$ 1,296	\$ -
CM 4 - City Hall CHW Mechanical & Controls Upgrades	\$ 12,381	\$ 12,381	\$ -
CM 5 - Police Station CHW Mechanical & Controls Upgrades	\$ 1,447	\$ 1,447	\$ -
CM 6 - IT Split System Upgrades	\$ (1,961)	\$ (1,961)	\$ -
CM 7 - Air Curtains at Dock Doors	\$ 6,750	\$ 6,750	\$ -
CM 8 - Demand Controlled Ventilation	\$ 1,381	\$ 1,381	\$ -
CM 9 - Replace DX Equipment	\$ 419	\$ -	\$ (419)
CM 10 - Add Ductless Split System	\$ 10,232	\$ 10,232	\$ -
CM 11 - HVAC Controls Upgrade/Building Management System	\$ -	\$ -	\$ -
CM - 12 Vending Misers	\$ 1,538	\$ 1,538	\$ -
<b>TOTALS</b>	<b>\$432,665</b>	<b>\$ 467,849</b>	<b>\$ 35,186</b>

# Verified Savings Results Year 2 Data

## 2017 Guaranteed & Verified Annual Savings Summary Table

ECM DESCRIPTION	GUARANTEED ANNUAL PROJECT SAVINGS	VERIFIED ANNUAL PROJECT SAVINGS	EXCESS/ SHORTFALL (DIFFERENCE)
CM 1 - Lighting Improvements & Controls	\$ 47,901	\$ 86,937	\$ 39,036
CM 2 - Street Lighting Retrofit	\$ 360,001	\$ 357,638	\$ (2,363)
CM 3 - Low Flow Plumbing Fixtures	\$ 1,335	\$ 1,335	\$ -
CM 4 - City Hall CHW Mechanical & Controls Upgrades	\$ 12,752	\$ 12,752	\$ -
CM 5 - Police Station CHW Mechanical & Controls Upgrades	\$ 1,490	\$ 1,490	\$ -
CM 6 - IT Split System Upgrades	\$ (2,020)	\$ (2,020)	\$ -
CM 7 - Air Curtains at Dock Doors	\$ 6,952	\$ 6,952	\$ -
CM 8 - Demand Controlled Ventilation	\$ 1,422	\$ 1,422	\$ -
CM 9 - Replace DX Equipment	\$ 431	\$ -	\$ (431)
CM 10 - Add Ductless Split System	\$ 10,538	\$ 10,538	\$ -
CM 11 - HVAC Controls Upgrade/Building Management System	\$ -	\$ -	\$ -
CM - 12 Vending Misers	\$ 1,584	\$ 1,584	\$ -
<b>TOTALS</b>	<b>\$442,391</b>	<b>\$ 478,630</b>	<b>\$ 36,239</b>

# Measurement and Verification Method

International Performance Measurement & Verification Protocol (IPMVP) Utilized Per Best Practices and Contract Requirement

- Option A: Partially Measured Retrofit Isolation
  - *Used Primarily for Lighting*
  - *Measured Power Draw*
  - *Statistically Relevant Sampling*
  - *One Time Measurement*
  - *Compared to Original Calculated Manufacturer Specification*
- Option D: Calibrated Simulation
  - *Used Primarily for HVAC, Plumbing, and Building Controls*
  - *Calibrated Hourly Simulation Models*
  - *Calibration Against Actual Energy Use Baseline*
  - *Compares Baseline to Post-Installation Mode*

# Questions?

ConEdison Solutions sincerely wishes to thank the City of Fort Pierce for choosing us to be your energy partner!