

# Innovative Financing for Comprehensive Energy Retrofits



October 14, 2010

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## Sonoma County - A little history

- **2001 - Joined ICLEI**
- **2002 – Made our first climate pledge**
- **2004 - All Cities plus the County adopt aggressive GHG goals**
- **2006 Climate Action Plan approved - beginning of the Energy Manager era**
- **Energy Watch began in early 2009**
- **SCEIP began in March 2009**

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## Strategy for our Climate Goal



- Comprehensive Building Retrofit
- Greening the County Fleet
- Employee commute program



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- Serve Government, Non-profit and Small Business
  - Audits and Evaluations
  - Direct Install
  - Project Evaluation
  - Incentives and Rebates
  - Energy Efficiency Consulting
  - Retro-commissioning
  - Demand Reduction

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## Comprehensive Energy Project



- **\$22,000,000 for multiple EE and the fuel cell**
- **Saves money from Day 1 of installation**
- **Supports Greenhouse Gas reduction goals**
- **Increases Collaboration**
- **Builds Local Economy**

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## Comprehensive Energy Project



- 38 EEMs at 24 buildings
- Lighting retrofits, 20 buildings
- HVAC replace or rebuild in 4 buildings
- HVAC Motors & Controls
- Central Mechanical Plant (CMP) upgrade
- Water retrofit, including MADF and JJC
- 1.4MW Fuel Cell Cogeneration Power Plant



## Comprehensive Energy Project

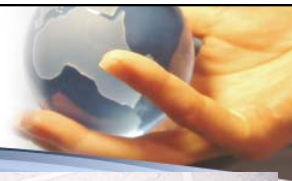


### CEP Process

- RFP to select Energy Services Company
- AIRCON Energy
  - Inventoried County Facilities
  - Prepared Investment Grade Audit,
  - 101 Energy Efficiency Measures (EEM) evaluated
- Obtained Private Loan Financing – based on Investment Grade Audit
- Based on equipment lease model in part

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## Projects Include



### Extensive Lighting Retrofits



- Over 1.3 MWh of savings per year projected
- 250 kW Demand reduction



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## Projects Include



4 new  
Chiller  
w/ VFDs



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## Projects Include



Boiler Upgrades



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## Projects Include

### Water efficiency retrofits saving over:

- Over 20,000,000 gallons/ yr
- 16,112 therms reduction/yr
- 13.8 kW demand reduction
- \$301,617 in energy savings



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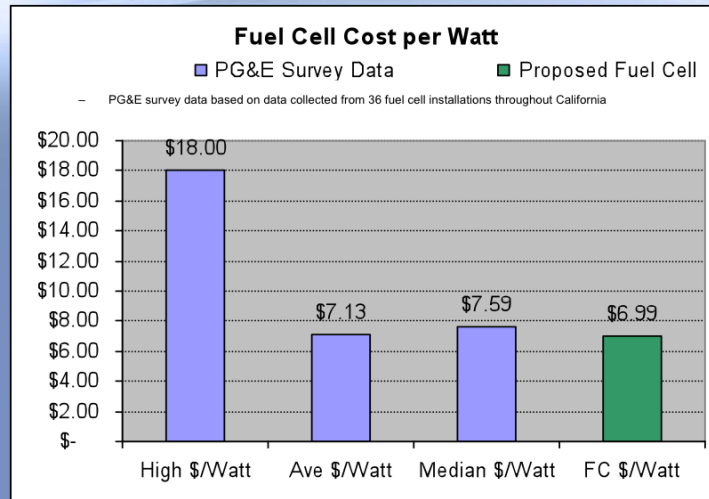
## 1.4 MW Fuel Cell Power Plant

- Generates 10,693,216 kWh/year
- Produces 45 billion BTUs year
- Produces virtually no pollutants
- Reduce GHG emission by 69% versus grid power
- Designated “Ultra-Clean” by CARB



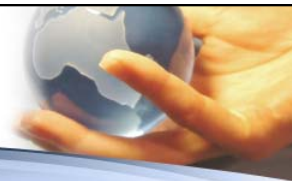
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## Fuel Cell Costs



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## A Recap on Our Process



- Hired an Energy Services Company – Aircon – to do an investment grade audit of almost all of our county facilities
- Obtained a private loan
- Began with lighting work
- Moved on to mechanical systems
- Fuel Cell installation
- Set up a revolving fund to capture efficiency dollars

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# Financing



Directive: "Make Revenue Neutral from Day 1"

# Financing

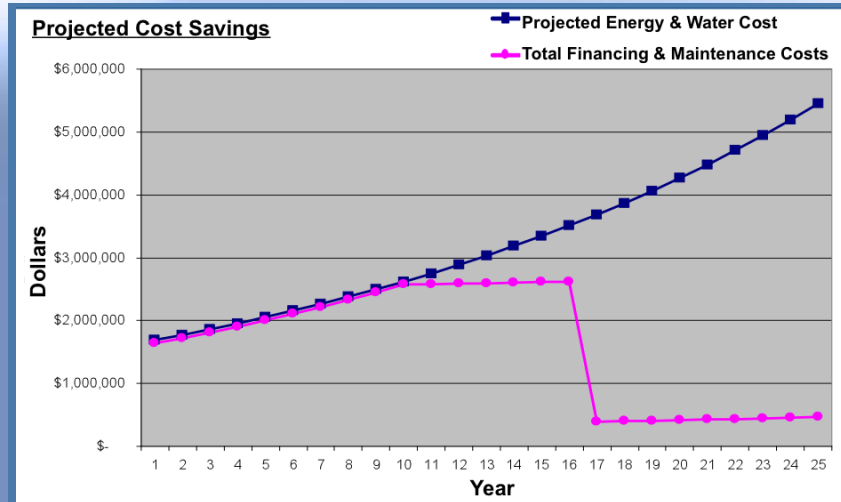


Financing Plan	
Project Cost	\$22,272,029
Incentives, Grants, and Rebates	(\$3,941,226)
Financed Amount	\$18,730,803
Estimated Interest Rate*	4.98%
Repayment Term	16 years
Assumed Closing/Funding Date	1/1/09
Assumed Annual Energy Cost Escalation*	5%
First year of positive cash flow	Year 12
Total payments	\$31,794,615
Total cumulative positive cash flow after 25 years (estimate life of equipment)	\$38,404,231

\* Rates are estimates and are subject to change. 5.4 was max rate



## Cost Savings



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## CEP Expected Results



### Estimated Annual Savings

- GHG reduction 6,135 tons
- Electricity reduction 13,365,226 kWh
- Water savings = 19,138,260 gallons
- Utility savings = \$1,689,316
- No General fund



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## SCEIP



- **Sonoma County Energy Independence Program (Our PACE program)**



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## Additional Funding for Projects



- ARRA
- QCEB Bonds
- On Bill Financing
- Revolving Energy Fund



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## Additional Projects Include



750 kW Solar System with ARRA funds



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## Additional Projects Include



LED Parking lot retrofit with On Bill Financing



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## Additional Projects Include



Airhandler upgrades with QECB



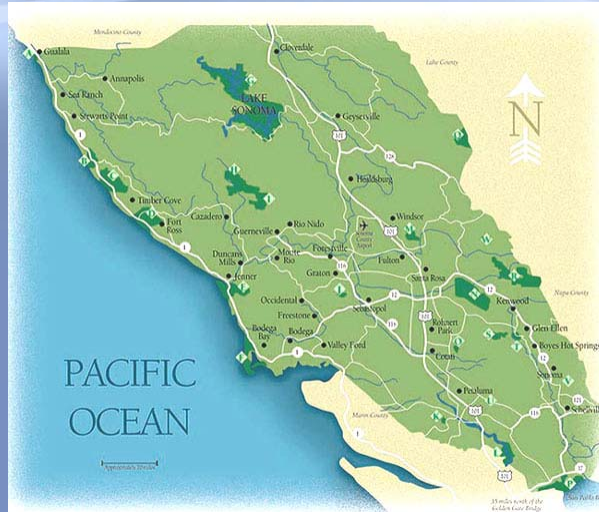
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## Other Projects in Process



- Cities in Sonoma County
- Libraries
- Fire Stations

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Thank you



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