

Innovative Financing for Comprehensive Energy Retrofits



July 20, 2010

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A little history – part 1, some “firsts”

- **2001 - Joined ICLEI**
- **2002 – Made our first climate pledge and needed a plan**
- **2004 - All Cities plus the County adopt aggressive GHG goals**
- **2006 Climate Action Plan approved - beginning of the Energy Manager era**

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Strategy for our Climate Goal – methods for reduction



- Comprehensive Building Retrofit – our CEP
- Greening the County Fleet- hybrids, plug-in hybrids, NEVS, and EVs – charging network
- Employee commute program – easy as pie

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Comprehensive Energy Project



- **\$22,000,000 for multiple energy efficiency and generation Projects**
- **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
- MADF 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 Phase 1

- 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

Projects Include



Extensive Lighting Retrofits



➤ Over 1.3 MWh of savings per year projected

➤ 250 kW Demand reduction



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Projects Include



Chiller Upgrades



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Projects Include

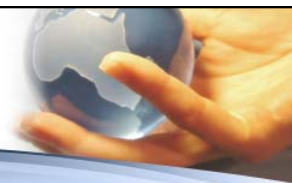


Boiler Upgrades



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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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Projects Include



Variable
Frequency
Drives &
new motors



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1.4 MW Fuel Cell Power Plant

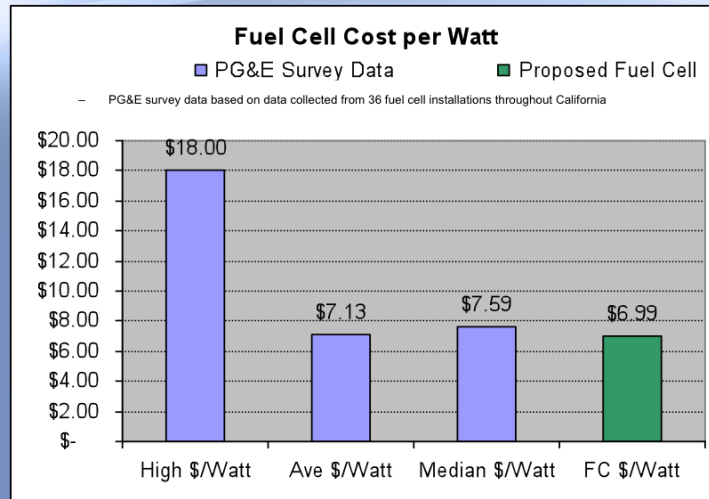


- Generates 10,693,216 kWh/year
- Produces 45 billion BTUs year
- Produces virtually no pollutants
- Reduce GHG emission by 69% versus grid power
- Designated "Ultra-Clean" by CARB



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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 (representing ~90% of our energy use).
- 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

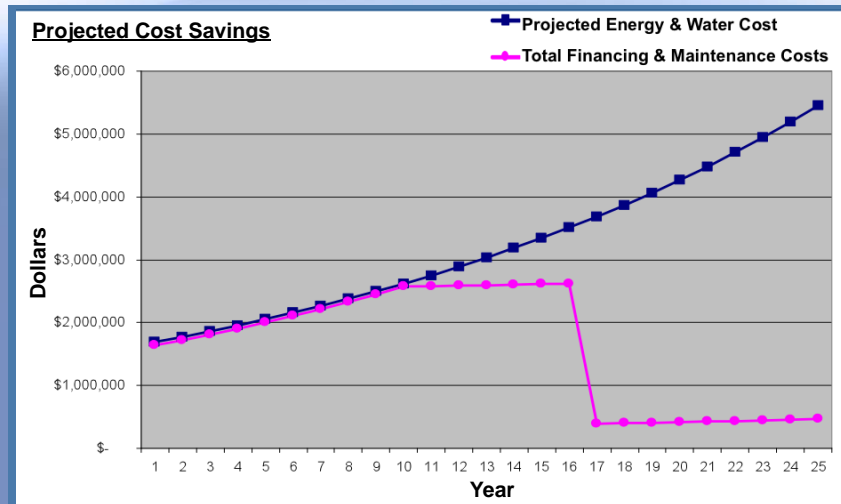


Financing Plan

Project Cost	\$22,272,029
Incentives, Grants, and Rebates	(\$3,941,226)
Financed Amount	\$18,730,803
Estimated Interest Rate*	5.40%
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

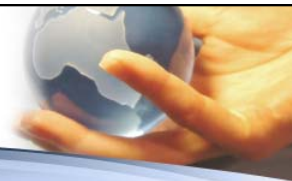
* Rates are estimates and are subject to change. 5.4 was max rate

Cost Savings



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CEP Expected Results



Estimated Annual Savings

- **GHG reduction 6,135 tons/year**
- **Electricity reduction 13,365,226 kWh**
- **Water savings
19,138,260 gallons**
- **Utility cost savings
\$1,689,316 - 1st year- applied to the
financing costs**
- **No negative cash flow – no reliance on
general fund**

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A Little More History – more firsts, and SCEIP



- Met our GHG goals for 2010 for County facilities
- Sonoma County Energy Independence Program Our PACE program

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Additional Funding for Projects



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



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Thank you



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