

Innovative Financing for Comprehensive Energy Retrofits



October 14, 2010

1

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**

2

Strategy for our Climate Goal



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



3



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

4

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**

5

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

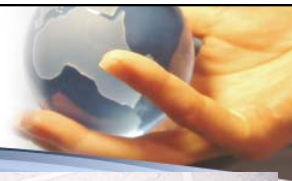


CEP Process

- 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

7

Projects Include



Extensive Lighting Retrofits



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



8

Projects Include



**4 new
Chiller
w/ VFDs**



9

Projects Include



Boiler Upgrades



10

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



11

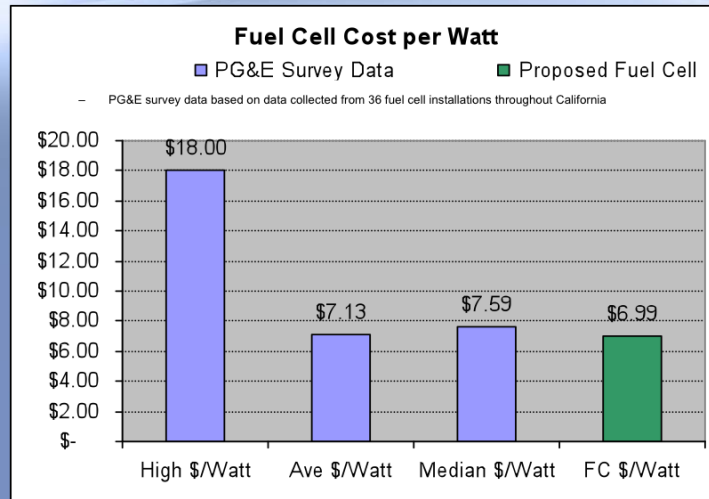
1.4 MW Fuel Cell Power Plant

- 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



12

Fuel Cell Costs



13

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

14

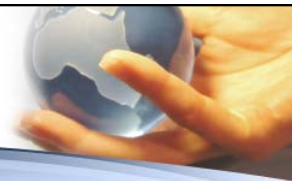
Financing



Directive: “Make Revenue Neutral from Day 1”

15

Financing



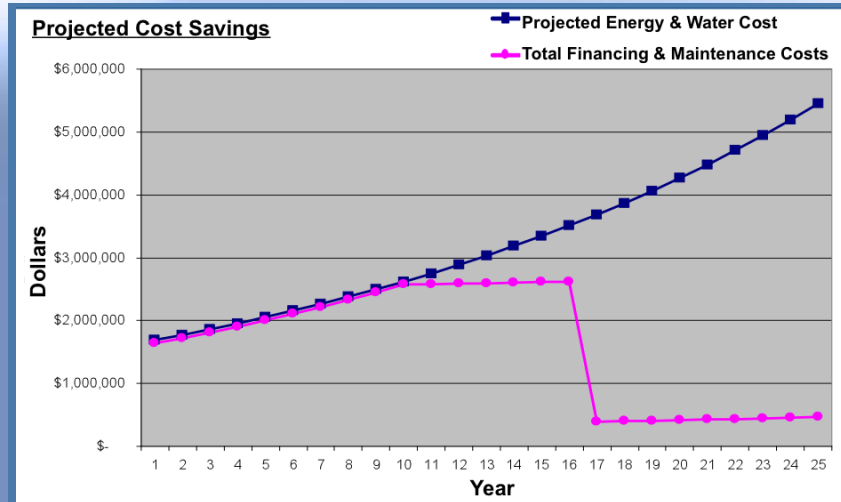
Financing Plan

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

16

Cost Savings



17

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



18

SCEIP



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



19

Additional Funding for Projects



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



20

Additional Projects Include



750 kW Solar System with ARRA funds



21

Additional Projects Include



LED Parking lot retrofit with On Bill Financing



22

Additional Projects Include



Airhandler upgrades with QECB



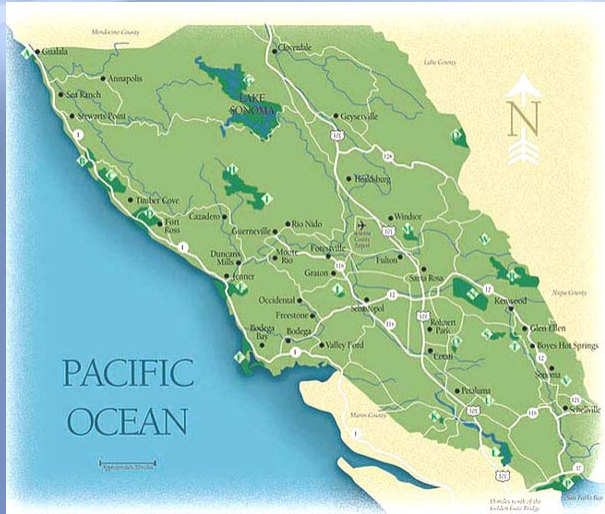
23

Other Projects in Process



- Cities in Sonoma County
- Libraries
- Fire Stations

24



25



Thank you



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26