



A  Sempra Energy utility®

California Green Summit

Randy Brown

Technology Development Programs

Southern California Gas (SoCalGas®)

- Regulated subsidiary of Sempra Energy
- Nation's largest natural gas distribution utility
- Serves 20.9 million customers through 5.8 million meters in more than 500 communities
- Service territory from Visalia to Mexican border – approximately 20,000 square miles



SoCalGas Fuel Cell History

- SoCalGas has been involved in fuel cell RD&D for over 40 years, with a total investment in excess of \$20 million.
- Funded basic research into both stack and reformer technologies
- Participated in 12.5 and 40 kW demonstration programs in the 1980's
- Purchase, installed, and operated ten 200 kW units in the 1990's
- Currently demonstrating a variety of both large and small units in our service territory.



Current Projects

- Demonstrating six 5kW PEM units in commercial and residential applications
- Two 300 kW demonstrations, one at the National Fuel Cell Research Center and one at the Orange County Sanitation District
- A 5 kW PEM unit at our Energy Resource Center in Downey, CA
- A small Solid Oxide unit at our Engineering Analysis Center in Pico Rivera



Current Fuel Cell Incentives

- 30% Federal Investment Tax Credit
- 2010 SGIP
 - \$2.50/W for units powered by natural gas
 - \$4.50/W for units powered by renewables including “directed biogas”
 - As of December 2009 completed 1,299 on-site generation projects, including 25 fuel cells (7 renewable fueled, 18 non-renewable fueled)
- 2011 SGIP Awaiting Decision from CPUC
 - Applications received on or after 1/1/2011 were returned
 - Draft for new program out April - May 2011
 - Expect to be performance based (like CSI), not capacity
 - Payout in 6 installments?
 - Total CHP, not just electricity generated



SoCalGas SGIP

Technology	Amount Paid Out \$ millions	MW Output
Fuel Cell	\$19.8	5.2
Gas Turbine	\$1.8	12.1
IC Engine	\$27.1	51.9
Microturbine	\$4.9	6.5
Photovoltaics	\$31.6	13.4
Total	\$85.1	89.1



Gill's Onions

- Project Cost: \$10.8 million
- SGIP: \$2.7 million
 - \$4.50/ W for biofuel feedstock
- \$499,000 from CEC
- \$3.2 million ARRA
- \$1.8 million ITC
- 5 - 6 year payback
- 2 300 kW fuel cells
- Provides 100% of base-loaded electricity requirement
- Immediate savings in energy and avoided hauling costs of \$1.1 million annually



Jackie Autry Home

- Project Cost: \$93,875
- SGIP Contribution: \$25,000
- 2.5 kW fuel cells
- Electrical Bill reduced by 40%
- 3.2 year payback

