



Greening Your World...

**Commercial Fuel Cells**  
**April 20, 2011**



Center for  
**Sustainable Energy**  
CALIFORNIA

## CCSE: Energy Advisory Service

- Energy/Sustainability Consultants
- Energy Planning Services
- Distributed Generation right sizing
- LEED Impacts
- Unbiased, clear options

## Consulting Context

- Dormitory in San Diego
- Private Developer/Owner
- Expedited Permit
- LEED Silver
- 30% Onsite Renewable Generation



## Two Plans; One goal

### Original

- 65-kW microturbine
- 189-kW solar PV
- Met requirements
- No DG-R

### EAS

- 45-kW fuel cells
- 45-kW solar PV
- Met requirements
- Saved \$1M upfront
- Saves \$80k/year

## Real Impacts and Benefits

- Met expedited permit requirements
- Saved \$1M upfront
- Saves \$80k/year
- Participation in Sustainable Communities
- Reduces Demand
- Provides hot water

# Energy Advisory Service

***Empowering clients with objective information and sound analysis to green your bottom line***

We provide feasibility consulting for a variety of needs:

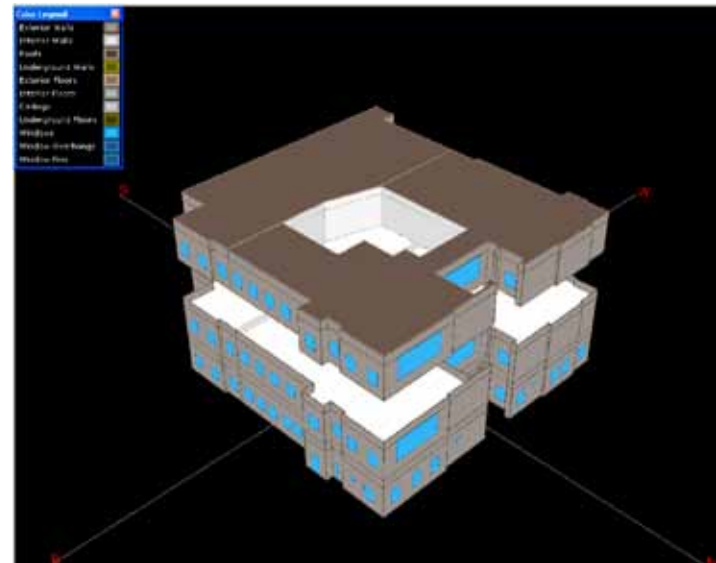
- Energy Efficiency (New/Retrofit)
- Renewable Energy Projects (DG/Utility Scale)
- Measurement and Verification
- LEED, Energy Star, HERS Verifications

## Contact:

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# New Construction Process

- Whole Building Energy Simulation
- 24/7/365 energy use profile
- Tariff Analysis
- Renewables impact



## Specifics for Success

- Fuel Cells counted for permit
- Heat recovery cut hot water demand
- Qualified for Self Generation Incentives
- Qualifies for Tax Credit
- Obtained SDG&E's DG-R Tariff

## Flexibility and Scalability

- 5-kW size scaled precisely
- Synergy with Solar PV
- Sustainable Communities participation
- LEED impacts

## Tariffs Explained

- Commercial customers pay for:
  - Energy (kWh)
  - Demand (kW)
- Prices can vary
  - Time of day
  - Amount of use

# Energy (kWh) vs Demand (kW)

