

Financing Fuel Cells

Warren Leon
Clean Energy States Alliance
August 30, 2011



This Webinar



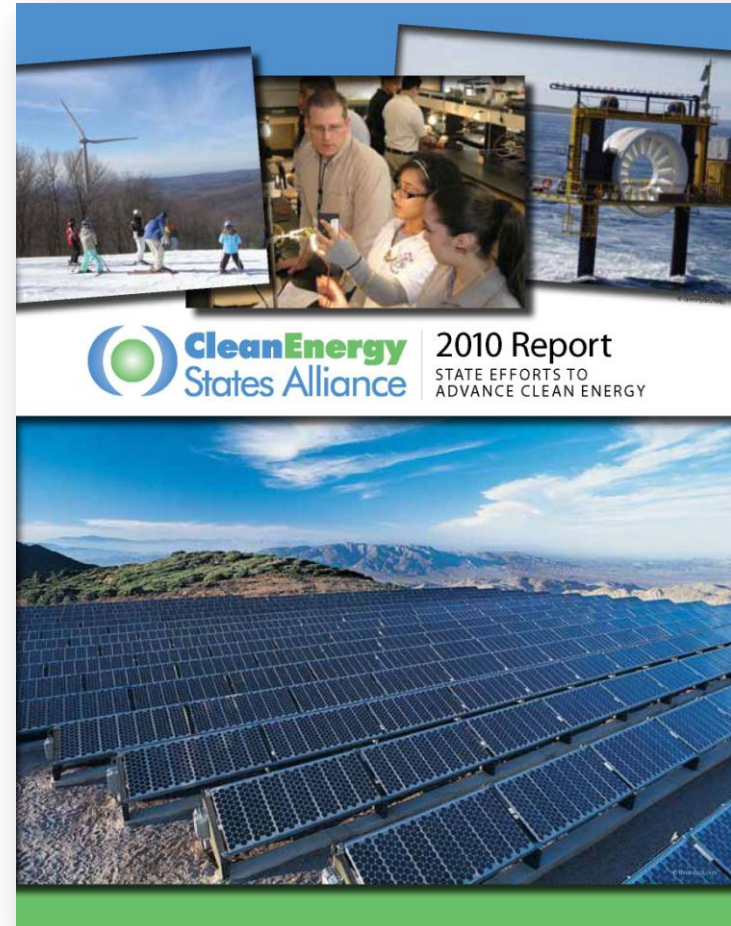
- ▶ Part of a series sponsored and organized by:
 - US Department of Energy Fuel Cell Technologies Program
 - Clean Energy States Alliance
 - Technology Transition Corporation
- ▶ Also briefing papers and materials for state policymakers and others on the Hydrogen and Fuel Cells Project page at www.cleanenergystates.org



What is CESA?

- ▶ A nonprofit coalition of state and sub-national clean energy funds and programs working together to develop and promote clean energy technologies and markets.

www.cleanenergystates.org



Financing Fuel Cells: A Simple Proposition

- ▶ For more rapid commercialization of fuel cells, easy financing is essential
- ▶ Businesses and individuals are hesitant to tie up significant amounts of money in an installation that will pay back gradually
- ▶ State agencies worry about end-users taking on all of the risk of a fuel cell installation
- ▶ The experience of the solar industry shows the importance of financing options



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**Fuel Cell Financing Options
(CESA/DOE Webinar - August 30, 2011)**



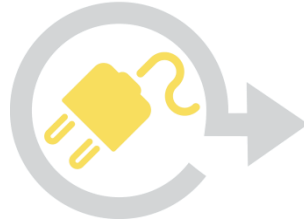
The UTC Power Advantage

Rising energy costs



- Significant Energy savings through:
 - 80 - 90% system efficiency
 - Combined heat and power
- Payback in 3-5 years

Strained Utility Grid,
unreliable power



- Assured power generated on-site:
 - Business continuity
 - Risk mitigation
 - Can serve as emergency shelter

Sustainability and
carbon reduction



- Clean, quiet & virtually pollution free:
 - Reduced emissions
 - Zero water consumption
 - Qualifies for LEED points



Why choose UTC Power for your fuel cell?

- Company history
- Financial stability
- Technology Leadership
- Product support
- Financial incentives
- Flexible options

Fuel Cell Financing Options
(Webinar - August 30, 2011)



United Technologies Corporation

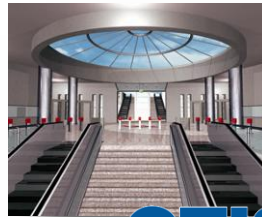
Fortune 50 corporation

\$54.3B in annual sales in 2010

~60% of sales are in building technologies



UTC Power



OTIS



Carrier



UTC Fire & Security



Research Center



Hamilton Sundstrand



PRATT & WHITNEY
DEPENDABLE ENGINES



The United Technologies logo, featuring a stylized blue eagle and the letters 'UTC' in a blue circle.



UTC Power

A United Technologies Company

Paul J. Rescsanski, Manager, Business Finance



UTC Power

About Us



- Fuel cell technology leader since 1958
- ~ 430 employees
- 750+ Active U.S. patents, more than 300 additional U.S. patents pending
- Global leader in efficient, reliable, and sustainable fuel cell solutions

Stationary Fuel Cells



Transportation



Space & Defense



UTC Power

A United Technologies Company

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PureCell[®] Model 400 Solution

Examples of Best Fit Customers: Facilities with 24/7 Power and Heating Demand

Supermarkets



Bottling



Hospitals



Mixed Use



Hotels



Bio-tech/Industrial



Educational Institutions



Utilities





Stationary Fuel Cell Solutions

Flexible fuel cell application and varied experience



**Price Chopper
New York**



**St Helena's Hospital
California**



**World Trade Center
New York**



**Coca-Cola Refreshments
New York**



**Samsung/GS Power
South Korea**



**New Haven Public Schools
Connecticut**



UTC Power

A United Technologies Company

Paul J. Rescsanski, Manager, Business Finance



Customer Support



- 24/7 powerplant monitoring, troubleshooting, maintenance
 - Reducing mean time to repair – increasing customer uptime
- Customer service headquarters located in CT with easy access to on-site engineering and manufacturing support
- Global network of UTC Power service employees
 - UTC Power provides complete 10-year service package



UTC Power Financial Advantage

Financial Incentives

Fuel Cell Incentives:

➤ Federal Investment Tax Credits

➤ Max of \$3,000/kW or 30% of project cost, in effect until 12/31/2016.

➤ 1603 Grant (in lieu of FITC)

➤ Max of \$3,000/kW or 30% of project cost, in effect until 12/31/2011.

➤ Accelerated Depreciation

➤ (100% in 2011, 50% in 2012, 5-Year MACRS)

➤ State Grants/Incentives





UTC Power Financial Advantage

Financing Option

Energy Service Agreement (ESA):

- No upfront capital investment.
- Ownership/maintenance resides with UTCP.
- Inclusive of equipment, installation, maintenance .
 - Includes bumper-to-bumper service; preventive maintenance, scheduled and unscheduled overhauls.
- Pricing reflects monetization of available incentives; FITC, State Grants, etc.
- Fuel not included.



(May pay for use of system with operating energy budget)



Summary

PureCell® Model 400 kW Power Plants Deliver:

- ✓ Energy Savings
- ✓ Reliable Power
- ✓ Carbon, Water and Pollution Reductions
- ✓ Sustainable Attributes (LEED®)

UTC Power Offers:

- ✓ Experienced Project Management
- ✓ Full 24/7 Aftermarket Service
- ✓ Option to Purchase or Lease

Visit www.utcpower.com to learn more



ClearEdge | POWER[®]

Delivering Smart Energy Today[™]

Corporate Overview

August 2011

About ClearEdge Power

- Established in 2003
- Privately funded through:
 - Kohlberg Ventures
 - Applied Materials
 - Artis Capital
 - Sempra
- An Energy Technology Company
 - Design & Manufacture
 - Service & Maintenance
- 75,000 sq. ft. manufacturing floor
- Certifications/Listing:
 - **KGS** - Global Certification
 - **ISO 9001** - Quality Management Systems
 - **ISO 14001** - Environmental Systems
 - **ETL Listing** - Gas NRTL
 - **CSA Listing** – Pending Approval
 - **CE Certification** - Underway (European)



- Designed to address the urgent concerns:
 - Increased demand on grid infrastructure
 - Base Load Power
 - High energy costs
 - Environmental impact

Energy is on the same journey



From This

To This

To This

- More changes in the energy industry in the next 20 years than in the last 100 years
 - Technological innovations
 - Disruptive business models
- Federal and state energy and environmental policies are driving the change
- Customers expect greater choice, control, and sustainability

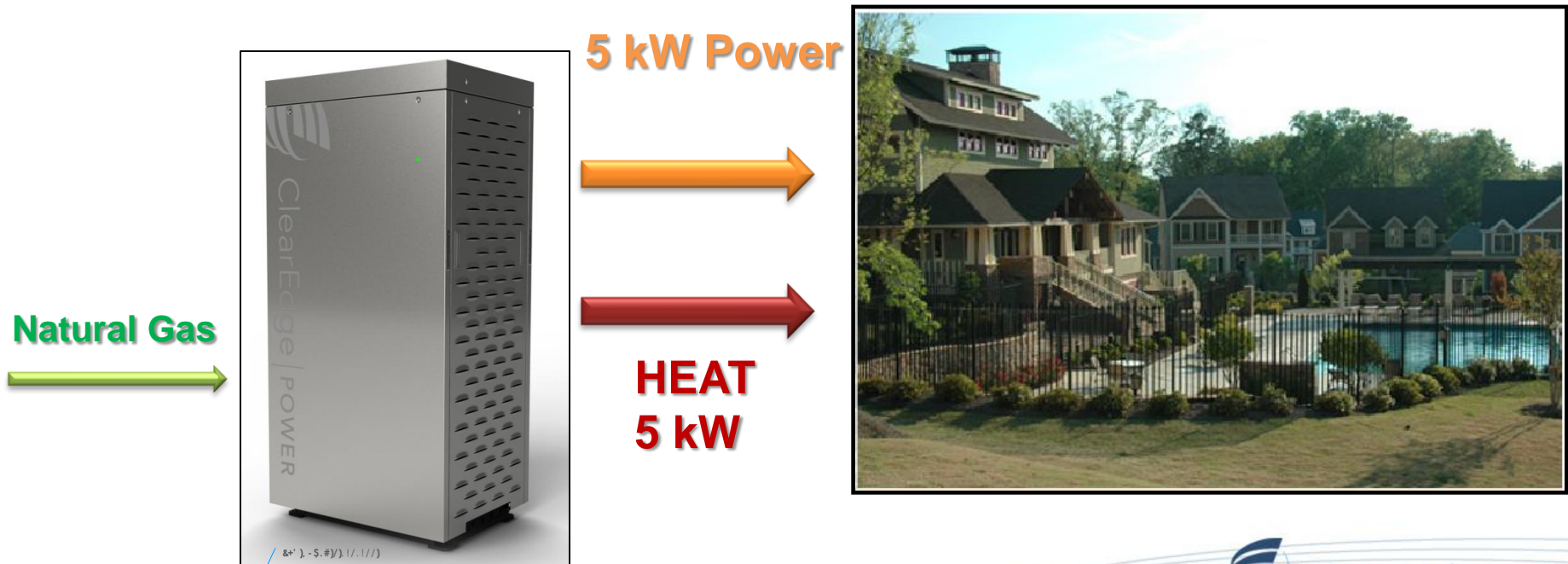
ClearEdge5 – Delivering Smart Energy Today

Combined heat and power 5kWh distributed power system

CE5 converts natural gas into power and heat without burning it

High efficiency, low cost, on-site generation

Smart fuel cell technology



ClearEdge Power Fuel Cell Attributes

Mass
Produced

Safety

Modular

Reliable

Cost
Effective



Natural Gas

Efficient

Lifetime

Combine Heat &
Power

Environmentally
Clean



ClearEdge | POWER®

Delivering Smart Energy Today™

Modular System Architecture

Product Expansion

Market Expansion

Base Unit

CE5

- Base unit – 5kW
- High efficiency
- Low maintenance
- Standard components



CE FT

- 5-10kW applications
- Data center
- Large residential

CE15

- 10-15kW applications
- Light commercial

CEXX

- 20-50kW applications
- Medium commercial



Data Centers

- Data centers
- Server rooms

Residential

- Niche market
- Short sales cycle

Commercial

- Small business
- Hotel
- Retail
- Fitness

International

- Off-grid applications

Utility

- Power generation expansion

All Products Leverage:

- Technology
- Process stability
- Supply chain
- Reliability
- Certifications

Derivative Capability:

- Fault tolerance
- Grid independence
- 208V 3 phase
- 48V DC
- Extreme weather
- Propane compatible

Top Vertical Markets

Multi-Tenant

- Senior Living Centers, Affordable, REIT, Multi-Family

Hospitality

- Hotels, Full Service Multi-Unit Restaurants, Country Clubs and Spas

Education

- Public and private: K-12 Schools, Community Colleges, Universities (including dormitory housing)

Utilities

- Priority – 1. Gas Companies 2. Hybrid Electric & Gas 3. ESCOs

Public Sector

- DOE, DOD, Civilian, Emergency first responders, City/State/Federal Buildings

Residential

- High-end residential

Data Centers

- Small-to-medium size business data centers / server rooms

Industry Segment Leaders

Hampstead Lafayette Hotel

- City of San Diego Historic Landmark
- 8 Unit Install



Village Lindo Paseo Dormitory (SDSU)

- \$1M savings in construction costs
- 9 Unit Install



Irvine Unified School District

- (2) High school facilities / pools
- 12 Unit Install



Cambrian Center

- Low Income Senior Living (HUD)
- 4 Unit Install



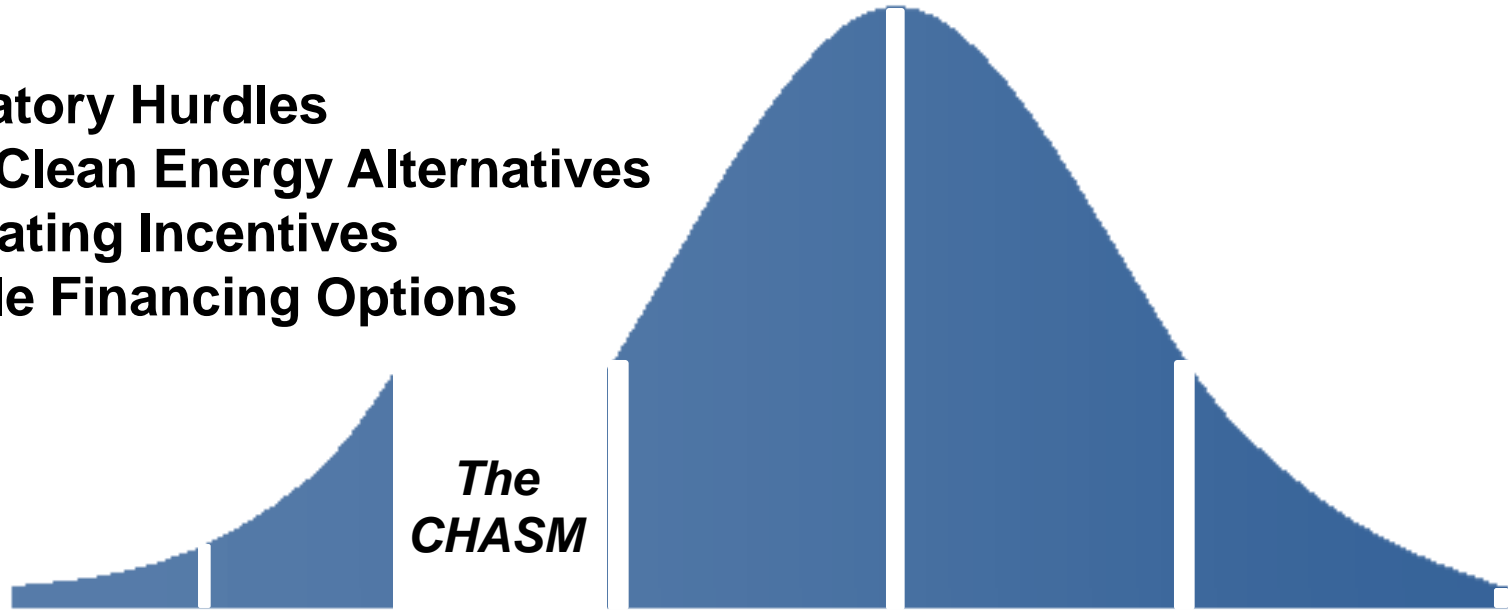
Benefits of Fuel Cells:

- Optimize Energy Efficiency and Lower Costs
- Reduce Harmful Emissions
- Increase Reliability through Distributed Generation
- Reduce Demand on the Grid
- Comply with Regulatory Mandates
- Insulate against Rising Electricity Rates



Key Challenges and Barrier for Fuel Cell Adoption

Regulatory Hurdles
Other Clean Energy Alternatives
Fluctuating Incentives
Flexible Financing Options



Technology
Enthusiasts

Visionaries

*The
CHASM*

Pragmatists

Conservatives

Skeptics

Visionaries

Pragmatists



ClearEdge | POWER[®]

Delivering Smart Energy Today[™]

ClearEdge Power Go-to-Market Model



Customers Expect Choices

- Purchase System
- Lease Systems
- Utility Model

ClearEdge Power Initiatives

- We Sell Systems not Power
- Direct Lease Offering
- Working to Offer 3rd Party Offering
- Work with Partners for PPA's



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