



Stephen G. Whitley
President and CEO
New York Independent System Operator
10 Krey Boulevard
Rensselaer, NY 12144

RE: New York Independent System Operator – Study of Distributed Energy Resources

Dear Mr. Whitley,

ClearEdge Power offers these brief comments and accompanying presentation in PowerPoint format in support of the New York Independent System Operator's interest in exploring the integration of distributed energy resources ("DER") into the New York electricity grid. We would welcome specific inquiries from the NYISO's consultant as it completes its report. ClearEdge Power is a California-based fuel cell company with manufacturing facilities in Oregon and Connecticut. The company produces and installs clean, distributed power systems that scale from 5 kW to multiple megawatts. ClearEdge Power is transforming power generation with innovative solutions that help customers reduce electricity bills, improve energy efficiency and reduce carbon emissions.

The NYISO and its consultant should carefully consider the range of DER and, in particular, the unique features of fuel cells, which can provide continuous and reliable power with a small footprint, low emissions and no need for water. ClearEdge Power fuel cells also are particularly suited to combined heat and power operations and can provide power independently from the grid during emergencies when the grid fails.

ClearEdge Power currently manufactures two modular systems, one with a 5kW output and a larger unit with a 400kW output. Both of these systems can be scaled to meet customer requirements of several kW to multiple MWs. There are approximately 8 MW of our products installed in New York, and we have a pipeline of interested customers. California and New York are the largest natural market for fuel cells; however, California and Connecticut have the highest number of installed megawatts of fuel cells due to effective state support. We also have installations in other states, Korea and Europe.

Fuel cells fit a broad range of applications and customer profiles. Our customers include utilities, hospitals, grocery stores, data and telecommunication centers, multi-use buildings, hotels and universities. Fuel cells are best utilized and most efficient where there is a 24/7 need for power, heat and cooling, although ClearEdge Power systems are also uniquely equipped to provide customers with power based directly on their load needs at any given time, up to the maximum power output of the system. They are especially valued where power interruptions can cause immediate adverse impacts to safety, security and the economics of the facility.

Fuel cell installations are driven by customer demand for environmentally responsible and reliable generation and are supported by federal and state policies. The federal investment tax credit (ITC) and state clean energy standards and incentive programs, in particular, are essential to building the fuel cell industry in the United States. In New York, fuel cells are an eligible technology within the State Renewable Portfolio Standard (RPS) program, which reduces the cost to the consumer of adopting fuel cells as part of their energy mix. Fuel cells have limited dedicated funds via the Customer-Sited energy programs of the RPS and also are eligible to compete with other technologies within the so-called Main Tier of the RPS. However, the funds dedicated to fuel cells are currently dwarfed by the amount dedicated to photovoltaic installations; this limited funding places constraints on the rate of fuel cell installation in New York.

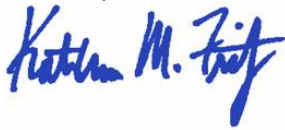
As mentioned previously, ClearEdge Power's fuel cells can be installed to provide electricity alone or installed to use the heat produced as a byproduct of the fuel cell's operation. Using the heat boosts efficiency

significantly and also can provide heat or cooling during grid failures. While most fuel cells to date have been installed behind the utility meter as on-site generation for specific customers, they also can be installed on the utility side of the meter and have a crucial and important role in micro-grids. Fuel cells can be and are used as central generation by utilities and can provide voltage support when placed in strategic locations. Given their minimal footprint and beneficial environmental profile, they are easy to site at existing substations and in urban environments.

Interconnection rules and utility tariff structures also impact the economics and the installation of fuel cells. ClearEdge Power continues to advocate on behalf of streamlined interconnection, net metering (parity for fuel cells in comparison with other environmentally advantageous technologies), and removal of detrimental and inappropriate demand charges.

Fuel cells offer unparalleled reliability and resiliency with environmental benefits and are scalable to match customer's needs. We support the NYISO's efforts to understand the role that DER in general, and fuel cells in particular, can play in developing a truly smart and efficient grid to replace our aging electricity delivery infrastructure.

Sincerely,



Katrina Fritz
Vice President for Corporate Strategy and External Affairs
Katrina.Fritz@clearedgepower.com
860-338-1303



CLEAREDGE POWER, INC. PURECELL® FUEL CELL SYSTEMS

February 7, 2014

ABOUT CLEAREDGE POWER

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.

- Established in 2003
- Headquartered in Sunnyvale, California
- Acquired UTC Power February 2013
 - Over 50 years of fuel cell experience
- Facilities in Connecticut and Oregon
 - South Windsor, CT (150,000 sq. ft.)
 - Hillsboro, OR (86,000 sq. ft.)
- U.S. field offices
- Global presence with international offices in South Korea and Austria
- ISO 9001:2008 / 14001:2004 Certified



Combined Heat & Power (CHP) Fuel Cell generation systems



400 kW
Infrastructure
Systems



5 kW
Local Load
Systems

Multiple 400 kW or 5 kW systems can
be combined for higher capacities

Efficient

- Up to 90% CHP efficiency
- Low life cycle costs
- Abundant natural gas

Secure

- Continuous, distributed power
- Grid-independent operation
- Flexible indoor/outdoor installation

Clean

- Clean, quiet & virtually pollution free
- Zero water consumption
- Qualifies for 4-6 LEED points

ENVIRONMENTAL RESPONSIBILITY

Average Annual Savings[†] With PureCell[®] Model 400

California Example

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.

CO₂



610 metric tons**

141 acres

NO_x



1.27 metric tons**

73 cars

H₂O



1,200,000 gallons

2 Olympic pools

[†] Assumes 400 kW baseload operation with 50% heat utilization to displace facility natural gas heating use.

CO₂ emissions compared to the utility build margin emissions factors used in the Green-e Climate Protocol for Renewable Energy. Methodology per WRI Project Protocol and supported by the EPA's Combined Heat & Power office.

H₂O savings compared to electrical utility water consumption as reported by the U.S. Geological Survey

** 1.34 million lbs CO₂ , 2,800 lbs NO_x.

CUSTOMER VALUE PROPOSITION

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.

Industry Challenge

Electric Generation Capacity

Transmission Constrained

Rising Utility Costs

Grid Reliability

Emission Standards

Current Dynamic

Large capital expense of adding centralized power plants

Difficult and costly to add transmission lines to existing population dense locations

Light commercial customers pay \$0.15 - \$0.19 / kWh and residential pay double

Increasing power disruptions, rolling brown / blackouts in major cities

Currently largest producer of air pollution on the planet



Modular approach matches current demand and growth precisely

Distributed generation eliminates cost and need for transmission lines

Total cost of ownership is \$0.12 / kWh for typical light commercial customer

System provides continuous power, even in a prolonged grid outage

System eliminates NOx, SOx, VOCs, PM and reduces GHG by 40%

TARGET MARKETS

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.

Model 5

**Multi-unit
Residential**



Restaurants



Model 5 & Model 400

**Technology Centers
/ Telecom**



Campuses



Offices



Retail



Utilities



**Mixed Use/
Hotels**



Model 400

Healthcare



**Industrial/Life
Sciences**



DIVERSE CUSTOMER BASE

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.



Bentall
Kennedy



BEACON CAPITAL
PARTNERS



JohnsonDiversey
Clean is just the beginning



City of New Haven



New Haven School Change
NEW HAVEN PUBLIC SCHOOLS

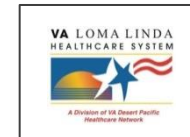


The
LAFAYETTE

Adventist
Health



New York Power
Authority



- Over 20 years of field experience
- Over 500 systems in 19 countries
- Over 11 million hours of fleet operation
- Fleet leader over 90,000 hours

FLEXIBLE INSTALLATIONS

PureCell® Model 5 and Model 400 Systems

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.

Indoor
(360 State St.,
New Haven, CT)



Outdoor
(Roger's Gardens,
Corona Del Mar, CA)



Rooftop
(Star Market,
Chestnut Hill, MA)



Multi-Megawatt Sites
(GS Power,
Anyang, South Korea)



SECURE POWER YOU CAN COUNT ON

Grid Independent Capability

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.



October 2012 Hurricane Sandy

- All 23 PureCell System Model 400 fuel cells in the impacted areas were operational during the storm
- Stop and Shop (Torrington, CT) transitioned to grid independent mode automatically providing the store power throughout the storm



CT October 2011 Winter Storm

- South Windsor High School serves as community shelter
- Whole Foods Market prevents costly food spoilage
- CT Juvenile Training Facility operates continuously through prolonged power outage

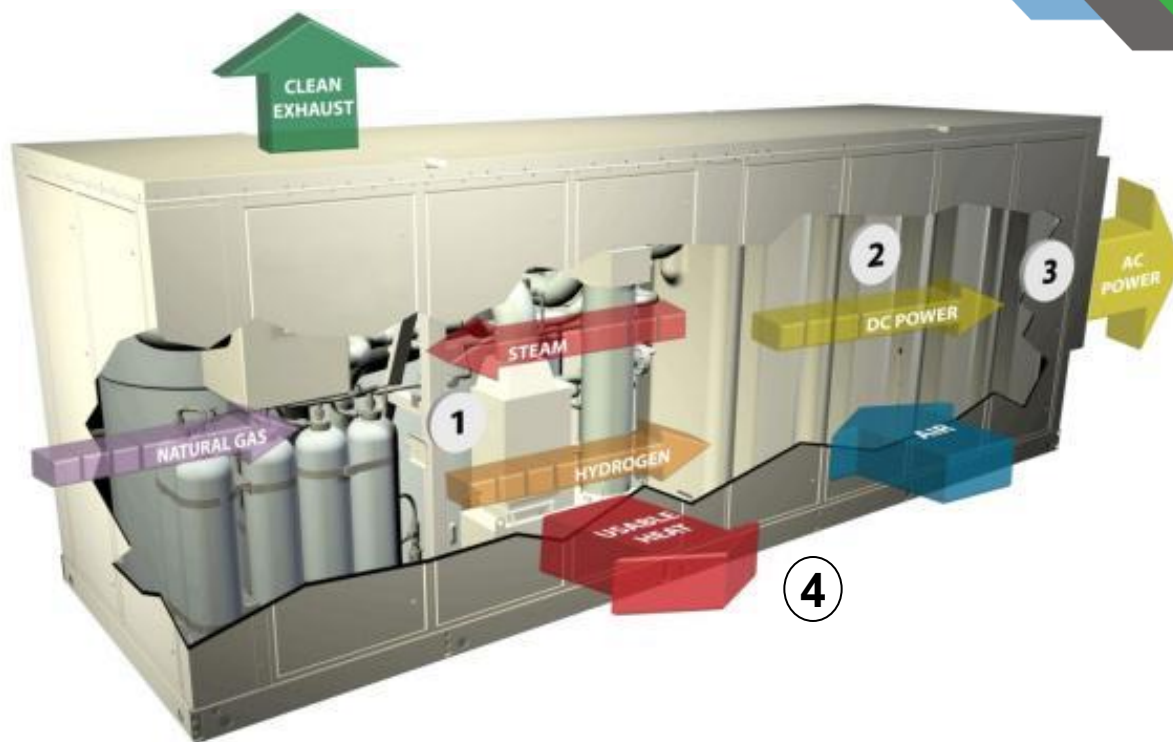


San Diego September 2011 Blackout

- Albertsons supermarket remains open for business
- Perishable inventory protected
- One of the few retail stores in the valley operating

PURECELL® SYSTEM PROCESS FLOW

ENERGY SOLUTIONS:
CLEAN. CRITICAL. SECURE.



1

Fuel Processor

Converts natural gas fuel to hydrogen

2

Fuel Cell Stack

Generates DC power from hydrogen and air

3

Power Conditioner

Converts DC power to high-quality AC power

4

Heat Recovery

On-board heat exchangers for recovering useful thermal energy

PureCell® Model 400 System shown

Analogous process flow for PureCell® Model 5 System

PURECELL® MODEL 400 SYSTEM – KEY FEATURES

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.



Output and Efficiency

- 400 kW baseload electric output
- 1.5 MMBtu/hr heat output
- 42% electrical efficiency
- Up to 90% system efficiency

Design Features

- 10 year cell stack life
- Grid-independent operation
- Electric load following
- Multi-megawatt capacity
- Low pressure natural gas fuel
- Low noise and vibration
- Ultra-low emissions (CARB 2007 Certified)
- Certified to ANSI FC-1, UL1741

Performance

- Leverages over 50 years of fuel cell technology with 20 years field experience
- Over 1,200,000 hours of field operation
- Fleet availability – 96%
- No shutdown required for scheduled PM tasks

PURECELL® MODEL 5 SYSTEM – KEY FEATURES

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.



Output and Efficiency

- 5 kW baseload electric output
- 21,000 Btu/hr heat output
- 40% electrical efficiency
- Up to 90% system efficiency

Design Features

- 10 Year cell stack life
- Multi-system redundant continuous operation
- Grid-independent operation
- Low pressure natural gas fuel
- Low noise and vibration
- Ultra-low emissions
- Certified to ANSI FC-1, UL1741

Performance

- Leverages over 50 years of fuel cell technology with 20 years of field experience
- Based on field experience with 120+ unit test deployment
- Fleet availability – 98%
- No shutdown required for scheduled PM tasks

CUSTOMER STORY: VERIZON COMMUNICATIONS OVERVIEW

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.



"This is a natural evolution of our sustainability efforts and of our use of alternative energy to power a variety of our facilities. These projects will reduce our carbon footprint, relieve demand on the electrical grid and enhance the resiliency of our proven service continuity."

*James Gowen
Chief Sustainability Officer
Verizon*



Project Details

- 11 sites – CA, NY, NJ
- 8.8 MW total installation
- 400 kW – 2.0 MW per site
- Grid-connect operation
- Electric-only and Combined Heat and Power
- Contracted in April 2013, 6.8MW running at full power by EOY 2013

Benefits

- Overall Efficiency- 42-65%
- GHG Savings- 6000 MT/yr
- 60MM kWh/year of baseload power power generation
- Grid-paralled power for Central Offices, Datacenters and Administration

Reference: <http://newscenter.verizon.com/corporate/news-articles/2013/04-30-green-energy-project/>

PURECELL® MODEL 400 SYSTEM

1211 Avenue of the Americas (New York, NY)

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.



“We weren’t interested in a token project. We wanted to do something that was significant in terms of sustainability and efficiency. The PureCell model 400 system at 1211 Avenue of the Americas in New York City accomplishes both, offering a strong example of how major urban office buildings can economically reduce carbon emissions through leading-edge technology. It was a win-win for us.”

*Al Scaramelli
Senior Vice President
Beacon Capital Partners, LLC*

- Commercial operation began in November 2011
- Large scale mixed-use office building
- Fuel cell operates at max power output 24/7
- 100% of electric output used by Fox News studios
- Thermal energy utilized for building space heating
- Provides emergency power to lobby, covered arcade and lobby-level restaurant

PURECELL® MODEL 400 SYSTEM

Coca-Cola Refreshments USA (Elmsford, NY)

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.



- Installed October 2010
- Meets 35% of facility's energy and heat requirements
- Reduces facility's carbon footprint by 2,635 metric tons annually when compared to non-base load utility powerplants
- Saves millions of gallons of water each year

"Coca-Cola is focusing on implementing green innovations and initiatives to reduce our Company's overall environmental footprint at each step of our operations. Use of these fuel cell systems at our Elmsford facility is one way in which we are working to achieve our 2020 environmental goals."

*John Lacey
Sales Center Manager
Coca-Cola Refreshments USA*

PURECELL® MODEL 400 SYSTEM

The Octagon (Roosevelt Island, New York, NY)

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.



“Last month, the utility bill was \$45,000 less than this month the prior year. There are a lot of reasons to use these – environmental, efficiency, and energy policy issues – but there’s a sort of basic economic motivation to it too.”

*Architect Bruce Becker
President, Becker + Becker*

- First residential complex in New York to use a fuel cell
- LEED Silver certified building; 500 residential units
- Model 400 will meet 50 percent of building’s power needs
- Thermal output to be used for heating, cooling and hot water
- Expected emissions reduction: 455 metric tons CO₂ and 3.2 metric tons NO_x

PURECELL® MODEL 400 SYSTEM

St. Francis Hospital (Hartford, CT)

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.



- Thermal output will offset fuel used by central steam plant and domestic hot water
- Grid independent assuring backup power during an emergency
- Approximately 950 metric tons of CO₂ and 2 metric tons of NO_x emissions will be avoided
- ~ 3.8 million gallons of water will be saved annually

CUSTOMER STORY: GS POWER / SAMSUNG EVERLAND

Anyang, South Korea – Installed August 2010

ENERGY SOLUTIONS:
CLEAN. EFFICIENT. SECURE.



GS Power / Samsung Everland

- 4.8 MW district energy solution in Anyang, South Korea
- 12 Model 400s sited outdoor
- Grid-connect operation with 97% capacity factor
- 100% heat recovery for district heating

“With the prolonged effects of high and unstable oil prices on businesses and heightened environmental concerns and regulations worldwide, I am certain more businesses will show interest in renewable energy and other clean energy initiatives such as fuel cells.”



*Robin Park
President and Chief Executive Officer
Samsung Everland*