

# *Company Update*

September 2019



# Safe Harbor Statement

This presentation contains forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including, without limitation, statements with respect to the Company's anticipated financial results and statements regarding the Company's plans and expectations regarding the continuing development, commercialization and financing of its fuel cell technology and business plans. All forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those projected. Factors that could cause such a difference include, without limitation, changes to projected deliveries and order flow, changes to production rate and product costs, general risks associated with product development, manufacturing, changes in the regulatory environment, customer strategies, unanticipated manufacturing issues that impact power plant performance, changes in critical accounting policies, potential volatility of energy prices, rapid technological change, competition, and the Company's ability to achieve its sales plans and cost reduction targets, as well as other risks set forth in the Company's filings with the Securities and Exchange Commission (SEC). The forward-looking statements contained herein speak only as of the date of this presentation. The Company expressly disclaims any obligation or undertaking to release publicly any updates or revisions to any such statement to reflect any change in the Company's expectations or any change in events, conditions or circumstances on which any such statement is based.

The Company may refer to non-GAAP financial measures in this presentation. The Company believes that this information is useful to understanding its operating results and assessing performance and highlighting trends on an overall basis. Please refer to the Company's earnings release for further disclosure and reconciliation of non-GAAP financial measures. (As used herein, the term "GAAP" refers to generally accepted accounting principles in the U.S.)

*The information set forth in this presentation is qualified by reference to, and should be read in conjunction with, our Annual Report on Form 10-K for the fiscal year ended October 31, 2018, filed with the SEC on January 10, 2019 and our earnings release for the third quarter ended July 31, 2019, filed as an exhibit to our Current Report on Form 8-K filed with the SEC on September 9, 2019.*

# The Global Leader in Fuel Cell Technology

## Global leader in fuel cell technology since 1969

- Danbury, CT - Corporate, R&D
- Torrington, CT – Manufacturing, Service
- Taufkirchen, Germany – Manufacturing, Service
- South Korea – Manufacturing, Service



## Global Customers



- Serving utilities, industrial, commercial and large municipal customers with both utility-scale, on-site power generation, and micro-grid applications
- FuelCell's platform cells are extremely efficient, non-combustion technology that can achieve zero carbon, emit negligible NOx, SOx and particulate pollutants.
- FuelCell's Advanced Technologies addressing needs in:
  - Carbon capture
  - Local hydrogen production for transportation / industry
  - Long duration energy storage
- Unmatched experience
  - Over 9 million Total MWH generated by SureSource™ plants around the world (As of July 2019)

# Global Footprint Strategically Optimized for Regional Industry Demand

## Global presence and agility

- Demonstrated record entering new global markets, with successful record commercializing products, developing and operating new facilities and operating power plants
- Proven repeatable, scalable and certified manufacturing processes for ramping up quality manufacturing facilities globally
- Successfully reduced costs and de-risked production through supply chain leverage, multi-sourcing and global supply chain experts

## FuelCell's strong global footprint strategically located in proximity to large existing regional markets



Corporate office, R&D and global service in Danbury, CT  
Manufacturing facilities in Torrington, CT; Taufkirchen, Germany; and via licensee in Pohang, South Korea  
More than 50 installations on 3 continents



# Carbonate Fuel Cell Systems



Individual fuel cell &  
400-cell fuel cell stack



Single-stack Module  
250 – 400kW



Four-Stack  
Module 1.4MW



250 - 400kW  
**SureSource250™**  
**SureSource400™**  
47% Electrical Eff.  
up to 90% Total Eff.



1.4 MW  
**SureSource1500™**  
47% Electrical Eff.  
up to 90% Total Eff.



2.8 MW  
**SureSource3000™**  
47% Electrical Eff.  
up to 90% Total Eff.



2.35 MW  
**SureSource  
Hydrogen™**  
2.35 MW Power plus  
1270 kg/day Hydrogen



3.7 MW  
**SureSource4000™**  
60% Electrical Eff.  
Up to 80% total Eff



59 MW



11 MW

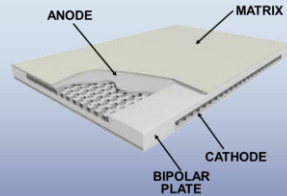


15 MW

Larger Scale Fuel Cell Parks

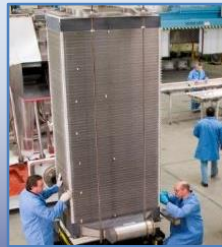
# Fuel Cell Manufacturing Expertise

FuelCell utilizes proprietary designs and processes, along with state-of-the-art manufacturing equipment, to produce the fuel cell components at the core of the Company's SureSource systems



Individual fuel cell components

1



400 components are used to build one 350kW fuel cell stack

2



4 stacks combined to build a 1.4MW plant

3



The stacks are enclosed, creating the fuel cell module

4



Two modules are used for a 2.8MW power plant

5

SureSource 3000 Fuel Cell Production Flow

# FCE Value Drivers

## FuelCell's Business Segments & Revenue Mix

### Product Sales

*Sell projects & systems directly to customers*

### Service Offerings

*Long-term service agreements associated with all projects & systems sales*

### Generation

*Develop and own projects, and sell power to utilities and end-users under long-term power purchase agreements*

### Advanced Technologies

*Private & publically funded research activities advancing fuel cell technology*

## Differentiated Product Offerings

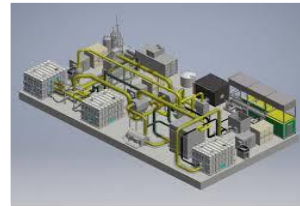
**SureSource 1500 –  
1.4MW Production**



**SureSource 3000 –  
2.8MW Production**



**SureSource 4000 –  
3.7MW Production**



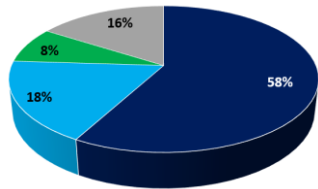
## Advanced Technologies

**SureSource  
Carbon Capture  
(ExxonMobil  
Partnership)**

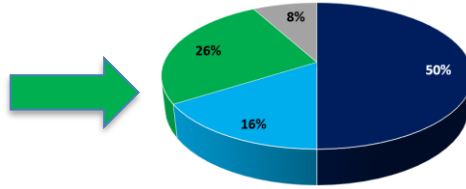
**SureSource Hydrogen**

**Solid Oxide  
Fuel Cells**

— FY18 Revenue Mix —



— Illustrative FY23 Revenue Mix —



*FuelCell is actively growing its owned Generation portfolio, which has positioned the business for substantial growth through recurring revenue and cash flow over the next five years*

# Multiple Use Cases

FuelCell's technology has been successfully deployed in these applications:

Provides electric utilities with an **economical, clean and scalable solution** that supplies power where needed, enhancing grid resiliency

Noeul Green Energy  
Seoul, South Korea



FuelCell's on-site, customer-side-of-the-meter applications, quietly supply **continuous, clean and affordable power at the point of use** for C&I, hospitals, universities, office buildings, industrial parks, and more



California State University  
- East Bay  
Hayward, CA

Bridgeport Fuel Cell Park  
Bridgeport, CT



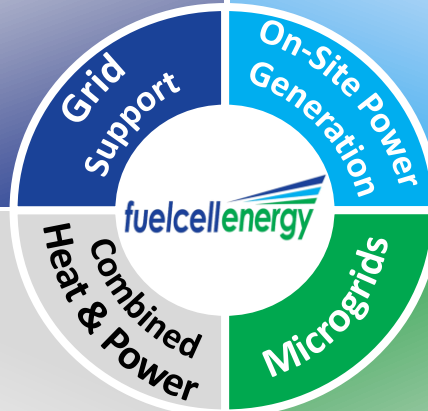
Multi-faceted platform delivers **electricity and usable high quality heat or steam** Which can be used for heating buildings and meeting hot water needs or for cooling using conventional absorption chilling equipment



University of Bridgeport  
Bridgeport, CT

## Micro-grid ready

The SureSource solution is configurable for micro-grids, powering the grid during normal operation, and disconnecting from the grid in the event of a disturbance (critical for facilities where reliable continuous power makes the difference)





# Baseload is the Largest Segment of the Market

## U.S. Electricity Generation (2016)

U.S. Electricity Generation  
4,076,675,000 Megawatt hours (MWh)

U.S. Electricity Baseload  
3,139,039,750 MWh

~85% of fuel cell  
capacity has come  
online since 2013

Alternative Energy Baseload  
1,100,000,000 MWh

Fuel Cell Baseload  
810,000  
MWh

Baseload is the largest  
segment of the U.S.  
electricity market

Source: U.S. Energy Information Administration (EIA), April 2018.

Note: Alternative energy includes Hydro power, nuclear power, geothermal, bio power and fuel cell energy.

Note: Fuel cell baseload assumes all fuel cell electricity production is baseload production.

1) 1 MW FCEL Energy from SureSource 3000 = 122 m<sup>2</sup> and 1MW Solar PV = 22,257 m<sup>2</sup>.

## Power Density



2.8MW FCEL Energy  
(SureSource 3000)

2.2MW Solar PV Facility

Solar Requires  
**~18,000% More Space or 380  
acres more** than FCEL to  
generate 1MW of Power<sup>1</sup>



**FCEL's power density is well suited  
to customer on-site solutions**

# Application Examples

## Grid Support with CHP

- Power sold to grid
- Heat sold to district heating system
- 59 MW on only 5.2 acres
- Only 14 mo. installation
- World's largest fuel cell park



## Resiliency for Pharma

- 5.6 MW with steam for company campus
- Predictable power solving grid quality issues
- Immediate savings vs. grid
- Sustainability



## Grid Support / Urban Redevelopment

- Power sold to grid
- Enhance resiliency
- Brownfield revitalization
- 15 MW on 1 ½ acres
- Only 12 mo. installation



## Sub-MW CHP for Hospitality

- 400kW with hot water production for water and space heating
- Clean baseload power
- No noise and no emissions
- Immediate savings vs. grid
- Only 9 mo. installation



# Modern Urban Distributed Energy

“These [fuel cell] projects aren’t just good for the environment, they are good for our economy. They create jobs. They help reduce asthma and breathing ailment rates for kids. They grow our tax base.”

*Bridgeport Mayor Bill Finch (term expired Jan-2016)*



UNIVERSITY OF  
BRIDGEPORT

Clearway

Type: On-site CHP  
Size: 1.4 MW  
Owner: Project investor

“Sustainable and affordable energy is an increasingly important component of the new energy mix at the University of Bridgeport.”  
Neil A. Salonen President,  
University of Bridgeport



**fuelcellenergy**

Type: Grid support  
Size: 14.9 MW  
Owner: Utility – PPA structure

The addition of this project asset to FCE’s generation portfolio is a major step towards our long-term strategy to diversify FCE’s generation portfolio, transitioning FuelCell Energy into a services focused business that delivers recurring revenue with strong EBITDA margins



Type: Grid support  
w/ solar array  
Size: 2.8 MW  
Owner: Utility – rate base

“Purchasing these fuel cell power plants supports our goal of investing in renewable distributed generation to **enhance the reliability of our power delivery system** and offer our customers cleaner energy.”

James P. Torgerson,  
President & CEO,  
Avangrid

The FuelCell Energy fleet in Connecticut alone avoids more than 20,000 tons per year of CO<sub>2</sub> emissions

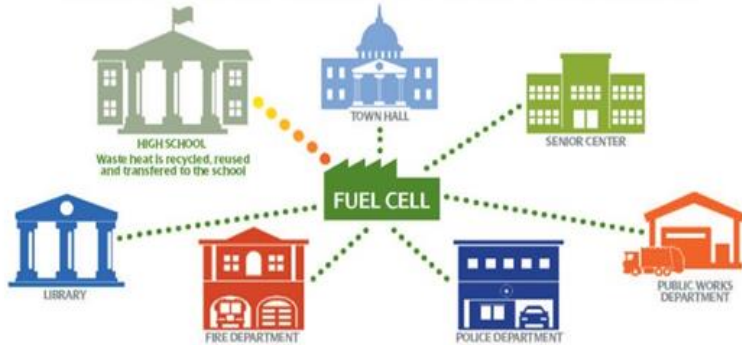
# Power Security with Microgrids



**Woodbridge**  
*Connecticut*



**Where Renewable Meets Reliable**



*A look at UI's Woodbridge fuel cell project*

**WOODBIDGE UTILITY MICROGRID**



State-of-the-art utility microgrid application supporting critical building loads with independent capabilities

Replicable model for other customers evaluating similar structures



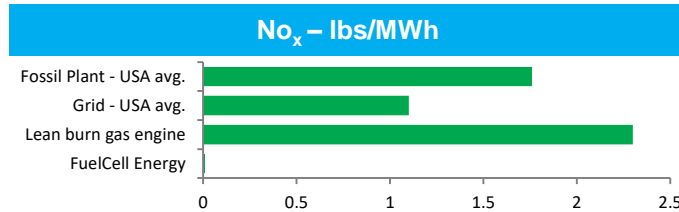
# Multi-faceted Benefits of FuelCell Platform

## Electrochemical conversion of fuel energy to power reduces emissions, increases efficiency, and improves siting

1

### Ultra-Clean

Generates **negligible emissions of particulates, NO<sub>x</sub> and SO<sub>x</sub>**, avoiding health impacts and the creation of smog associated with traditional combustion baseload power generation.  
High efficiency and the ability to operate on renewable fuels results in low or zero CO<sub>2</sub> emissions



2

### Attractive Economics & Energy Security

Providing **power at the point of use** (distributed power generation), rather than central generation that requires transmission, greatly improves efficiency and reduces cost

Fact: Transmission of power over long distances results in line power losses of 7% to 9% of the centrally-generated power

3

### Easy to Site

The **compact footprint** of a SureSource system is a large differentiating factor, specifically in urban settings where land is limited and / or expensive

Baseload fuel cells produce more than **450 times the annual MWh** than a comparable sized solar system



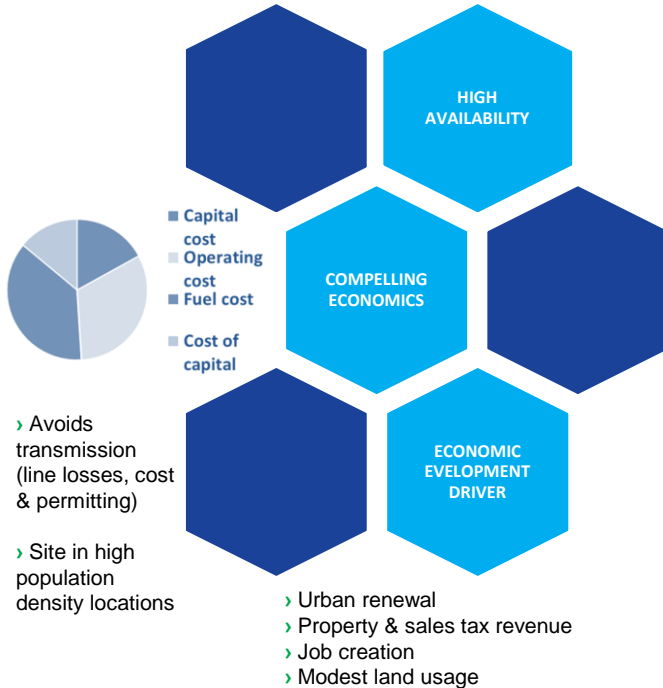
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### Fuel Flexible

**Natural gas, biogas**, and a variety of other fuels, both gaseous and liquid, have been proven effective with FuelCell's technology delivering low to zero carbon.



# FCE's Performance vs Benchmarked Technologies



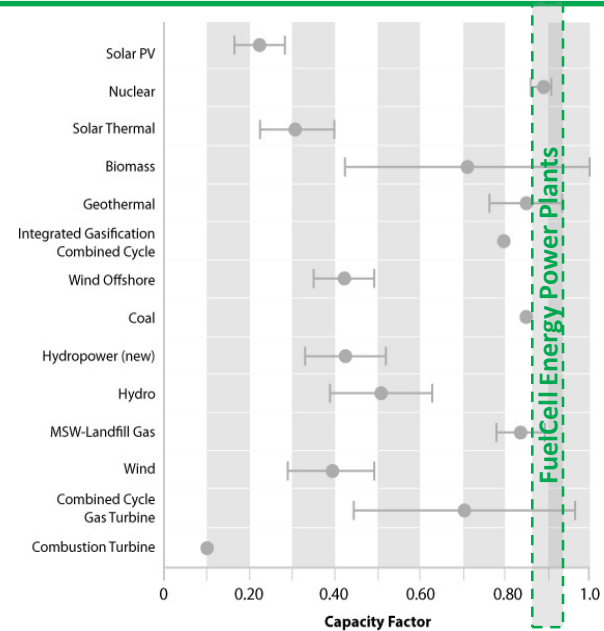
**Goal: Meet RPS mandates (i.e. max. REC's)**

	<u>MW's</u>	<u>Acres of land</u>	<u>Annual MWh's</u>
FCE	10	1	~83,000
Solar	50	395	~83,000

**Challenge: Limited land availability**

	<u>MW's</u>	<u>Acres of land</u>	<u>Annual MWh's</u>
FCE	10	1	~83,000
Solar	0.13	1	~220

High level of Renewable Energy Credits (REC's) generated (3-5x the REC's of solar)

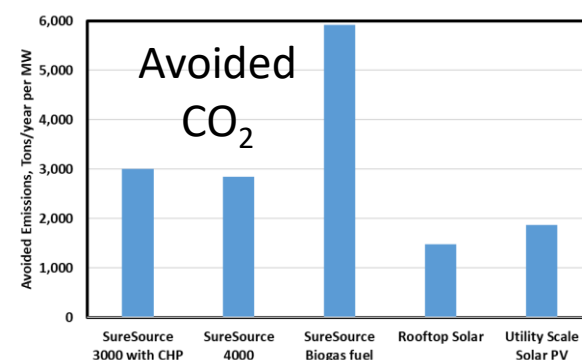
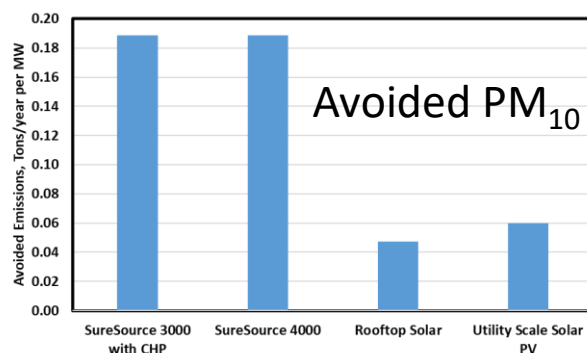
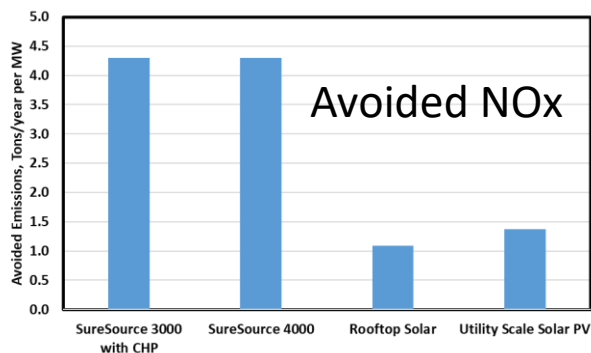


High capacity factor of FuelCell power plants exceeds nuclear and coal at 90%. Maximizes value and environmental benefits from installed capacity

Source for capacity factor for non fuel cell technologies: NREL

# Significant Avoided Emissions from Baseload Clean Power

	Capacity Factor, %	Emissions, lb/MWh			Avoided Emissions, Tons/y per MW		
		NOX	PM10	CO2	NOX	PM10	CO2
Average US Grid		1.10	0.05	1501			
SureSource 3000 with CHP	90%	0.01	0.00	738	4.3	0.19	3,008
SureSource 4000	90%	0.01	0.00	778	4.3	0.19	2,848
SureSource with Biogas fuel	90%	0.01	0.00	0	4.3	0.19	5,917
Rooftop Solar	23%				1.1	0.05	1,479
Utility Scale Solar PV	29%				1.4	0.06	1,874



**Low Emissions and High Capacity Factor Make Fuel Cells an Important Part of an All-of-the-Above Strategy**

Grid emissions rates for NOX and CO2 From EPA eGrid 2016, US Average non-baseload rates  
Capacity factor for solar are averages of ranges from Lazard LCOE Analysis version 12, November 2018  
Utility scale avoided emissions assumes 5% T&D losses

# Areas of Execution

## Near Term

- Cash management / operating expense improvement
- Sales re-acceleration to capture extensive market opportunities
- Relaunch in the European market
- Tulare BioMAT and Groton construction completion
- Capital structure optimization

## Medium Term

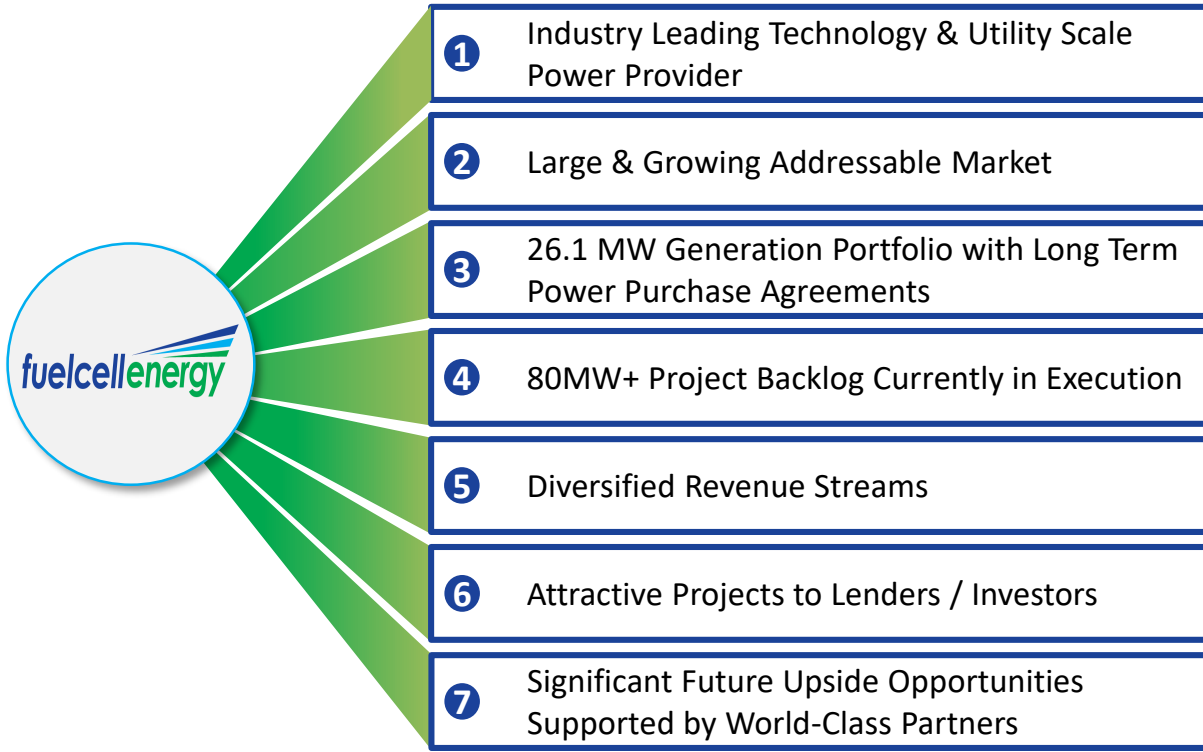
- Restructure the capital stack and corporate structure
- Ramp factory activity to meet increased module demand for projects and service
- Break ground on construction on the LIPA, Derby, CT and San Bernardino projects
- Expand distribution and project financing projects
- Engage the broader markets to ensure the clear benefits of fuel cells are understood and appreciated

## Long Term

- Execute on the remainder of the 83.1 MW of projects under development
- Grow the generation portfolio of owned project assets prudently with efficient project level debt
- Win new global business
- Deploy our Advanced Technology solutions



# Investment Highlights



## Near-Term Focus Areas

*Execute on the largest project backlog in Company history — 80MW+ across nine projects*

*Continue to develop Carbon Capture MCFC-based Solution and market opportunity with ExxonMobil*

*Execute on relaunched opportunity for SureSource-based solutions in Europe*

*Rigorous review and control over expenses, with a focus on efficiency and operational leverage*