FuelCell Energy

Solid Oxide Stack Assembly & BOP Manufacturing Automation

U.S. Department of Energy Manufacturing Automation and Recycling for Clean Hydrogen Technologies Experts Meeting

May 25, 2022

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 regarding future events or our future financial performance that involve certain contingencies and uncertainties, including those discussed in our Annual Report on Form 10-K for the fiscal year ended October 31, 2021 in the section entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations". Forward-looking statements include, 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 its business plans and strategies. These statements are not guarantees of future performance, and 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: general risks associated with product development and manufacturing; general economic conditions; changes in interest rates, which may impact project financing; supply chain disruptions; changes in the utility regulatory environment; changes in the utility industry and the markets for distributed generation, distributed hydrogen, and fuel cell power plants configured for carbon capture or carbon separation; potential volatility of commodity and energy prices that may adversely affect our projects; availability of government subsidies and economic incentives for alternative energy technologies; our ability to remain in compliance with U.S. federal and state and foreign government laws and regulations and the listing rules of The Nasdaq Stock Market; rapid technological change; competition; the risk that our bid awards will not convert to contracts or that our contracts will not convert to revenue; market acceptance of our products; changes in accounting policies or practices adopted voluntarily or as required by accounting principles generally accepted in the United States; factors affecting our liquidity position and financial condition; government appropriations; the ability of the government and third parties to terminate their development contracts at any time; the ability of the government to exercise "march-in" rights with respect to certain of our patents; our ability to successfully market and sell our products internationally; our ability to implement our strategy; our ability to reduce our levelized cost of energy and our cost reduction strategy generally; our ability to protect our intellectual property; litigation and other proceedings; the risk that commercialization of our products will not occur when anticipated or, if it does, that we will not have adequate capacity to satisfy demand; our need for and the availability of additional financing; our ability to generate positive cash flow from operations; our ability to service our long-term debt; our ability to increase the output and longevity of our platforms and to meet the performance requirements of our contracts; our ability to expand our customer base and maintain relationships with our largest customers and strategic business allies; changes by the U.S. Small Business Administration or other governmental authorities to, or with respect to the implementation or interpretation of, the Coronavirus Aid, Relief, and Economic Security Act, the Paycheck Protection Program or related administrative matters; and concerns with, threats of, or the consequences of, pandemics, contagious diseases or health epidemics, including the novel coronavirus, and resulting supply chain disruptions, shifts in clean energy demand, impacts to our customers' capital budgets and investment plans, impacts to our project schedules, impacts to our ability to service existing projects, and impacts on the demand for our products, as well as other risks set forth in the Company's filings with the Securities and Exchange Commission. 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 contained or incorporated by reference herein 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 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, 2021, filed with the SEC on December 29, 2021, our Form 10-Q for the three months ended January 31, 2022, filed with the SEC on March 10, 2022, and our earnings release for the first fiscal quarter of 2022, filed as an exhibit to our Current Report on Form 8-K filed with the SEC on March 10, 2021.

FuelCell Energy: A Global Leader in Fuel Cell Technology – Operating Since 1969

COMPANY OVERVIEW

A global leader in **decarbonizing power** and **producing hydrogen** through our proprietary fuel cell technology

FuelCell Energy is working to:

- **Produce** low- to zero-carbon power
- **Capture** carbon and greenhouse gasses while simultaneously generating power; Negligible NOx or SOx emissions
- **Supply** green or blue hydrogen
- **Store** energy from intermittent renewables by converting excess power to hydrogen – then converting hydrogen back into power when it's needed or delivering to other applications

COMPANY HIGHLIGHTS[1]

HQ Danbury, Connecticut	**~400** Employees	**95** Platforms in Commercial Operation	**3** Continents
FCEL Listing: NASDAQ	**>225 MW** Capacity in Field	**>13** Million MWh's generated with SureSource Patented Technology	

[1] As of the quarter ended January 31, 2022

GLOBAL CUSTOMERS

LIPA, ExxonMobil, Toyota, Pfizer, CMEEC, Radisson, American Electric Power, KCOSPO, Southern California Edison, Federal Ministry of Education and Research, Friatec, Pepperidge Farm, Avangrid, Hartford Hospital, Clearway Energy, e·on

Demand for Clean, Reliable Electricity Driving Adoption of Fuel Cell Technology

FuelCell Energy North American Operations

Headquarters
Danbury, CT
- Corporate Headquarters
- Research labs
- Engineering design
- Global Service center

Manufacturing
Torrington, CT
- Module Assembly & Stacking
- 167,000 sq. ft.

Solid Oxide Development & Manufacturing
Calgary, AB, Canada
- 32,000 sq. ft.
- Research labs
- Cell and stack production
- Cell and stack testing

Two High Temperature Fuel Cell / Electrolysis Platforms

APPLICATION	CARBONATE	SOLID OXIDE
Power gen/CHP from natural gas, biogas, or H_2 blends	✓	✓
Power generation/CHP from hydrogen fuel		✓
CO_2 capture from platform	✓	✓
CO_2 capture from external source while making power	✓	
H_2/Power/Water production from natural gas or biogas	✓	✓
High efficiency electrolysis H_2 production		✓
Electrolysis/Reforming/Purification	✓	

Carbonate Power Generation Platforms

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

Larger Scale Fuel Cell Parks

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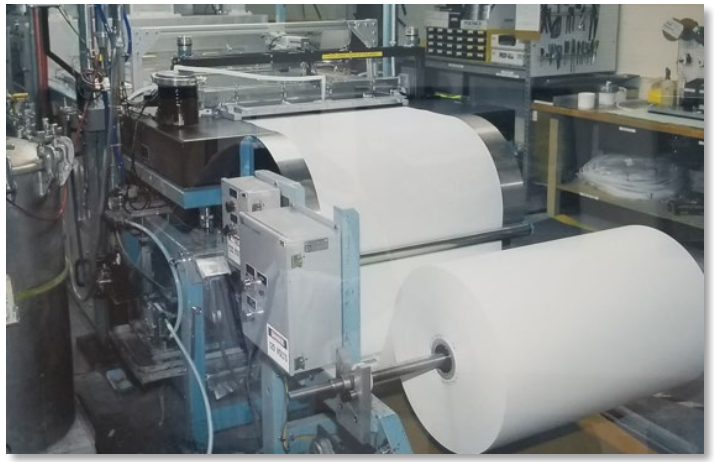
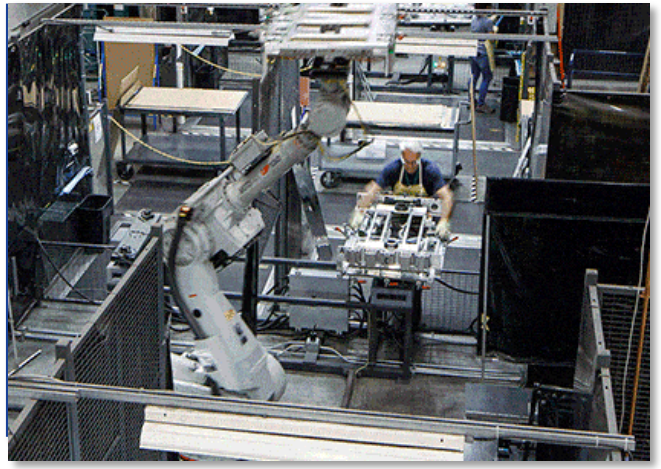
Carbonate Manufacturing

Tape Casting: Anode & Matrix



Sintering: Cathode

Sheet Metal: Bi-Polar Plate



Sub-Assembly
Cell Package Unitization

Final Assembly
Stacking & Module Assembly

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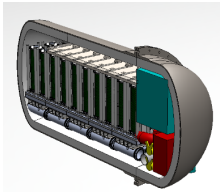
Solid Oxide Applications

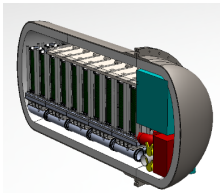
SOFC Stack

7 kW DC Power Generation
36 kW DC / 25 kg H_2/day electrolysis
350 cells, 17” height

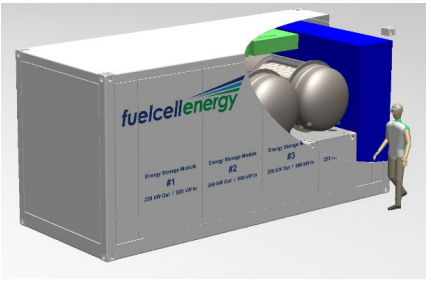


Power Generation Stack Module – Only runs in power generation mode on a wide range of fuels, including natural gas, biofuels, propane, and hydrogen

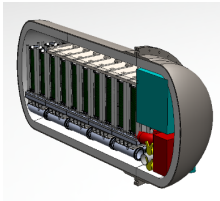
Power Generation



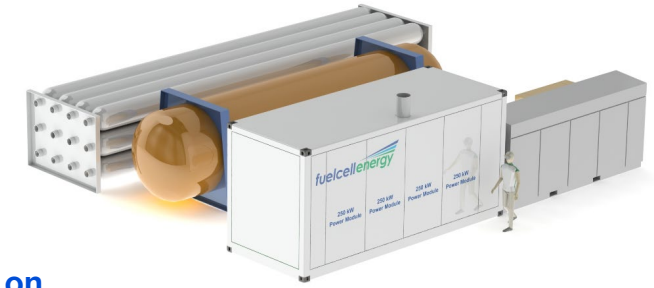
Electrolysis Stack Module – Produces hydrogen from steam with power input



Electrolysis



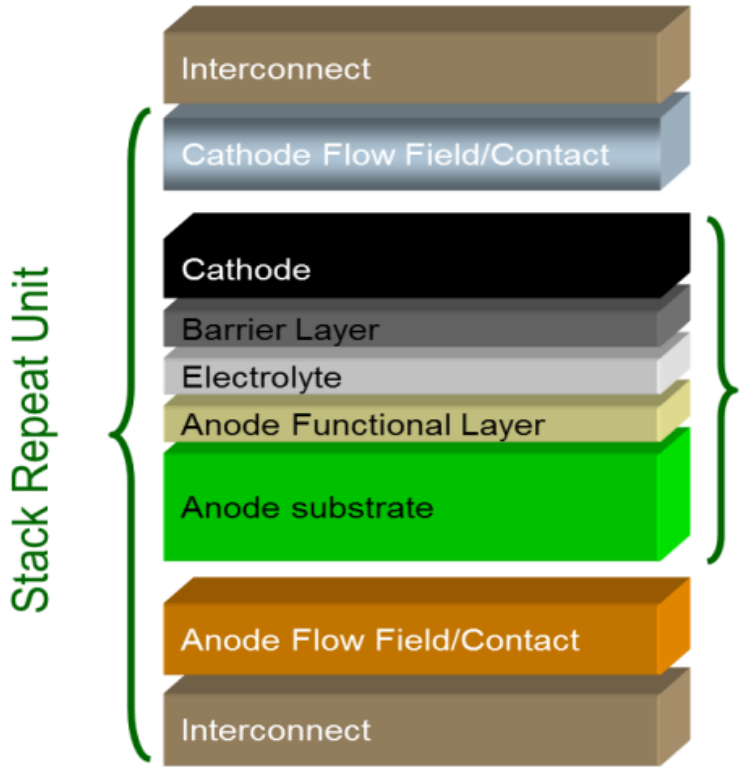
Energy Storage Stack Module – Alternates between power generation on hydrogen fuel and electrolysis producing hydrogen from water



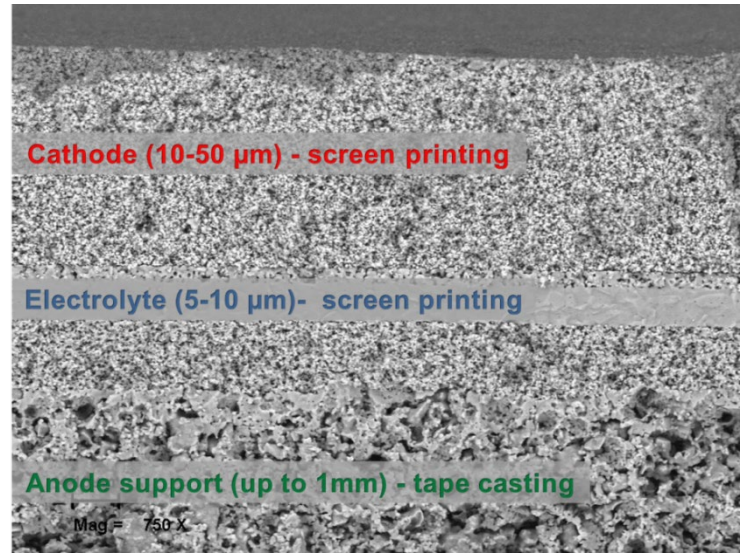
Energy Storage

Solid Oxide Technology Overview

Anode-Supported Solid Oxide Cell



Solid Oxide Fuel Cell Structure



Component	Materials	Thickness	Porosity	Process
Anode	Ni/YSZ	~0.3 mm	~ 40%	Tape casting
Electrolyte	YSZ	5 - 10 µm	< 5%	Screen printing
Cathode	Conducting ceramic	10 - 50 µm	~ 30%	Screen printing

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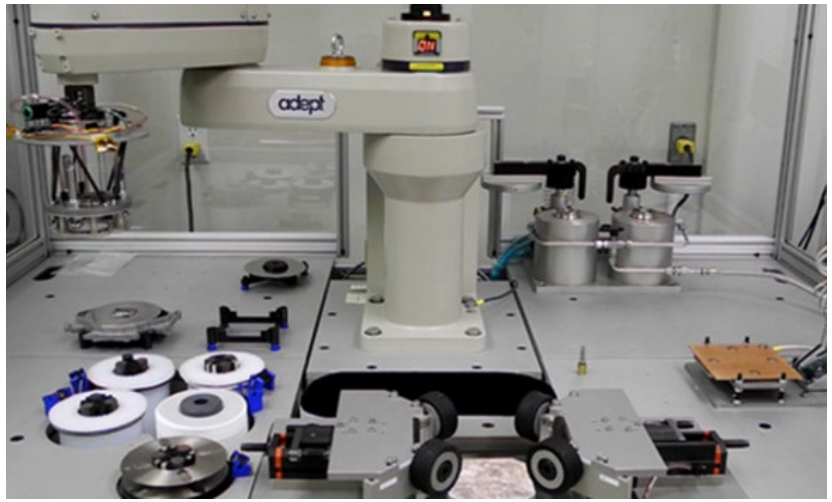
Solid Oxide Manufacturing

Tape Casting

Automated Screen Printing

Sintering



Automated QC / Stacking

Final Assembly

Conditioning & Testing

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Leveraging Carbonate Manufacturing Experience as we Build Out Solid Oxide Manufacturing Capacity

- Common processes and manufacturing methods
- Common supply chain elements
- Unique Solid Oxide processes well developed from Calgary experience base
- Many Solid Oxide processes more amenable to automation than carbonate
- BOP systems are built to specification (electrical BOP) or built to design (mechanical BOP) by vendors – automation level varies depending on equipment

Thank You

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