



Fuelcell Energy Annual Report 2020

Form 10-K (NASDAQ:FCEL)

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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended October 31, 2019

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file number: 1-14204

FUELCELL ENERGY, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

**3 Great Pasture Road
Danbury, Connecticut**
(Address of principal executive offices)

06-0853042
(I.R.S. Employer
Identification No.)

06810
(Zip Code)

Registrant's telephone number, including area code: (203) 825-6000
Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol (s)	Name of each exchange on which registered
Common Stock, \$0.0001 par value per share	FCEL	The Nasdaq Stock Market LLC (Nasdaq Global Market)

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

As of April 30, 2019, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was \$42,440,268 based on the closing sale price of \$3.12 as reported on the NASDAQ Global Market.

Indicate the number of shares outstanding of each of the registrant's classes of common stock, as of the latest practicable date.

Class	Outstanding at January 14, 2020
Common Stock, \$0.0001 par value per share	210,965,999

DOCUMENT INCORPORATED BY REFERENCE

Document	Parts Into Which Incorporated
Definitive Proxy Statement for the 2020 Annual Meeting of Stockholders	Part III

FUELCELL ENERGY, INC.
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PART I

Item 1. BUSINESS

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Forward-Looking Statement Disclaimer

This Annual Report on Form 10-K contains statements that the Company believes to be “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical fact included in this Form 10-K, including statements regarding the Company’s future financial condition, results of operations, business operations and business prospects, are forward-looking statements. Words such as “expects,” “anticipates,” “estimates,” “projects,” “intends,” “plans,” “believes,” “predicts,” “should,” “will,” “could,” “would,” “may,” “forecast,” and similar expressions and variations of such words are intended to identify forward-looking statements. Such statements relate to, among other things, the following:

- the development and commercialization by FuelCell Energy, Inc. and its subsidiaries (“FuelCell Energy,” “Company,” “we,” “us” and “our”) of fuel cell technology and products and the market for such products,
- expected operating results such as revenue growth and earnings,
- our belief that we have sufficient liquidity to fund our business operations for the next 12 months,
- future funding under Advanced Technologies contracts,
- future financing for projects, including publicly issued bonds, equity and debt investments by investors and commercial bank financing,
- the expected cost competitiveness of our technology, and
- our ability to achieve our sales plans, market access and market expansion goals, and cost reduction targets.

The forward-looking statements contained in this report are subject to risks and uncertainties, known and unknown, that could cause actual results to differ materially from those forward-looking statements, including, without limitation, the risks contained under Item 1A - Risk Factors of this report and the following:

- general risks associated with product development and manufacturing,
 - general economic conditions,
 - changes in the utility regulatory environment,
 - changes in the utility industry and the markets for distributed generation, distributed hydrogen, and carbon capture configured fuel cell power plants,
 - potential volatility of energy prices,
 - 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 (“Nasdaq”),
 - rapid technological change,
 - competition,
 - our dependence on strategic relationships,
 - 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 to terminate its development contracts at any time,
 - the ability of the government to exercise “march-in” rights with respect to certain of our patents,
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- the situation with POSCO Energy has limited and continues to limit our efforts to access the South Korean and Asian markets and could expose us to costs of arbitration or litigation proceedings,
- 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,
- 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 power plants, and
- our ability to expand our customer base and maintain relationships with our largest customers and strategic business allies.

We cannot assure you that:

- we will be able to meet any of our development or commercialization schedules,
- we will be able to remain in compliance with the minimum bid price requirement of the Nasdaq listing rules,
- any of our new products or technology, once developed, will be commercially successful,
- our existing SureSource power plants will remain commercially successful,
- the government will appropriate the funds anticipated by us under our government contracts,
- the government will not exercise its right to terminate any or all of our government contracts, or
- we will be able to achieve any other result anticipated in any other forward-looking statement contained herein.

The forward-looking statements contained herein speak only as of the date of this report and readers are cautioned not to place undue reliance on these forward-looking statements. Except for ongoing obligations to disclose material information under the federal securities laws, we expressly disclaim any obligation or undertaking to release publicly any updates or revisions to any such statement to reflect any change in our expectations or any change in events, conditions or circumstances on which any such statement is based.

Background

Information contained in this report concerning the electric power supply industry and the distributed generation market, our general expectations concerning this industry and this market, and our position within this industry are based on market research, industry publications, other publicly available information and assumptions made by us based on this information and our knowledge of this industry and this market, which we believe to be reasonable. Although we believe that the market research, industry publications and other publicly available information, including the sources that we cite in this report, are reliable, they have not been independently verified by us and, accordingly, we cannot assure you that such information is accurate in all material respects. Our estimates, particularly as they relate to our general expectations concerning the electric power supply industry and the distributed generation market, involve risks and uncertainties and are subject to change based on various factors, including those discussed under Item 1A - Risk Factors of this report.

As used in this report, all degrees refer to Fahrenheit ("F"); kilowatt ("kW") and megawatt ("MW") numbers designate nominal or rated capacity of the referenced power plant; "efficiency" or "electrical efficiency" means the ratio of the electrical energy generated in the conversion of a fuel to the total energy contained in the fuel (lower heating value, the standard for power plant generation, assumes the water in the product is in vapor form; as opposed to higher heating value, which assumes the water in the product is in liquid form, net of parasitic load); kW means 1,000 watts; MW means 1,000,000 watts; "kilowatt hour" ("kWh") is equal to 1kW of power supplied to or taken from an electric circuit steadily for one hour; and one British Thermal Unit ("Btu") is equal to the amount of heat necessary to raise one pound of pure water from 59°F to 60°F at a specified constant pressure.

All dollar amounts are in U.S. dollars unless otherwise noted.

Additional Technical Terms and Definitions

Advanced Technologies - Advanced Technologies projects involve the development of new products or applications based on existing carbonate or solid oxide technologies or new electrochemical technologies. Examples are carbon capture, distributed hydrogen, solid oxide fuel cells and solid oxide electrolysis cell technologies. Advanced Technologies projects are typically externally funded by government or private sources and executed by our Advanced Technologies Group.

Availability - A measure of the amount of time a system is available to operate, as a fraction of total calendar time. For power generation equipment, an industry standard (IEEE (The Institute of Electrical and Electronics Engineers) 762, "Definitions for Use in Reporting Electric Generating Unit Reliability, Availability and Productivity") is used to compute availability. "Availability percentage" is calculated as total period hours since Commercial Operations Date less hours not producing electricity due to planned and unplanned maintenance divided by total period hours. Grid disturbances, force majeure events and site specific issues such as a lack of available fuel supply or customer infrastructure repair do not penalize the calculation of availability according to this standard.

Carbonate Fuel Cell ("CFC") - Carbonate fuel cells, such as the fuel cell power plants produced and sold by FuelCell Energy, are high-temperature fuel cells that use an electrolyte composed of a carbonate salt mixture suspended in a porous, chemically inert ceramic-based matrix. CFCs operate at high temperatures, enabling the use of a nickel-based catalyst, a lower cost alternative to precious metal catalysts used in some other fuel cell technologies.

Combined Heat & Power ("CHP") - A power plant configuration or mode of operation featuring simultaneous on-site generation from the same unit of fuel of both electricity and heat with the heat used to produce steam, hot water or heated air for both heating and cooling applications.

Commercial Operations Date ("COD") - The date that testing and commissioning of a fuel cell project is completed and the fuel cell power plant is operational with power being generated and sold to the end-user.

Distributed Generation - Electric power that is generated where it is needed (distributed throughout the power grid) rather than from a central location. Centrally generated power requires extensive transmission networks that require maintenance and experience efficiency losses during transmission while distributed generation does not. Distributed generation is typically classified as small to mid-size power plants, typically generating 75 MW or less. Central generation is typically classified as large power plants generating hundreds or even thousands of MW.

Microgrids - Microgrids are localized electric grids that can disconnect from the traditional electric grid to operate autonomously and strengthen grid resiliency. Microgrids can be composed only of SureSource power plants due to their continual power output or combine a variety of power generation types such as fuel cells and solar arrays.

Nitrogen Oxides ("NOx") - Generic term for a group of highly reactive gases, all of which contain nitrogen and oxygen in varying amounts. Many of the NOx are colorless and odorless; however, they are a major precursor to smog production and acid rain. One common pollutant, Nitrogen Dioxide, along with particles in the air, can often be seen as a reddish-brown layer over an urban area. NOx form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, traditional fossil fuel fired electric utility generation, and other industrial, commercial and residential sources that burn fuels.

Particulate Matter (“PM”) - Solid or liquid particles emitted into the air that are generally caused by the combustion of materials or dust generating activities. Particulate matter caused by combustion can be harmful to humans as the fine particles of chemicals, acids and metals may get lodged in lung tissue.

Power Purchase Agreement (“PPA”) - A Power Purchase Agreement is a contract that enables a power user to purchase energy under a long-term contract where the user agrees to pay a predetermined rate for the kilowatt-hours delivered from a power generating asset while avoiding the need to own the equipment and pay the upfront capital cost. The PPA rate is typically fixed (with an escalation clause tied to a consumer price index or similar index), or pegged to a floating index that is on par with or below the current electricity rate being charged by the local utility company. A PPA is typically for a term of 10 to 20 years.

Renewable Biogas or Biogas - Renewable Biogas is fuel produced by biological breakdown of organic material. Biogas is commonly produced in biomass digesters employing bacteria in a heated and controlled oxygen environment. These digesters are typically used at wastewater treatment facilities or food processors to break down solid waste and the biogas produced is a byproduct of the waste digestion. Biogas can be used as a renewable fuel source for SureSource fuel cell plants located on site where the biogas is produced with gas cleanup, or it can be processed further to meet pipeline fuel standards and injected into a gas pipeline network, which is termed Directed Biogas. Directed Biogas requires additional processing to increase the Btu content of the gas, which increases cost and consumes power. Use of Biogas at the point of production (on-site) is more efficient and more economical.

Solid Oxide Electrolysis Cell (“SOEC”) - Solid Oxide Electrolysis Cells are electrochemical cells with the same cell and stack structure as Solid Oxide Fuel Cells, but are operated in reverse – instead of producing power from fuel and oxygen, SOEC cells produce hydrogen and oxygen from steam when supplied with power.

Solid Oxide Fuel Cell (“SOFC”) - Solid Oxide Fuel Cells are electrochemical cells with a non-porous ceramic material as the electrolyte. SOFCs operate at high temperatures (slightly higher than carbonate fuel cells) eliminating the need for costly precious-metal catalysts, thereby reducing cost. Like carbonate fuel cells, the high operating temperature enables internal reforming of the hydrogen rich fuel source. The Solid Oxide Fuel Cell platform can be operated in fuel cell mode (producing power from fuel) or electrolysis mode (producing hydrogen from power) and can alternate between the two.

Sulfur Oxide (“SOx”) - Sulfur oxide refers to any one of the following: sulfur monoxide, sulfur dioxide (“SO₂”) and sulfur trioxide. SO₂ is a byproduct of various industrial processes. Coal and petroleum contain sulfur compounds, and generate SO₂ when burned. SOx compounds are particulate and acid rain precursors.

Overview

FuelCell Energy, based in Connecticut, was founded in 1969 as a New York corporation to provide applied research and development services on a contract basis. We completed our initial public offering in 1992 and reincorporated in Delaware in 1999. We began selling stationary fuel cell power plants commercially in 2003.

With more than 9.5 million megawatt hours of clean electricity produced, FuelCell Energy is now a global leader in delivering environmentally-responsible distributed baseload power solutions through our proprietary, molten-carbonate fuel cell technology. Today, we develop turn-key distributed power generation solutions and operate and provide comprehensive service for the life of the power plant. We are working to expand the proprietary technologies that we have developed over the past five decades into new products, markets and geographies.

Fiscal year 2019 was one of transformation for FuelCell Energy. We restructured our management team and our operations in ways that are intended to support our growth and achieve our profitability and sustainability goals. We raised capital under our at-the-market sales plan, which allowed us to pay down our accounts payable and stay current on our forbearance agreements. We repaid a substantial portion of our short-term debt, retired our Series C and Series D Convertible Preferred Stock obligations, and refocused on our core competencies in an effort to drive top-line revenue. We believe we have emerged from a difficult fiscal 2019 as a stronger company, better positioned to execute on our business plan. Our recent achievements, accomplished during one of the most stressful times in the Company’s history, include: (a) closing on a new \$200 million credit facility with Orion Energy Partners Investment Agent, LLC and certain of its affiliated lenders (“Orion Energy Partners”), (b) executing a new Joint Development Agreement with ExxonMobil Research and Engineering Company (“EMRE”), with anticipated revenues of up to \$60 million, (c)

restructuring our business to realize annualized operating savings of approximately \$15 million, (d) making progress in constructing certain projects in our backlog, including the Connecticut Municipal Electric Energy Cooperative (“CMEEC”) project at the U.S. Navy base in Groton, Connecticut and the commissioning and startup of the 2.8 MW Tulare BioMAT project in California, (e) relaunching our sub-megawatt product in Europe, (f) executing a strategic relationship with E.On Business Solutions, an affiliate of one of the largest utilities in the world, to market and distribute our products beyond the two FuelCell operating plants E.On already owns, (g) extending the maturity of the Class A Cumulative Redeemable Exchangeable Preferred Shares issued by FCE FuelCell Energy Ltd. (the “Series 1 Preferred Shares”) by one year, and (h) concluding our engagement with Huron Consulting Services, LLC (“Huron Consulting”) after successful restructuring and payoff of our prior senior secured credit facility.

We will use this new focus coming out of our restructuring to advance our core goals of:

- Executing on our backlog and new project awards;
- Growing our generation portfolio;
- Competing for and winning new business around the world; and
- Developing and commercializing our Advanced Technologies platform of products.

In order to achieve our core goals, we will focus in 2020 on implementing our new “Powerhouse” business strategy to strengthen our business, maximize operational efficiencies and position us for future growth. The “Powerhouse” business strategy is focused on three fundamental pillars – Transform, Strengthen, Grow – which are described in further detail below.

Transform

We spent the latter half of fiscal 2019 working on and achieving the following:

- *Restructured our management team:* We appointed a new President, Chief Executive Officer and Chief Commercial Officer, Jason Few, to lead our organization, and promoted Michael Lisowski to the positions of Executive Vice President and Chief Operating Officer and Anthony Leo to the positions of Executive Vice President and Chief Technology Officer. Together with our Executive Vice President and Chief Financial Officer, Michael Bishop, and our Executive Vice President, General Counsel, Chief Administrative Officer and Corporate Secretary, Jennifer Arasimowicz, we believe that this executive management team is well positioned to execute on our new “Powerhouse” business strategy.
- *Secured funding:* Closed on a \$200 million senior secured credit facility with Orion Energy Partners to support execution of our current projects and provide balance sheet strength and liquidity.
- *Restructured organization:* Concluded our engagement with Huron Consulting after successful restructuring and payoff of our prior senior secured credit facility.
- *Delivered cost savings:* Realized annualized operating savings of approximately \$15 million through the restructuring of our business.
- *Refinanced debt:* Repaid a substantial portion of our short-term debt with funds from a combination of sales of our common stock under our at-the-market sales plan and our long-term credit facility with Orion Energy Partners.

Strengthen

- *Capital deployment:* Continue to focus on disciplined capital deployment and obtaining lower-cost, long-term financing for completed generation projects.
 - *Commercial excellence:* Strengthen customer relationships and build a customer-centric reputation.
 - *Operational excellence:* Implement a rigorous approach to executing and delivering our backlog on-time and on-budget.
 - *Cost reductions:* Focus on continued lean resource management and cost reduction opportunities.
-

- *Focused Execution*: Continue to develop and define a clear strategic roadmap for the Company.

Grow

- *Sales growth*: Increase product sales to key strategic customers, and grow service revenue through pricing strategy, reducing the cost of ownership for our customers and enhancing service solutions, including long duration energy storage.
- *Innovation*: Increase length of product life and product reliability, and expand commercialization of new technologies such as carbon capture, hydrogen, biofuels, and solid oxide systems.
- *Segment leadership*: Capitalize on our expertise in the key addressable markets of biofuels, microgrid development, and hydrogen economy expansion for industry, transportation and electric power generation.
- *Geographic and market expansion*: Continue to develop new clean and renewable energy partnerships to advance carbon capture, hydrogen and multi-fuel/biofuel technology, and pursue growth in global markets.

Our mission and purpose remains to utilize our proprietary, state-of-the-art fuel cell power plants to reduce the global environmental footprint of baseload power generation by providing environmentally responsible solutions for reliable electrical power, hot water, steam, chilling, hydrogen, microgrid applications, and carbon capture and, in so doing, drive demand for our products and services, thus realizing positive stockholder returns.

Our fuel cell solution is a clean, efficient alternative to traditional combustion-based power generation and is complementary to an energy mix consisting of intermittent sources of energy, such as solar and wind turbines. Our systems answer the needs of diverse customers across several markets, including utility companies, municipalities, universities, hospitals, government entities and a variety of industrial and commercial enterprises. We provide solutions for various applications, including utility-scale distributed generation, on-site power generation and combined heat and power, with the differentiating ability to do so utilizing multiple sources of fuel including natural gas, Renewable Biogas (i.e., landfill gas, anaerobic digester gas), propane and various blends of such fuels. Our multi-fuel source capability is significantly enhanced by our proprietary gas-clean-up skid.

Products

Our core fuel cell products offer clean, highly efficient and affordable power generation for customers, including the sub-megawatt SureSource 250™ and SureSource 400™ in Europe, and the 1.4 MW SureSource 1500™, the 2.8 MW SureSource 3000™, and the 3.7 MW SureSource 4000™ globally. The plants are scalable for multi-megawatt utility applications, microgrid applications, distributed hydrogen, or on-site CHP generation for a broad range of applications.

The global SureSource product line is uniformly based on the same carbonate fuel cell technology. Using a standard design globally enables supply chain volume-based cost reduction, optimal resource utilization and long-life product enhancements. Our power plants utilize a variety of available fuels to produce electricity electrochemically, in a process that is highly efficient, quiet, and produces virtually none of the particulate pollutants associated with traditional combustion-based power generation solutions. In addition to electricity, our standard fuel cell configuration produces high quality thermal energy (approximately 700° F), suitable for heating facilities or water, or steam for industrial processes or for absorption cooling. When configured for CHP, our system efficiencies can potentially reach up to 90%, depending on the application. When configured for distributed hydrogen our plants produce hydrogen in addition to power, with an effective efficiency (counting the fuel that would have been used to produce hydrogen conventionally) of up to 80% before considering waste heat utilization, which can raise the total efficiency even higher.

Our proprietary carbonate fuel cell technology generates electricity directly from a fuel, such as natural gas or Renewable Biogas, by reforming the fuel inside the fuel cell to produce hydrogen. This internal, proprietary "one-step" reforming process results in a simpler, more efficient, and cost-effective energy conversion system compared with external reforming fuel cells. Additionally, natural gas has an established infrastructure and is readily available in our existing and target markets compared to some types of fuel cells that can only operate on high purity hydrogen, and Biogas is rapidly growing in production around the world. Our products are fuel flexible, and mainly utilize clean natural gas and Renewable Biogas generated by the customer on-site or directed Biogas generated at a distant location and transported via the existing common carrier gas pipeline networks. The unique chemistry of our Carbonate Fuel Cells allows them to directly use low Btu on-site Biogas with no reduction in output or efficiency compared to