

**Research Summary: FuelCell Energy, Inc. (NASDAQ: FCEL)***Business Information*

FuelCell Energy, Inc. (NASDAQ: FCEL) manufactures, distributes, operates, and services fuel cell power plants. It is based in Danbury, Connecticut and has a market capitalization of \$610.54mm.

FuelCell derives its revenue from a handful of geographies, represented as shown below:

	A	B	C	D	E	F	G	H
1	Segment		2019 Pct.		2018 Pct.		2017 Pct.	
2	United States		\$56,211.00	92.5%	\$50,953.00	57.0%	\$47,539.00	49.7%
3	South Korea		\$ 2,656.00	4.4%	\$36,279.00	40.6%	\$44,217.00	46.2%
4	England		\$ 1,496.00	2.5%	\$ 387.00	0.4%	\$ 368.00	0.4%
5	Germany		\$ 359.00	0.6%	\$ 1,795.00	2.0%	\$ 2,740.00	2.9%
6	Canada			0.0%	\$ 23.00	0.0%	\$ 729.00	0.8%
7	Spain			0.0%		0.0%	\$ 73.00	0.1%
8	Total		\$60,752.00	100.0%	\$89,437.00	100.0%	\$95,666.00	100.0%

*In thousands. Historical trends demonstrate a rapid consolidation into the United States (as well as England) of FuelCell's revenue as well as a rapid decrease in its revenues.*

	A	B	I	J	K	L
1	Segment	Change Over Prior Yr	2019		2018	
2	United States		10.3%		7.2%	
3	South Korea		-92.7%		-18.0%	
4	England		286.6%		5.2%	
5	Germany		-80.0%		-34.5%	
6	Canada				-96.8%	
7	Spain					
8	Total		-32.1%		-6.5%	

*Revenue change over prior year by segment.*

**Comparable Companies Analysis**

We conducted two “rounds” of comparable companies analysis, narrowing the universe of comparable companies between the two.

*First Round*

We compared FuelCell with 21 other companies in the electrical equipment and parts sector with market capitalizations under \$2b. We found FuelCell to have a price-to-sales ratio 4.8x the mean and 9.8x the median of its peers and price-to-book value 7.0x the mean and 11.7x the median.

*This does not constitute investment advice or any offer or solicitation to buy or sell any security or securities.*

Its P/E multiple is not meaningful because FuelCell has not reported positive net income since the first quarter of 2000 and has not reported multiple consecutive quarters of positive net income since the 2<sup>nd</sup> quarter of 1998. It is worth noting that about half of its peers (10 out of 21) did in fact report positive net income, suggesting that this discrepancy is attributable to the company and not the industry.

It has reported a 19.6% decrease in sales over the past year, where its peers have reported mean and median increases of 9.9% and 5.7%, respectively. The average ROA, ROE, and ROI are negative, but FuelCell's are more strongly so, by factors of 1.8x, 5.2x, and 1.3x, respectively. The median of each of these metrics is positive.

FuelCell has lower liquidity than its peers, with a quick ratio 34% and 61% of the mean and median, respectively, and its current ratio 50% and 68% of the mean and median, respectively.

FuelCell is very highly leveraged relative to its peers. It has debt-to-equity and long-term D/E ratios greater than the maxima of its peers. Its D/E ratio is 22.4x its peers' mean and 392x their median; its LT D/E ratio is 10.1x its peers' mean and 211x their median.

FuelCell has strongly negative gross and operating margins (-17.4% and -65.8%, respectively). The median of both margins for its peers are both positive (20.4% and 4.1%). Of its peers, the mean gross margin is strongly positive (19.6%) and the mean operating margin is negative. The operating margin of FuelCell is 5.4x the mean operating margin (i.e., more strongly negative).

FuelCell has a much lower proportion of its shares held by insiders than its peers, suggesting reduced alignment between management's and shareholders' interests. Only 0.10% of its shares are held by insiders, relative to mean and median of 14.2% and 3.7%.

There are strong signs that the share price may decline soon. Its short float ratio of 17.84% represents the fact that nearly one in five of its tradeable shares are short-sold. This percentage is 7.8x the mean and 15.2x the median of its peers. Its short interest ratio, representing the ratio between the number of shares in short interests and the average daily trading volume, is 2.21, suggesting negative market sentiment.

### *Second Round*

As a second step, we narrowed the universe of comparable companies above. We examined summaries of the businesses of the companies included above and included only those whose core business relates to the distribution and storage of electrical power. This resulted in a set of 11 comparable companies. We shall examine the new multiples without re-explaining the significance of each.

Of these eleven, four reported positive earnings, though FuelCell did not. FuelCell had a P/S multiple 3.4x the mean and 6.1x the median and P/B 6.0x the mean and 10.6x the median.

Its peers reported strongly positive (15.7% and 12.9% mean and median) increases of sales over the past five years; FuelCell reported a decline in sales of -1.2x the mean and -1.5x the median.

Again, the average & median ROA, ROE, and ROI were all negative, but FuelCell's were generally more strongly so. Its ratios were 116.7%, 388.1%, and 161.1% the medians and 80.3%, 339.4%, and 50.6% the means.

FuelCell again demonstrated liquidity issues; it has a current ratio 46% and 91% of the mean and median, respectively, and a quick ratio 31% and 61% of the mean and median, respectively.

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The median D/E and LT D/E ratios were 0. FuelCell had a D/E ratio 6.4x the mean and 71.3x the median.

The mean and median gross margins were positive, and FCEL had negative gross margins -1.5x and -1.2x these metrics, respectively. The mean and median operating margins were negative, but FCEL's more strongly so (1.8x and 1.9x these metrics, respectively).

Again, a much lower proportion of FCEL's shares (0.10%) are held by insiders, relative to mean and median of 15.7% and 9.8%.

Again, there are signs that FCEL is primed for a downturn, with a float short 7.4x the mean and 25.5x the median and short ratio 2.7x the mean and 18.4x the median.

### Performance

In spite of the above, FuelCell has performed strongly positively on the month, quarter, half-year, year, and year-to-date (27.35%, 23.48%, 45.64%, 747.76%, and 13.15%). On the year, YTD, and half-year, its peers in the first round (measured by median and mean) have performed strongly negatively; on shorter timeframes results are mixed but still at best far less strongly positive than FuelCell's performance. In the second round, again, its peers tended to perform strongly negatively on the year, YTD, and month, with positive results on the quarter and mixed results on the half-year.



*A graph of FuelCell's share price over the past year demonstrates a hitherto bullish sentiment in the market.*

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FuelCell has reported negative operating income since the 2<sup>nd</sup> quarter of 1998 (when it reported operating income of \$1,000) and has not reported multiple quarters of positive operating income since a streak ending the 3<sup>rd</sup> quarter of 1997. FuelCell has also reported several consecutive quarters of negative cash flow from operations. As such, we elected not to perform discounted cash flow analysis: its unlevered free cash flow would be decidedly negative, and projecting positive unlevered free cash flows in the future would require making strong assumptions about future changes of course for the company that we are not well-positioned to make at this time.

We believe that FuelCell is currently over-valued and recommend a short position on FuelCell Energy, Inc. (NASDAQ: FCEL).

Since FuelCell has had consistently negative net income, it is very unlikely that it pays a common dividend on any reasonable investment horizon. For it to do so with negative net income would require increasing its already concerning leverage, which could strengthen a short position.

---Wasim Rahaman