March 11, 2014

Plugging Into Some Reality:
Fair Value of Plug Power is 50 Cents

Can someone please bring me a vodka and some second hand smoke? If we are going to have to hang around in a casino, let's at least have the experience.

Citron Research understands well the difference between a cult stock, dream stock, and a casino stock:

- A **cult** stock has a devout following people devoted to its products; therefore it can be challenging to assign a valuation. This could be either Tesla or Netflix. Both deliver great products; hence a cult around their shares.

- A **dream** stock is a stock with limitless blue sky. Regardless of current financials, investors can always look to the future. In dreamland, we have many biotechs and stocks in the 3D printing space.

- A **casino** stock, by contrast, is the lowest form of speculative moonshot. A casino stock can trade twice its outstanding shares in a single day, while turning over its entire float on people gambling that they can find a buyer at a higher price … Who really cares about anything else, right? The recent volume and share price surge in Plug Power (NASDAQ:PLUG) demonstrates how Wall Street treats this stock: nothing more than a casino.

Who is behind PLUG, and what do they do? This is simple: Plug Power sells fuel cell-powered forklifts … with fuel cells they acquire from Ballard Power. Nothing fancy here, folks. Same business model since the 2000 crash … Well over a decade as a public company, during which they have lost close to $850 million, while developing no IP or meaningful revenue growth. Profitability? Forget about it!

Citron will now explain why this stock is eventually headed right back to 50 cents (a blended average of all of their recent capital raises). On Thursday management will issue earnings and guidance. We warn investors. **YOU CANNOT TRUST MANAGEMENT GUIDANCE … Not Even a Little Bit.** Here is a history of broken promises and failure to deliver of Plug Power over the years:

Let us look at the promises over the years -- how they are not just misses but complete fabrications. And why is any of this going to change??? Let;s start with recent guidance and comments and look back all the way to 2009.

There was a lot of talk about orders in 2013.

Actual Orders

Millions, USD	Orders	Revenue
2010	**12**	**19**
2011	**46**	**28**
2012	**14**	**26**
2013 * (9 mos)	**44**	**26**

(Orders calculated using year-end backlog revenue -- 2013E number based on management's guidance of 32 million orders in the 4th quarter, plus prior December 4th business update of 12 million orders between May to Oct 8th. Revenue number is using Cowen's estimate, so 7 million wouldn't be a surprise).

- **Results: Shipments of fuel cells declined year-over year. It simply doesn't appear that an increase in orders is going to result in an increase in revenues.**

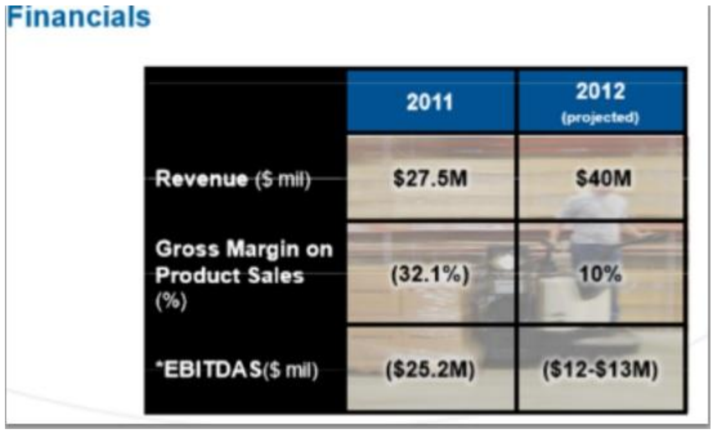
During the nine months ended September 30, 2013 we shipped **639** fuel cell systems to end customers as compared to **873** fuel cell systems shipped during the nine months ended September 30, 2012."

-- CEO Andy Marsh, Q3 2013 conference call

This investor presentation slide was made in June 2012:

"We're also on track to meet our target of shipping $40 million of revenue in 2012….We see significant pickup with our present customer base and are forecasting annual orders to range as expected between US$50 million to US$60 million…We do expect that both a ramp in shipment volumes and an increase in share of shipments from new product platforms over the remaining quarters of 2012 will boost gross margins into positive territory."

-- CEO Andy Marsh, Q1 2012 conference call


Financials

	2011	2012 (projected)
Revenue ($ mil)	$27.5M	$40M
Gross Margin on Product Sales (%)	(32.1%)	10%
*EBITDAS($ mil)	($25.2M)	($12-$13M)

Orders:
"We see significant pickup with our present customer base and are forecasting annual orders to range as expected between US$50 million to US$60 million."
-- CEO Andy Marsh, Q2 2012 conference call

Results: 2012 actual revenues were … $26.1M. Gross margins were -55%.

2nd quarter, 2011:

My first question is about guidance, just for clarification. Your prior guidance was, I believe, 1,600 to 2,300 units shipped in 2011. Are you changing guidance now to just more than 1,600?...
Well, Phil, I think based on where we're at and the additional orders that we expect to book at the end of the quarter, we expect to ship still in that target range but more towards the lower end of that range."
-- CEO Andy Marsh, Q2 2011 conference call

Results: The company shipped 1,024 units in 2011.

"In line with our path to profitability, I would now like to reiterate Plug Power's 2010 milestone. First, Plug Power will dramatically increase unit shipments for the year, shipping between 2100 and 2300 systems consisting of at least 1100 GenDrive and 1000 GenSys fuel cells. Second, consistent with these shipments, Plug Power will generate between mid 40 and low $50 million in revenue. Plug Power will achieve a gross margin percentage in the mid-teens."
-- CEO Andy Marsh, Q1 2009 conference call

Results: 2010 revenue of $19.5M and GM of -39%.

We dug back further through the past 4 years and beyond – there's a consistent string of broken promises, and complete unaccountability for management guidance. Just like the above example, the company does not only miss earnings estimates, but are actively and intentionally deceptive in their projections.

As far back has Citron Research can find, Plug Power has NOT ONCE delivered the amount of units that investors were promised. The company's promotional practices have become so outrageous that on their own website, posted as "company news", they reprint an article from a Seeking Alpha poster:

http://www.plugpower.com/News/CompanyNews/12-03-12/WHY_PLUG_POWER_COULD_DOUBLE.aspx

- **Results: They missed this published estimated by close to 50%.**

Money Talks … Bullshit Walks.

Citron Research believes that management's lack of honesty or conviction about the future of their company was most evident last year. While operating under a going concern from their auditor, the company did a **capital raise at .15 cents …**with a .15 cent warrant! Guess how many shares management bought? Below is a table of the capital raises of company during 2013. Management did not participate in ANY of these capital raises. Management's only participation was to take some stock in lieu of salary from a preexisting agreement while the company was on a trajectory to bankruptcy.
http://www.sec.gov/Archives/edgar/data/1093691/000100329713000281/xslF345X03/marsh.xml

Plug Power Capital Raise Events in 2013:

	Date	Shares Issued (Millions)	Share Price
Equity Raise	9/16/13	21.39	0.54
Air Liquide Convertible Raise	5/8/13	10.97	0.24
Equity Raise	2/20/13	43.42	0.15
Total Shares Raised	75.78		
Average Price	0.27		

It should be noted that the equity raises above all had warrant coverage, which made the deals even sweeter for the investors … yet management was noticeably absent. In contrast to Elon Musk, who committed nearly his whole life saving into his Tesla investment when they were just starting out, management of Plug Power wouldn't even buy the stock at .15 cents just one year ago.

Following this span of extraordinarily trashy capital raises, management deception has not slowed down either. In a February 26, 2014 interview CEO Marsh says:

"**The balance sheet's been the best it's been since I've been with the company.** As of at our announcement in mid-January, after raising $30 million, we have $46 million on the balance sheet. We will use about $10 million in operating cash this year, and we will leave this year profitable, and **<u>so we see no need for cash to fund the present business plan</u>**."

-- CEO Andy Marsh, 2014 interview

http://finance.yahoo.com/news/exclusive-interview-andy-marsh-president-185800025.html

Almost exactly one week after making that comment, the company sold another $22.4 million worth of stock at 15% discount to prior day closing price ($5.75). Even Marsh himself could not ever dream this stock would ever get over $5, so the company helped themselves to yet another helping of the public's money.

OK, so what has changed in one year since the stock was .15 cents? ABSOLUTELY NOTHING! IF ANYTHING THE STORY HAS GOTTEN WORSE. All investors have to know is right in the public filings about the past year trends of the company:

Revenue for the 9 months ended September 30, 2013 was $18.6M, vs $20.2M for the prior year. Nothing more needs to be said.

C'mon Citron- What about WalMart and FedEx? Doesn't that mean some great things ahead?

Anyone close to the story knows that Wal-Mart and Fedex, amongst a few other multinationals, have been Plug Power Customers for the past few years. The main reason is not because PLUG has built a better mousetrap but rather to take advantage of the 1063 Treasury Program that gives tax credits for renewable energy. Wal-Mart, big user of these credits, has gone as far as to install solar panels on the roofs of many of their stores.

http://www.chadbourne.com/files/upload/Kogan-REITS-Post-1603-Solar-Finance.pdf
https://www.solsystemscompany.com/blog/tag/renewable-energy/

This is not Citron talking, but rather a Fuel Cell Industry Journal:

> "Materials handling vehicles (MHV) continue to be an important niche market for the fuel cell industry. This application was popularized in 2009 thanks to funding allocated from the American Recovery and Reinvestment Act, which saw the subsidized sale of fuel cell equipped forklifts deployed at the warehouses of many high-profile American brands, including BMW Manufacturing, Coca-Cola, FedEx and Walmart."
>
> *--FuelCellToday*
> *Industry Review 2013*

http://www.fuelcelltoday.com/media/1889744/fct_review_2013.pdf

But All of this is About to End

At the end of 2016, this punchbowl will get taken away, which can, in the company's words be their deathblow. In this 2012 letter to the House Ways and Means committee, CEO Marsh describes the need to continue Federal incentives to make their business work … and without them, the technologies are going to go overseas.

http://waysandmeans.house.gov/uploadedfiles/plug_power_inc._fc42612.pdf

This is disclosed in stark relief as a risk factor in their 10-K:

- From 10-K for 2012:

  "Some conditions or contingencies that are out of our control may include, but are not limited to, government tax policy, government funding programs, and government incentive programs."

What is most astonishing is that even with government subsidies and "lack of competition", Plug Power still cannot either make a profit or even grow revenue in a meaningful way. Imagine how bad this business will become at the end of 2016.

Damned if You Do, Damned if You Don't

If by some chance, fuel cell forklifts do find themselves a market, there are numerous better financed companies waiting to enter the space – which has no competitive moat whatsoever protecting it. Here are two such examples of companies with plans established if demand increases.

It seems like Plug Power's only competitive advantage is going to be selling product at negative gross margin.
If the business can every show financial viability, say hello to Still and Toyota:

http://www.fuelcelltoday.com/news-events/news-archive/2013/december/viessmann-to-use-hydrogen-fuel-cell-forklift-truck-at-german-headquarters

http://www.toyotaforklift.ca/pages/about-us/toyota-philosophy/environmental-focus/future-vehicles.aspx

The only thing holding back Plug Power's better funded competitors is the proof that this business can be sustained concept without subsidies.

Plug Power does have one barrier to entry, though. No one else wants to lose $800 million selling a product in which they don't even own the technology.

Forget About Citron- What do the Other Professionals Have to Say?

Alternative Energy and Clean Technologies are some of the most thoroughly covered sectors on all of Wall Street. Despite the popularity of this sector, only 1 analyst covers Plug Power. And who is this analyst? It's our pal Rob Stone from **Cowen and Company**! Not too surprisingly, Cowen just facilitated an offering for PLUG.

Cowen and Mr. Stone have assigned a price target of $5.50 to Plug Power, which we believe to be extremely generous. Citron Research has had an interesting year with Mr. Stone and Cowen. This is the same analyst that put a $46 price target on Unipixel in 2013 … the same month Citron focused its commentary on the company. Citron's take was a single digit stock.

http://online.barrons.com/article/BT-CO-20130429-705604.html
http://www.citronresearch.com/unipixel-stop-the-presses/

Needless to say the stock has gone from $35 to $10, while Cowen and Stone capitulated and eventually lowered their target to $10.

http://online.wsj.com/article/BT-CO-20140102-703457.html

Citron Research and Mr. Stone and Cowen met up again in November as he/they put a $62 price target on VoxelJet.

http://www.streetinsider.com/Hot+New+Coverage/Cowen+Starts+Voxeljet+AG+(VJET)+at+Outperform/8871456.html

The same month Citron published on VoxelJet:
http://www.citronresearch.com/wp-content/uploads/2013/11/vjet-Q1-comment-final.pdf

In the following 5 months the stock has soared … from over $60 to $32.

While we would love to call Mr. Stone incompetent, we will not. Instead we will call him a "company man" who takes one for the team. Cowen raises money and he puts out a buy recommendation. **It should be noted that even with his most glowing recommendation, he could only get to $5.5 a share on Plug Power(which is probably $5 too high,)**

Investors must note that unlike other clean tech stock – Plug Power owns no unique technology. As we see in their filings:

Intellectual Property: Nothing Special

In their own 10-K, they admit they don't have proprietary protection :

> ""We believe that neither we nor our competitors can achieve a significant proprietary position on the basic technologies currently used in PEM fuel cell systems."
>
> *--Plug Power 10-K*

http://www.sec.gov/Archives/edgar/data/1093691/000100329713000101/esplugpower10k1.htm

Remember, Plug's primary source for the power systems in those forklifts comes from Ballard Power.

Gun to Head: So I Have to Own a Fuel Cell Company…

While we believe this entire space has entered a speculative frenzy, investors would be better suited buying Ballard Power(NASDAQ:BLDP), the actual power and technology provider to PLUG. Also financially, even ignoring their recent run-up, there is a gross disconnect in share price … while Ballard has established multiple revenue streams with their fuel cell technology.

Plug Power (PLUG):

- Trades at 61x revenues
- Market cap, fully diluted, (remember the warrants) currently valued $1.6 Billion

Ballard Power (BLDP):

- $810M Enterprise Value
- Trading at "only" 13.2x sales (rough calc based on 10M warrants O/S)

Conclusion: Plug Power in a Nutshell

- No profits
- No unique technology
- No scalability
- No demand
- No brand equity
- No media hype
- No analyst support

And this business shows no signs of improvement, only the looming end of government subsidies.

Does anyone ever really end up a winner at a casino???

Cautious Investing to All