



The Timminco Revolution, Revisited

By Jack Lifton and Tim Wood
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DETRIOT (ResourceInvestor.com) -- Today's, Wall Street Journal, May 21, 2008, has a very timely "Ahead of the tape" column entitled "[Solar Stocks: Hot Enough to Get Burned](#)." Note that the title does not end with a question mark. The author is making the point that whereas an investor might get consumed in the overheated ethanol market, as the negative consequences of too fast and too poorly thought out government actions and inactions set in, he believes that the solar market is likely to survive nonetheless because it is inherently based on a sound footing of growing utility and demand even if it is currently heavily subsidized where its growth is the fastest and largest.

Last week, I [wrote](#) about a timely revolution in producing upgraded metallurgical grade silicon (metal) (UMGSI) exemplified by a proprietary process technology announced by Canada's Timminco [TSX: [TIM](#)]. I wrote my article after hearing a webcast, produced by Timminco, by solar energy conversion consulting specialist, Photon International. I was impressed enough to 'gush' that it looked *to me* as if Timminco's process was going to be *the* state-of-the-art and that others would have to ultimately license Timminco's process in order to be competitive.

My readers quickly appraised me of other companies working on processes to achieve the mass conversion of tonnages of MGSI to UMGSI for solar use, and I have to admit that I now believe that I was too hasty in singling out Timminco as *the* player. However the evidence seems to me to still show that Timminco is a leading player.

Context

Before I discuss some of the other players in this field I want to point out the analogy between lithium ion battery developers and their OEM automotive customers and UMGSI suppliers and their solar cell manufacturing customers, so that everyone can understand what I am pointing out to them.

There is a lithium ion battery technology which works well at small to medium scale; it is the currently mass produced lithium-cobalt-ion battery, which is used, in a rechargeable form, as the battery in laptop computers and other portable devices requiring a steady drain at a fixed voltage over as long a period of time as possible. It is probably the case that the widespread acceptance and sales of laptop computers have been due, in large part, to the improved battery powered operating life offered by the lithium-cobalt-ion rechargeable system as opposed to the previous systems based on either nickel cadmium or nickel metal hydride systems, both of which worked, but both of which had shorter use times between necessary recharging cycles, and lower operating voltages, and were hindered by the necessity of not allowing them to be discharged below a certain level. The lithium-cobalt-ion has some of the same limitations especially with regard to a baseline below which a discharge may not go without permanent damage to the battery and limited temperature ranges for efficient, or safe, operation, but innovations in built in computer management of these issues has now resulted

in the realization of routine practical performance superior to that of its predecessor technologies.

Unfortunately, as anyone who reads the papers knows, lithium-cobalt-ion batteries have a known tendency to overheat, and, it has been shown, that they can catch fire. Therefore it has not been possible for car makers to simply ask lithium-cobalt-ion battery makers to scale them up to a size and power level necessary for the operation of a *mass produced electric or hybrid vehicle*, which would require the *mass production of a battery the safety, or reliability, or both of which is at question*. Thus all of the makers of mass produced hybrid vehicles continue to produce and rely upon the safety of nickel metal hydride batteries while telling us that they will 'soon' produce electric or hybrid vehicles of greater range and better performance by utilizing a 'so far un-named,' or, at best, an undetermined, safe and reliable lithium-ion battery technology.

All of the mass production car companies that have pronounced on the matter have adopted the following strategy to achieve a 'next generation' hybrid and/or an electric car: Each one of the OEMs has chosen one *or more* lithium-ion battery technology development companies, usually a start up based on a particular non cobalt technology or a technology using a solid rather than a liquid electrolyte, frequently delivered as a polymer 'film.'

The OEMs have paired these companies with an existing supplier of mass produced batteries and charged the existing battery mass producer with the task of determining when and how to bring the particular lithium ion battery technology to them as a mass produced safe and reliable component. Note well that *no one in the world has yet to make a lithium battery technology of any kind that is suitable for operating a vehicle which can be mass-produced economically, and outperform a vehicle equipped with the nickel metal hydride batteries which are today routinely mass-produced by several Japanese and Chinese manufacturers*.

Toyota has stepped back from its original announced intent to introduce a next generation Prius with a 'lithium battery; Honda has announced that it will introduce its Prius fighter small hybrid with a nickel metal hydride battery pack, because, Honda's CEO has stated, "The lithium battery is not ready for mass production."

Many Suppliers, Multiple Technologies

The answer is that the customers for solar grade silicon are treating the various producers of UMGSi and their processes analogously to the way that the OEM car makers are treating the lithium battery technology companies; the customers for solar grade silicon are choosing suppliers by the initial and inferred results of their various processes for upgrading metallurgical grade silicon.

Germany's Q-Cell, for example, currently the world's largest manufacturer of solar cells, has chosen to support Canada's Timminco as a supplier, along with Norway's Elkem, as is pointed out in Q-Cell's [report](#) to its shareholders for the first quarter of 2008. I believe that, so far, 100 tonnes of UMGSi, has been shipped this year by Timminco to its customers including Q-Cell, which has reported openly that it has seen no problems of quality, repeatability, or longevity (service life degradation) with UMGSi from either Timminco or Elkem.

Another major customer for solar grade silicon, BP Solar, is reportedly [sourcing](#) material from RSI Silicon Products. The private company which has an award-winning proprietary process for making low-cost solar grade silicon (\$7-\$9 per MT). What is especially interesting is that RSI is reported to have sold its production for \$100/kg.

There are also other UMGSi manufacturers who have their own customer 'cheering sections' for their new or revolutionary, and all proprietary, processes for producing UMGSi. These producers include Hemlock, Wacker, REC and MEMC. My guess is also that many of the customers for any and, perhaps, all of them are hedging their bets by contracting with more than one supplier. This is simply because the only true test of a technology is whether it can perform economically, provide on-time delivery, and be used to produce products that do not fail due to 'bad' raw materials.

In other words the only sure test to allow us to distinguish among all of the competing proprietary processes announced by the various companies attempting to build market share is the test of the market place. The end users of UMGSi will ruthlessly root out those suppliers who cannot meet price and delivery targets for materials that meet the customer's specifications.

Long-Short War of Timminco

There is currently a wildly raging war between Timminco longs and shorts. The shorts, led by Manuel Asensio, are skeptical of Timminco's claimed proprietary process, and they're alleging improprieties in the promotion and ownership of the company.

Whilst it is clear that too much sell-side "analysis" has been produced without audit-proof facts to back up the super-charged price targets, it's inappropriate to declare Timminco's technology a fraud. Most companies are habitually secret about intellectual property, and with good reason. That does not exempt Timminco from coming forward with more satisfactory disclosure and proof of patent, especially since it has achieved off-take agreements, and as well-pedigreed competitors enter the market. Timminco has nothing to lose by opening its process to verification to kill the long-short war.

Trust but verify; Timminco owes its shareholders an unambiguous and transparent bankable feasibility study on its UMGSi process. At the same time, Q-Cells and PHOTON Consulting have a vested interest in ensuring that a BFS matches their contributions to the hike in Timminco's share price. Last but not least, the sell-side analysts claiming to have performed "extensive due-diligence" on Timminco need to be aware that shorts have put large targets on them. Short selling interests are counter-promoting Timminco as the Bre-X of solar silicon, and the implications are dire for securities regulators, and analysts and their firms if there is a blow-up.

The market is going to find out within a year. There is only one winner between the two options. Either the shorts will be right or the longs will be right; a year from now one of them will be utterly discredited because the middle ground has been destroyed.

As for the accusations of pump-and-dump behaviour driving Timminco, along with allegations about shady backgrounds and ulterior motives, let's stay grown up. Anyone investing in a multi-bagger stock with a claimed proprietary technology needs to do due diligence or stay out of the game.

We don't feel sorry for anyone who invested in Timminco unless they have a provable case that they were led astray. Consumers of sell-side analysis and the related brokerage pressure may have a beef, but they'll smack those firms if they have been misled. Timminco is a class of stock trading in a segment of the Canadian market that is not for milquetoast investors. Canadian promoters know how to take money from investors, and investors should know that they're playing defence in the retail versus wholesale structural imbalance that affects all securities markets.

Caveat emptor needs to mean something for once.

At the same time, *Resource Investor* disagrees with the hysterical protectionist attitude about short-sellers. Sellers are just as important as buyers, and short-sellers provide a valuable service to investors. In this particular case, short interests are going out of their way to provide an alternate story. Even in a war of misinformation and hyperbole, investors are not stupid; they'll sort through it and pick the story they like.

Have insiders made out like proverbial bandits on Timminco? You bet. Are they cashing out? Yes. Are some of the characters, motives and arrangements somewhat unqualified for sainthood? Probably. Does that logically require investors to conclude there is a fraud? No, only to remain cautious and read the market signals as they would for any stock, and to *know* what they're buying and selling.

Demand and Supply

If there is truly a demand for 26 gigawatts of solar cells in 2010, as Photon International predicts, then we have a sellers' market for specification meeting, on time delivered, in the quantity ordered, solar grade silicon such as no one has seen before or could even have imagined.

There has been much talk among financial journalists of a market scam in UMGSI, but the demand for solar grade silicon is real enough, and the makers of electronic grade silicon cannot meet that demand by using their standard processes with the volume limitations of their manufacturing techniques. Also it is extremely unlikely that the customers who do have access to the proprietary processes are as easily fooled by fake "Potemkin" processes as are investors who listen to various market scam artists. The customers are already voting with their check books.

Unless one or more of the mass production processes for producing UMGSI works it will not be possible to achieve a production of 26 gigawatts of solar cells in 2010. Perhaps someone ought to create, or perhaps there already is, a UMGSI production fund that invests in all of the announced technologies to hedge bets.

One last word of warning. It is easy and very cheap to build a 'plant' to convert corn to ethanol; this has been going on for hundreds of years all over the world. The current ethanol industry is just the continuation of a subsidy driven scam that has been around since Agribusiness found out how to purchase political influence. The lithium battery industry has a much higher cost of entry, but every Ph.D. who has looked at battery technology seems to have an idea on how to improve it, and they have found that with the 'right' credentials and a few graduate students they can get venture funding or at least get their local investment clubs to put up seed money.

When the issue is producing "solar grade" silicon directly from metallurgical grade silicon the cost-of-entry is very steep. You need an expensive core production facility, filled with electric arc furnaces and skilled worker, engineers, and scientists to make metallurgical grade silicon from raw materials that must be carefully sourced and paid for in advance utilizing enormous amounts of electric power that must be sourced and paid for as used. After doing that you then need to perform 'million dollar' experiments to try and scale up laboratory processes, and then, if successful, you must raise money to build a full scale plant and then 'prove in the plant,' i.e., make it run efficiently and profitably. All of this is usually done before any customer commits to volume purchases.

The end users of solar grade silicon know that time is against them; they know that only some of the current contenders will be successful both with their 'processes' and with their business model. Yet the market is demanding solar cells. The customers are now voting with their pre-orders. Make note of who is getting the pre-orders, who they are coming from, and how well the producers are meeting deadlines of delivery, quantity, and quality, at the agreed price. This is the only test of whether or not a UMGSi supplier, or a lithium ion battery supplier, is a winner.