



**“Luck is a matter of preparation meeting opportunity.”**  
**Seneca, Roman philosopher**

## **An Extraordinary Week for Lightning Hybrids**

The success we have seen over the last three months with the reliability of our product and efforts to reduce the cost of our system by half in the next nine months has encouraged us to put a renewed drive on marketing. The first phase of that was to drive our bus to the High-Efficiency Truck Users Forum (HTUF) put on by CALSTART in Chicago October 7<sup>th</sup> to 9<sup>th</sup>. The show was relatively small with about 400 attendees, mostly advanced vehicle industry experts and analysts. The discussions regarding new technology validation and testing, and new funding sources for fleets were valuable to our team, however we were unhappy that there fewer large fleet representatives than had been promised. However, our perspective changed on the second day of the show when we met with one of the speakers, Mike Britt, Global Fleet Manager for UPS. Mike has been our key contact at UPS, though we have never met in person, and phone discussions from three months prior had stalled.

At the show Ride & Drive, we were given 30-seconds to introduce our vehicle. My introduction started with the statement that “Lightning Hybrids hydraulic hybrids is the only high-efficiency vehicle of the 15 in the ride and drive that had been driven over 1,000 miles on its own power to participate -- a testament to Lightning’s reliability, versatility, and lack of need of new infrastructure like charging stations or CNG fill stations.” That set the stage for an amazing ride-and-drive event with over 30 drivers driving the Lightning shuttle bus, including the CALSTART event organizers, all of which were impressed.

Mike and his team from UPS attended the Ride & Drive and came to look the vehicle over, talk with our team, and take a short drive. He was impressed with the system and its maturity, and agreed to talk further. At the cocktail party following the Ride & Drive, **Mike Britt agreed to purchase 10 Lightning Hybrid systems for California UPS trucks for a nine month pilot.** He asked us to choose either a Ford or Freightliner

platform, and said he would like to try our system combined with LPG (Liquid Propane Gas) for the pilot. **If UPS adopts the Lightning product for a majority of its fleet, it will be a \$1+ Billion customer for Lightning—demonstrating the pure scale and opportunity that Lightning has.**

After HTUF, we drove the demo bus from Chicago to Detroit, where we met with **Dick Cupka, Ford's Global Sustainability Director for Commercial Vehicles**. Dick has not engaged with us for more than a short discussion since he drove our GM demo vehicle at the Work Truck Show in March 2012, but when we mentioned the opportunity to partner with us for the UPS pilot, he agreed to see us. It was the first time that Dick had driven one of our vehicles in over two years, and his first comment was: "Two years ago your system was a bit crude, so I haven't paid much attention - but this system is clearly ready for prime time - I am very impressed!" Dick called the director of engineering at Ford and told him about our system, and then called the Ford Hybrid Engineering team members to come take a drive. They were also impressed and commented that we had become what they wanted to become ten years ago, before Ford axed funding for their hydraulic hybrid project<sup>1</sup>. **Dick and his team offered to provide us all of the engineering support we need to move our product forward, and offered to provide test vehicles for us as well.** We believe we have finally crossed the barriers at Ford, which will significantly accelerate our efforts on their platforms. Ford owns 70 percent of the medium-duty commercial truck market in the US, and is focused on growing their heavy duty market, so they are clearly poised to be a great partner for us.

We left Ford and headed to **Ricardo**, an engineering consultancy with over a century of experience focused on high efficiency, low emission, vehicle innovation implementation. They had invited us to visit following a trip they made to our facilities in Loveland in August of this year. Ricardo brought ten people to our meeting, including several high level executives from their United Kingdom Headquarters who happened to be in Detroit that day. They all met with us for three hours, and then took turns driving our demo bus. They were all very impressed with the bus and believed it was ready for wider-scale commercialization. We discussed four initiatives with them:

- 1) They are interested in licensing our product in Europe. They have decided to grow their powertrain division and are looking for specific products that they can sell to provide a new platform for their engineering work.
- 2) They have a military contract for buses that requires a hydraulic hybrid solution which we talked about at length. Since then they have requested a quote for our

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<sup>1</sup> See this article for more information regarding that project in 2004:

<http://yosemite.epa.gov/opa/admpress.nsf/b1ab9f485b098972852562e7004dc686/a1385de5a863aaca85256e5100620a97?OpenDocument>

system on a Thomas Built C2 bus (we just designed and built a system for this platform for National Express—so it is right in our sweet spot).

- 3) They are interested in partnering with us to replace all the BAE electric hybrid buses which have had significant problems across the board in New York, Toronto, and Montreal with Lightning hydraulic hybrids. This is a \$100M opportunity.
- 4) They would like to bid on doing the engineering and build work on our power transfer module (PTM). Their name (or Timken's) attached to this component will provide credential, reduce the cost from \$6000 to \$1500 each, and provide increased reliability.

Following our meeting at Ricardo, we drove the bus four hours east to Canton, Ohio, to complete our week with a meeting on Friday morning with **The Timken Company, which designs and manufactures** bearings, mechanical power transmission systems, as well as a broad spectrum of related products and services. They brought nine executives to the meeting, including their directors for M&A, their CTO, and their directors for automotive and aerospace engineering. They all drove the Lightning demo bus and met with us for three hours. We discussed three initiatives with them:

- 1) They would like to be the supplier and engineering team for our next generation PTM—again reducing the cost by \$4500 each and increasing reliability.
- 2) They are interested in licensing our product for India and Europe. They have major operations in both geographies and are looking for key technologies to grow into in the transportation markets.
- 3) They are interested in investing in Lightning. We proposed a \$2 million investment in the current round we are raising.

Following the meeting with Timken, we drove on cloud nine to the airport where we left the bus for one of our team members to pick up and drive back to Loveland. One important note: **The bus made this entire trip without a single mechanical failure.** Every one of the demonstration drives went extremely well and impressed all the drivers. This is clearly a huge milestone for our reliability and a testament to the work the team has been doing over the last ten months to improve reliability. Further, each of these meetings and the relationships we are building represent a potential exit opportunity—to partners who now see the size of the market opportunity and see clearly that our product allows them to participate in a large market opportunity with good margins and excellent growth opportunities. **We can clearly see now that we can be a \$100 million business in 3 years—and others are beginning to see it with us.**