



Advanced Battery Applications Weekly

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Interview with John Waters, CEO and President of Bright Automotive:

Please describe Bright Automotive.

Bright Automotive has developed two businesses: 1) our IDEA program is developing a new breakthrough grid-connected vehicle platform for the B2B (fleet) market, while our eSolutions business is providing engineering and consulting services to companies transforming their own business models towards electrification. Our company is focused on breakthrough innovation with IP centered on software controls and system integration leveraging an experienced team that has launched numerous vehicles and energy storage solutions in their careers. We are based in central Indiana, which is increasingly being known as the "Silicon Valley" of vehicle electrification (someone mentioned it should be called the "Lithium Valley" in reference to multiple lithium and other battery companies).

The Indianapolis region is a technology cluster of companies such as Bright Automotive, EnerDel, Delphi, Allison, Remy, Altairnano, iPower, with the capabilities and know-how of scaling batteries, electric motors, and power electronics.

Many electric-vehicle start-ups have failed, what is Bright doing differently?

Hiring the best, most experienced electrification talent; aligning with best-in-class supplier and business partners (including Duke Energy, KUKA, EDAG, Multimatic, Bosch, Getrag, and many others); and (as I'll explain in the next question) we have design our vehicle and system solutions around economics and functionality – not just around advanced technology or being "green."

What is the go-to-market strategy and value proposition?

For the IDEA program, the go-to-market strategy is developing a purpose-built, lightweight, highly-integrated, PHEV platform for commercial and government customers in North America, and soon to follow in Europe. Commercial and business customers have been (and for many people still are) viewed as "second-class citizens" in the automotive market. For Bright Automotive, fleet customers are our core focus. They are the lifeblood of our company; they are why we started, and why we continue on our mission to bring the IDEA to reality. It's historically confounding why fleets are largely neglected by OEMs as fleets buy about 1 out of every 5 vehicles in the market, and they are smart buyers whom understand their mission needs and buy rationally. Fleet managers mostly use spreadsheets to evaluate purchase options where most consumers don't.

The value proposition is simple: fleets buy on the total cost of ownership (TCO, or the cost to buy, finance, maintain, fuel, and insure the vehicle), and the IDEA has the lowest TCO of any fleet vehicle in the light commercial truck market at current gasoline prices (even down to \$1.90/gal). This includes internal combustion and battery electric full-size vans, minivans, pickups, and crossovers. We're going to save customers money from day one. With the lowest TCO, customers are also getting a vehicle that has been "purpose built" designed around their functional needs. Our vehicle is designed to have best-in-class safety, ergonomics, durability, cargo access, and surprise-and delight features like our mobile office, all wheel drive, and integrated telematics and diagnostics. What you are probably noticing is that our core value proposition is about economics and functionality, and not about being "green". It does not mean that the IDEA is not green: it will be arguably the "greenest" vehicle on the market compared to vehicles it will replace.



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The IDEA will have the lowest carbon footprint of any production truck, will consume a fraction of the oil of most trucks, will incorporate state-of-the-art green materials, avoid a traditional paint shop, and be built in a highly energy- and water-efficient factory, among other green features. All of these, interestingly, support the business case of the vehicle. Being green is actually what makes the vehicle economic and functional. Our customers will enjoy (and be able to promote) incorporating the greenest vehicles into their fleets, pay the least total cost for them, and have a vehicle that will help them do their missions better. We feel that it is a pretty compelling value proposition. We incorporate this system thinking in our engineering services too.

How large is the addressable market opportunity?

We estimate 2 million addressable vehicles in North America and Europe per year. We have spent three years analyzing the market size and are highly confident in this number. We are planning for about 3% market share at our peak of the IDEA production (year 3) given that we'll be a new entrant with a new product--that's about 50,000 a year. We have the ability to tool up for more (and we break-even at a much lower volume), but if we hit our specs and targets, and fuel prices stay north of \$2/gallon, we've been told by multiple purchasing leaders in the fleet industry that we'll "sell as many as we can produce."

How many vehicles are currently being road tested?

Short answer: 2 working vehicles, 2 more on the way this summer.

We have a powertrain mule vehicle (our powertrain in another vehicle, this one a Dodge Caliber), a fully functional showcar (the one with write-ups in Autobloggreen and other outlets), and are currently developing a working powertrain prototype for the US Department of Defense (a VW Transporter conversion), and have just been awarded a contract to retrofit a US Postal vehicle. So, by the summer we'll have four vehicles.

Longer answer: We had to largely "pause" our activities, which were in full ramp, after the economic collapse in the fall of 2008, when our second round of equity funding was pulled the last week of September 2008, while negotiating final terms. We were on track, at that point, to have had 40 evaluation prototypes on the road by now. The economic collapse not only disrupted our plans but the immediate impact of economic-based transportation technology. Instead, we had to massively scale back our development while we've sought alternative funding routes, most prominently with the Department of Energy.

In 2009, essentially the government became the lender of last resort for every U.S. EV program. Fortunately, we acted fast. We were among the first five companies to submit applications and be "substantially complete" in December of 2008. But, believe it or not, while companies like Tesla, Nissan, and Fisker have received commitments on very large loans, we are still in due diligence, with no committed timeline for completion. We've spent internally thousands of man-hours and millions of dollars in this effort. Fortunately, the private capital markets are starting to thaw, and we've had a lot of promising progress over the last month in terms of raising new capital from private markets and strategic investors, including a handful of large OEMs. We hope to "reignite" our development activities in the next 3 to 6 months.

How much crash testing is left before the vehicle is deemed "road ready?"

Once the IDEA program "re-ignites" in full, it will be approximately three and a half years until the first IDEA rolls off the assembly line and into a customer's hands. During this time, Bright Automotive will undergo our best-practice, comprehensive product development process with our supplier partners to fully develop, test, validate, and scale our vehicle.



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This will involve building over 150 prototypes, recording millions of miles, and doing full crash-testing to meet all U.S. and European crash standards. We are targeting an overall "5 star" crash rating, which would be a first for a fleet focused vehicle. And of course, durability is second only to safety for our customers and the Bright IDEA will have world class durability on its structure and powertrain.

What is the battery sourcing strategy?

Given my history in the battery business, and the strategic importance of energy storage for our vehicle, I have put in place an initial dual-source strategy for our battery packs. We are currently engaged with multiple battery suppliers from around the world and will select battery suppliers that will partner with us in a successful and profitable path to production. We have significant battery cell, pack engineering and production experience in-house and will leverage this knowledge to ensure success in evaluation, testing, and selection. The battery integration area is a strength in Bright and we want to leverage this aspect.

Discuss the competitive landscape for Bright's target markets.

The landscape for the light commercial vehicle market in both North America and Europe is increasingly being dominated by total cost of ownership criteria as well as increasing emissions and efficiency regulations, with fuel efficiency being a primary driver of buying behavior. As a result, the competitive landscape is orienting towards efficient solutions in virtually every global market. Many OEMs are responding to this trend by offering smaller vehicles (all other things being equal, a smaller vehicle is more efficient), such as Ford's Transit Connect, and soon-to-be-released small vans from Fiat/Chrysler and Nissan. They are also offering pure battery electric versions of these small vans, which should have real world ranges from the 50-70 miles. We find customers driving 70-90 miles per day with heavier loads than these smaller vehicles can accommodate.

Bright is taking a different strategic approach in 1) we are developing a larger sized van, lightweighting it through a shift in materials and design strategy (carefully integrating parts and de-contenting) instead of downsizing, and 2) offering a plugin hybrid architecture instead of pure electric, which for our customers' missions has a lower cost and weight than a pure battery solution. The average daily distance for a full-sized van, for instance, is north of 80 miles a day in the U.S., which is above the real-world range of the BEV vans being released by Ford and Nissan. We think our offering of value, size, range, and tailored functionality will bring a strong value proposition to our customers.

How large do you envision the electric vehicle market (including autos and bikes) will be by 2015?

Bright Automotive does not forecast the overall EV market, as we see our solution more of a "better mousetrap" in the light commercial vehicle space, not as a hybrid or EV. On that note, we see the LCV space in North America and Europe recovering to its pre-2008 levels in 2011, with some additional growth over the next four years (to 2015) to "catch up" for three years of below-replacement level buying. The overall market should grow enough that our market share goals will likely come out of sector growth, not from other OEM's established shares. We see no fundamental limitations in how our market (the 2 million addressable vehicles a year in Europe and North America) could not all share an architecture like the IDEA's. The penetration will depend on how fast we can get our solution to market, and how soon after our competitors will finally catch on and create their own versions of our vehicle. But by that time, we will have established ourselves in our core markets, and have plenty of variants in our cycle plan, and new product concepts in our pipeline.



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Any closing thoughts?

In the end the IDEA is indeed a powerful "idea" for making electrification profitable, but on the road it will be a daily workhorse. The IDEA is designed for robustness and reliability, utilizing a carefully selected parts bin from a major OEM, gold-standard Tier-1 suppliers, materials that don't rust or corrode, an AWD drive system, and a mechanic-friendly layout. The vehicle will also have significant societal benefits. It's projected rated CAFE employing likely EPA/NHTSA standards is so low, that it is "off the axis" of the government's published charts, which don't show any vehicles in 2016 able to achieve lower than 200 grams CO₂/mi in their tests. Our vehicle should be significantly below 200 grams/mile, which means we are going to generate a lot of CAFE credits when we are in the market. Finally, because of the IDEA's fundamental size, efficiency, and miles driven, it will save society significantly more oil and carbon per vehicle fleet than, say, an "eco-luxury" sedan. This is why we think the IDEA's simple, economic, straightforward and high-volume electrification strategy ultimately makes the most cents, and sense.