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Evercore ISI Fireside Chat with Dragonfly Energy

Transcript
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James West, Evercore ISI:

So good morning everyone. And welcome to today's fireside chat with Dragonfly Energy CEO, Dr. Denis Phares and CFO John Marchetti. I'm James West. I run the sustainable technologies and clean energy team for Evercore ISI. Dragonfly Energy was founded by Denis. And is a leading energy storage company that provides sustainable lithium battery storage solutions to phase out lead acid batteries and facilitates the creation of next generation solid-state batteries, really to address tomorrow's energy storage needs. Since the incorporation in 2012 in Reno, Nevada, the company has developed an innovative lithium ion battery storage technology and changed the way RV, marine and off grid customers power their life cycles. Lifestyle, Excuse me.

Denis, has been with the company since its founding. He earned a Bachelor of Science in Physics from Villanova University. And then obtained his PhD in engineering from Cal Tech while working extensively on advancing renewable energy technologies. And he began building with lithium ion batteries out his garage while working on his MBA at the University of Nevada.

John Marchetti is the company's CFO. He brings over 20 years of experience in the technology and financial services industries. Prior to Dragonfly, John was most recently the managing director and senior research analyst at Stifel. And prior to that, he was Chief Strategy Officer of Fabrinet. John received his BA in Political Science from Virginia Tech and MBA in finance from the University of Connecticut School of Business. So Denis and John, thanks for joining me today.

John Marchetti, CFO Dragonfly Energy:

Thanks for having us.

Denis Phares, CEO, Dragonfly Energy:

Nice to be here. Thanks, James.

James West, Evercore ISI:

Great. Well, why don't we start off by you telling us how Dragonfly Energy started. Maybe give us the high level overview of the company.

Denis Phares, CEO, Dragonfly Energy:

Well, as you noted, we started about 10 years ago actually. And we started very much as a technology company focused on lithium ion battery manufacturing processes. And it really revolved around some work that I had been doing for many years on aerosol mechanics and powder processing. And so it's really a dry process for producing lithium ion battery electrodes that extended into the production of all solid state lithium ion batteries. But we did something that was very unique as a technology company. We went to market very early on with a line of battery packs that we basically assembled in-house. And we attacked a couple of markets that were ripe for the taking in terms of dissatisfaction with the incumbent lead acid battery technology.

So, we basically went to market with this line of batteries we branded battle born batteries after the battle borne state of Nevada. And that business really took off over the last six, seven years. And it went a long way towards financing the development of the technology. So now, Dragonfly Energy is very much at an inflection point in terms of the technology because we are ready to deploy the new manufacturing technology to produce cells, while at the same time we are really expanding the downstream markets that we are addressing to replace incumbent lead acid battery technologies as the storage solution, which really explains why we're here today.

James West, Evercore ISI:

Okay. Got it. Well, there's clearly a lot of competition in battery storage, the battery storage market, that will enable the clean energy transition. How does Dragonfly sit within the industry and what differentiates the company?

Denis Phares, CEO, Dragonfly Energy:

We're unique in a number of ways. First of all, I think the fact that we did go to market so early, we do generate revenues. We generated \$78 million of revenue last year while still being an active, innovative technology company. I think it really sets us apart from your typical provider of energy storage batteries now, especially in the markets we're in: RVs, boats, soft grid solar. Those consumer markets that we're in now.

Our focus on technology and the type of technology we're focused on is unique as well. Because we're not really developing new chemistries. We're just focused on reducing the cost of energy storage through innovations in manufacturing. So we're not making a new cathode, we're not making a new type of electrolyte. We're just applying new processes to make batteries using chemistries that already exist.

So that really does set us apart in terms of other battery technology companies. But overall, the combination of these two things and where we sit today, makes us pretty unique in our ability to leverage both direct to consumer sales, sales to original equipment manufacturers, especially RVs, and developing new technologies and filing patents. So we're a very comprehensive company in that regard.

James West, Evercore ISI:

Right. Okay. Well, I talked to a lot of investors that want to talk about and discuss the future of storage technology and the market is growing so rapidly that I think many technologies will be needed to enable the transition. What's your view and how you see the energy storage market have all been over time?

Denis Phares, CEO, Dragonfly Energy:

We're seeing today the weakness of the power grid. And-

James West, Evercore ISI:

Sure.

Denis Phares, CEO, Dragonfly Energy:

... to stabilize the power grid from where it is now let alone where it's going to be with the incorporation of so much more intermittency that comes with solar and wind, requires so much energy storage. And so I really do believe that we're going to need every technology that's out there. Both on grid and off grid. So there's been a lot of focus on electric vehicle batteries. When it comes to lithium ion batteries, we as a company believe that lithium is going to play a huge part in stabilizing the grid. And that's why we're focused on not just storage, but the cost of storage. The levelized cost of storage.

Lithium batteries are uniquely energy dense so they can be deployed widely in people's homes. We deploy them now in mobile systems like RVs. But the grid is going to need everything from gravimetric storage to new types of energy generation. Certainly a lot more renewable energy. More solar, more wind. But in terms of storage, I really do think that we are going to play a role in stabilizing the grid with our new technologies. But every technology will. Whether it's flow batteries or the continued proliferation of pumped hydro and other gravimetric storage, molten salt, hydrogen even. I think it's going to be all encompassing. So that's my view of the future of energy storage.

James West, Evercore ISI:

Sure. I think that's pretty consistent with ours as well. You mentioned several times in your and I's discussions that lead is dead. And lead based battery technology must be replaced with lithium ion technology. What is Dragonfly Energy's strategy to revolutionize this space? And what do you see as the benefits of using lithium ion based technology, especially from an ESG and a performance and an economic standpoint?

Denis Phares, CEO, Dragonfly Energy:

Well, I mean just from an ESG standpoint, lead's an environmental nightmare. It's a heavy toxic, heavy metal that is responsible for contamination worldwide. Horrible health effects. Now granted most lead acid batteries are recycled as they should be, but the fraction that are not create havoc. And so it really behooves us to displace that as much as we can and replace it with lithium iron phosphate, which does not have any toxic metals. It does... It's not corrosive.

In terms of the benefits to the end user, it's about one fifth the weight. It lasts so much longer. The cost of ownership is lower. There's not a lot when you put it up against a lead acid alternative where lithium ion doesn't really come out on top. We've been able to share this information, this story, with a large number of consumers in our efforts online through social media. And that has really resonated to the point where we have really led the charge in changing an industry. And I'm talking about the RV business. It used to be completely dominated by lead acid batteries as the onboard house storage technology. And I believe that flip has switched. That switch has flipped. I'm sorry.

And that is already prevalent throughout the aftermarket, but now even among OEMs, RVs are being delivered to dealers with lithium-ion batteries on board, and that's very much a new thing. So, we're excited to have contributed to that change and help mitigate the continued prevalence of lead acid.

James West, Evercore ISI:

Got it. Okay. And so, I mean, lithium-ion is widely adopted, I know in the EV space, for example. Could you tell us about what differentiates your lithium-ion phosphate batteries from the cobalt, nickel, manganese, from lithium-ion batteries?

Denis Phares, CEO, Dragonfly Energy:

Sure. The focus of lithium-ion battery research really has been on increasing its energy density and its power density so that it could really be charged very, very rapidly. And energy density really comes... it's determined by the chemistry of the anode and the cathode. And lithium phosphate is not the most energy dense cathode material. It's heavier, it creates a heavier battery than a nickel, cobalt based battery, an MC or NCA. That's why those nickel, cobalt based battery chemistries have been so widely used in electric vehicles. Because ultimately, you want to go 3, 4, 500 miles on a charge. Maybe 700 miles if they can make a lithium metal anode.

So that has not been our focus, because with energy density there's a penalty when it comes to both safety and longevity. And safety and longevity are the most important parameters when you're talking about a storage battery. So, we want to be able to deploy large systems basically in your living space, whether it's your home or your RV or your boat. And ultimately, it will pay off economically if you can cycle the battery for thousands and thousands of cycles. And that's where lithium iron phosphate really performs better than an MC type chemistry. So, there's the propulsion chemistries, there's the storage chemistries, we've always been focused on storage.

James West, Evercore ISI:

Right. Gotcha. Okay. Okay. And maybe can we dig a little bit deeper into how the technology works and where it's most likely to be deployed?

Denis Phares, CEO, Dragonfly Energy:

So, in terms of storage, we are looking at scenarios where you are cycling the battery from empty to full frequently. That's where the chemistry, lithium iron phosphate can cycle many, many times. In terms of an anode graphite, which is the conventional anode material used in almost every lithium battery you'll see on the market today, can cycle many, many times. But it's heavier than a silicon alternative or a lithium metal anode alternative.

But again, we are focused on those storage applications where the battery has to cycle many, many times. So right now, the storage solutions we've focused on are very much consumer driven, RVs, what you put on your RV or on your boat to power your house system, all your electronics, all your appliances. We're also looking at some off-grid solar systems. And our footprint in off-grid solar has been growing.

Ultimately when we deploy the solid-state technology, which is going to be a very similar chemistry, but non-flammable, we are looking at grid tied storage in basically every building, in every home, in every business that is meant to stabilize the grid regardless of how much inconsistency is on the grid. So, that's really our focus, is to create a smart grid where energy can be more efficiently transferred from anode to anode, basically like an energy mesh. And in our view, what we require is a battery that is very safe in terms of very low flammability, and a low levelized cost, so that when you combine it with the cost of making electricity from solar and wind, we are on par with the cost of burning fossil fuels.

James West, Evercore ISI:

Right. Okay. And could you maybe talk a little bit, Denis, to the various industries where your batteries are being used, or really where you're seeing the most traction currently?

Denis Phares, CEO, Dragonfly Energy:

So, as I mentioned, we are very big in the RV business. That ultimately has been solidified with this partnership that we recently announced with THOR Industries, the world's largest RV manufacturer. So we really feel like we've done very well in terms of gaining traction in the RV business.

The marine business, it's a similar application, but now you're powering that the house in a boat rather than on an RV. And we have been growing in that business as well. But in terms of the transition from lead acid to lithium, that industry is a little bit behind. Those standards for applying lithium are just coming out now. So, we see a lot of growth in the near term in marine.

But I have to say the most rapid growth that we've seen is basically off-grid solar systems where folks have an array of solar panels, maybe a small home or a tiny home, and they need a backup. They're not on grid. They need a backup to take that electricity that's produced during the day and deliver it throughout the night or when the sun is not shining. Those three markets comprise the majority of our current business, but we do see a lot of room for growth in those markets and in some adjacent markets as well.

James West, Evercore ISI:

Okay. Okay. Well, you have over 40 granted and pending patents in a pretty robust portfolio. Could you share any details about Dragonfly's research and development strategy over the next five years? And then we also have a similar question that came in from the audience is, can you discuss what patents the company had to protect the technology and is the moat created by these sufficient?

Denis Phares, CEO, Dragonfly Energy:

Well, my background is in academia, so I've been sort of very in tune for most of my career in terms of developing new technology and how to protect that technology. So, we file patents early and often. And the moat surrounding our dry deposition electrode manufacturing technology and its application of solid-state battery production is very strong. So we feel very, very confident in the patent protection that we've implemented throughout the core manufacturing technology.

In terms of our strategy, we very much follow the science. So we continue to innovate, whether it is in terms of the core manufacturing process technology or the development of new battery packs or new accessories. Anything that we do here, we will explore its patent ability and we will pursue the patent globally. And so, this is something that is a very important part of this business, and we will continue to do that moving forward. As we innovate, we are actually solidifying the processes that we have in-house to determine what is patentable and to move quickly on anything that is patentable so that we can bring it to market as fast as possible.

James West, Evercore ISI:

Okay. Makes a lot of sense. What does the manufacturing process in entail here, and how long does it take to produce one of your units? And maybe if we could dive deeper, Are you vertically integrated or are you using contract manufacturers?

Denis Phares, CEO, Dragonfly Energy:

Yeah, maybe I'll turn that one over to John, actually. I'll give a chance to talk.

John Marchetti, CFO Dragonfly Energy:

Sure, Denis. Let me go ahead and jump in here. I think it's important just at first, to make that distinction between the battery assembly business that we... design and assembly business that we do today, versus some of the solid state work that Dennis is talking about that we continue to work through on the R&D side. So today, we do all of the assembly here. We do import the LFP cells. So those cells come in, and then we do all of the design and pack assembly here in Reno, Nevada. So, from a vertical integration standpoint, once we get in, obviously those raw materials or once we get in those supplies, we do all of the assembly, we do all the design work, we do all of the shipping and service and things of that nature. So we do all of that in house today.

From, I guess, a time to assembly, most of our batteries are typically assembled right around about an hour mark. And again, we're doing obviously more than one an hour, but it takes about an hour for a battery. We have done a lot over the years to increase automation within those assembly lines. And so we continue to modernize and get efficiencies out of that automation effort that we continue to do. We have a lot of in-house automation expertise that we use both for the existing assembly business, as well as working on the establishment of the solid state pilot line.

So from a vertical integration standpoint, I think that's more applicable as we start to think about our solid state cell technology. And there's a few different ways, I think, that we think about vertical integration over time. Part of that is, we have some supplier vertical integration that we're looking to do much more locally. Denis likes to say frequently, he didn't choose Nevada by accident, to start the company here. There's an awful lot of lithium in the ground. And we have agreements with folks like in Ioneer and then Aqua Metals for a lot of those off take agreements, and agreements that we have for supply of the raw materials that we'll need as we start to think about our own cell production.

We'll do all of that cell production here in Nevada. At least initially, we expect to do all of that here locally as we start that process. And then I think as you look further down, or further into the customer, there's really a couple of different ways that I think we can look at this technology evolving over time from a partnership or an off take perspective.

Some of it is, again, we import cells today to build batteries, and we may want solid state batteries for some of the markets we serve already. And we could put those cells into our existing pack business. So when we would just sell that as a different version of those batteries to existing customers and into existing markets.

We also have the ability, obviously, as you have a safe battery that then has a different cost profile, that opens up a lot of different markets from us. And there are potential for off take agreements and things along those lines, even just from the cell perspective.

And then I think over time, as that solid-state technology matures a little bit, there even potentially opens up to us a partnership or licensing type opportunities. Denis mentioned that the patent portfolio, the bulk of the patents are really around the manufacturing process itself. And that process is chemistry agnostic. And so there are opportunities for us, whether it's through partnership or something along those lines to make this process available to potential other battery providers in markets that we're not focused on, whether it's EV or other areas of the market as well.

So, there's a lot of opportunity, I think, as we think longer term about how those partnerships might develop.

James West, Evercore ISI:

Okay. Okay. Very interesting. And I have a question from the line, another question from the line. If you have off grid customers that have solar panels, are these a large market opportunity for you? And do you market or sell to them, or how do you market and sell to them direct or are you selling through retailers?

Denis Phares, CEO, Dragonfly Energy:

It's not a market that we have done a lot of outbound marketing.

James West, Evercore ISI:

Okay.

Denis Phares, CEO, Dragonfly Energy:

I think we get a lot of inbound attention. And it's something that I think surprised us, in terms of its growth over the last year. And it's something that we will continue to service in terms of designing systems and developing new processes, developing new systems and products. And it's becoming more evident that the reason this is happening is because folks want their energy independence. There are issues with the grid, especially in nearby California here.

So how we actually market into that industry, we do a lot of social media, and demonstrations, and education, and this is how particular group of customers does it. And we will publicize it. But it's not as cut and dry as advertising into the RV industry, for example. But it is something we're excited about, because it's clear that there's a change happening and we're happy to be part of it.

James West, Evercore ISI:

Right. Okay. Got it. And you kind of touched, or John touched on this earlier, about some of the partnerships and your investments in go to market strategies. But how do you plan on expanding your sales channel? And I know you made an investment in Thor recently. Maybe we could talk a bit about that.

John Marchetti, CFO Dragonfly Energy:

Sure. Yeah, I think Thor is a great example of it. And it really circles back to some of the points that Denis made at the outset, that the industry itself, I think particularly in the RV market, has really started to undergo this transition, where historically on the house side of the trailer and RV industry, those were delivered without batteries to dealerships or consumers. And they were left to figure out what they wanted to add onto those for battery storage.

And typically, they chose lead acid because that was what was available. And we certainly have done, I think, a good job of convincing consumers why that's not the best solution. And that has now driven up to the OEM level, where now we're seeing that behavior change where you're seeing them either being offered standard or options right off the production lines. And I think Thor is a great example of that.

I think Thor has always been very thoughtful about where the industry is going and what they see as opportunity to improve the experience for their customers. And I think this is just another step in that evolution for them. And so the investment they made in us, I think is because our visions are very much aligned as to where we see that LFP benefit for customers and consumers over time.

We talked a little bit about Marine and off grid. Denis mentioned that Marine's a little bit behind where we are in RVs. And I think that we've had some standards issued here over the recent past that I think will help with that adoption. There's some new products that will launch here in late '22, early '23 that are specifically for that Marine market that we expect to have quite a bit of traction as we look at there.

And even off grid, as Denis mentioned, part of that, I think, is we have RV customers who are increasingly adding solar to those RVs as they go out into to boondocks rather than have to find a hookup spot or things like that because that infrastructure hasn't kept up with the growth in RVs overall.

And those customers start to think about, well, if I can do it this way, why can't I do it at my home? And we've added actually an industrial solar sales team on the OEM side. We're starting to see some traction there as well. So there's a lot of opportunities, I think, in these nearer term consumer markets. When we think about expanding into the industrial markets over time, I think the nice thing for us is we're still talking about lead acid replacement. You start looking at work trucks, like ambulances, things of that nature, fire trucks, you look at industrial warehouse equipment, forklifts and floor scrubbers and things like that, you look at data centers, you look at some of the telecom applications, all of that is using lead acid today.

And so, there's a really big opportunity for us to really continue to sell the same value story into some of these markets. And fortunately for us, because of the research that we do here internally, it's typically a form factor adoption. It's not like we have to go back and redo chemistry every time we want to address one of these new markets. So there's a lot of opportunity with the existing battery assembly business, to move into some of these industrial markets.

And then as you start to get into the solid state, I think that's where the safety and the low levelized costs start to really open up some of the energy storage markets. And there will be some industrial markets too, I think where particularly that safety aspect becomes a key selling point. So there's a lot of opportunities for us both to continue to move on that consumer side, through our own efforts and through some of the brand partners and things like that that we do. But that OEM side is clearly becoming, I think, a bigger focus for us as we look out over the next several years.

James West, Evercore ISI:

Okay. And maybe sticking with the industrial expansion here, into work trucks and telecom, industrial equipment, - which will use LFP, and will others might need to use solid state? And maybe we could tie microgrids and that future of solid state into the same question.

John Marchetti, CFO Dragonfly Energy:

Sure. And I think it comes back to what Denis talked about, our focus on a solid-state storage battery, and not a solid state EV battery. And that's where that safety and low levelized cost are obviously some of the biggest drivers of that adoption. And I think that's absolutely a prerequisite, if you will, for what we envision from that distributed micro grid, if you will. To be that last mile storage solution where we're partnering with utility companies. Now that the battery can be safe and low cost, it can be mandated as part of the overall grid infrastructure. Things of that nature.

On the industrial markets, again, I think it's going to be somewhat of a mix of both. Like I said, there are benefits associated with LFP today relative to lead acid, where just moving out of that, whether it's less maintenance, less weight, you get better performance, you get faster charging times, they have a much longer life cycle, all of those kinds of things relative to lead acid from a replacement perspective, particularly as you're looking at large installations where the maintenance and service costs for those organizations is very high. Moving to our existing LFP solutions, even over a multiyear period is going to save organizations quite a bit of money on that side. But again, there will be applications, there are some work trucks where they won't move to LFP today because they're worried about some safety aspects. As that solid state battery becomes available, those are markets that will open up to us as well because of some of those safety features.

James West, Evercore ISI:

Right, right. When we've talked in the past, you've talked about the deploying of solid state battery technology in the next 12 to 18 months, and you've mentioned a couple of the potential markets for solid state batteries, but how are you pushing into this new addressable market?

Denis Phares, CEO, Dragonfly Energy:

The current battery packs that we sell, the traditional with the traditional lithium ion phosphate packs, we feel have a lot of room to grow before we even deploy solid state. All those adjacent markets that we were talking about, whether it's work trucks or telecom, I think could benefit from a good lithium iron phosphate storage system.

In terms of the solid state, that really becomes important where safety is critical. And I think that there are going to be some customers in those adjacent markets we're talking about, or even our current markets like RVs or marine, where safety is absolutely critical. And in that case, I think that the solid state alternative is going to make a splash there. It's going to be something on the market that does not exist, did not previously exist. And we do feel that there's going to be some rapid infiltration in our existing markets, but ultimately our long term goal is revolutionizing the grid, is really that last mile storage solution, that microgrid storage solution. We want to see these deployed in every house, and a home storage solution that is widely deployed is going to require to be non-flammable.

James West, Evercore ISI:

Right, right. No doubt about that. Well, last one for me guys. What are some of the key milestones for the back half or the end of this year, since we're in September, and then really looking into next year? I know you've got the dSPAC and you got a dry room, pilot lines, cycling data. Some of the key things that we should be watching for and thinking about as we watch the evolution of Dragonfly.

Denis Phares, CEO, Dragonfly Energy:

Well, you said it, we're trying to get public here. That deSPAC process is top on our mind right now, and we do expect that to be completed this year. So we're still on track there. And once we get across this hurdle, we're going to be heavily focused on building that pilot line. And we do believe that throughout the year, as we complete the pilot line in 2023, that's going to allow us to basically produce cells coming off the pilot line that we're going to be able to show people, and basically demonstrate both the safety aspect, the longevity aspect, the cost aspect. So this is something that we have to go through this process to get us to the point where we can execute on these R&D and pilot line related tasks.

James West, Evercore ISI:

Gotcha, gotcha. Okay. Well look, hey, Denis, John, this was great catching up again today and getting some more investors here interested, and learning about Dragonfly. I really appreciate you guys joining me. A lot of exciting things going on and lithium battery storage systems in general. Look forward to watching your continued progress and hope to talk again soon.

Denis Phares, CEO, Dragonfly Energy:

Thanks for having us.

John Marchetti, CFO Dragonfly Energy:

Thanks very much, James.

James West, Evercore ISI:

All right, thanks guys. Take care.