

Battery + Storage Podcast — Soaking Up the Sun**Speakers: Vaughn Morrison and Darin Green****Recorded: 3/26/26****Aired: 4/15/26****Vaughn Morrison (00:03):**

Welcome to the Troutman Pepper Locke *Battery and Storage Podcast*. I'm Vaughn Morrison. I have here with me today, Darin Green from Array Technologies. Darin, thanks for joining us and thanks to our audience for joining as well.

Darin Green (00:15):

Thanks for having me.

Vaughn Morrison (00:16):

So Darin, I thought we could start by understanding what Array Technologies does. I know ATI certainly from the solar space, but maybe you can give that overview for the benefit of our audience and talk a little bit about the connection between your technology and what you're seeing with storage projects that might be co-located with solar using your technology.

Darin Green (00:38):

Yeah. Thank you everyone who's listening in. And again, appreciate being given the opportunity here to discuss Array. I'm really proud of working here at Array. And really what we do is pretty fundamental to the solar kind of evolution. So as those who are familiar with solar panels, obviously you fly over on the desert, you look down, you see these big black glass ponds and that's, you might think they're water, but in reality they're massive solar farms that are kind of five miles squared sometimes when they get really large. But what Array does is we're a global provider of tracking and mounting solutions. So what we provide is steel infrastructure along with advanced technology that either has it laying flat in our fixed tilt solution via our company APA or through a tracking solution that has been around, at least with Array for over 30 years now.

(01:28):

So we are the longest standing tracking company, I believe in the Western Hemisphere. And what our technology does at its very core really just tracks the sun based on weather patterns, but as we'll dive into a bit more, you're starting to see the intersection of software and batteries start to become a much more impactful part of the equation where that ability to capitalize on weather patterns, nuances within there become that much more important. So Array, we consider ourselves kind of a core piece of the solar solution. You've got your modules, you've got the tracking solution or the mounting solution, which modules sit upon inverters, your DC cabling, wiring, et cetera. But what that means is, again, there's maybe for those who try to

figure out what sets one company apart from the other, there's kind of three core tenants of solar.

(02:23):

That Array technology set really is its true strength. And I think it speaks to this podcast in specific, which is really around innovating our future, which is through balance of system. And so whether you're the racking solution or you're the module, your ability to understand and integrate within the other pieces of the equation of the design optimization of the solution is absolutely important. If you are just thinking solely about how you can make the best widget, so to speak, and not thinking of the total overall system effect, you're really missing the true value of a lot of what solar developers, solar utilities, and EPCs start to value when they look at design solutions. We are a global company, founded out of Albuquerque, New Mexico by Ron Corio, again, a while back, but we've evolved to become a global provider and probably one of the top two in the industry.

(03:13):

But really what's made us outside of kind of a really simple, we call it engineered simplicity and kind of robust design is kind of our focus on our customer first mentality and culture. We really take a very proactive approach towards empathizing with customers, trying to understand what we're collectively trying to solve for, and then try to devise a solution that we can work together and scale as partners. So that really takes Array at a nutshell, but when you start to think through how Array starts to look at our solution and how it manifests into battery storage per se, you're dealing with customers now that are dealing with a much different environment than say they were dealing with maybe 15 years ago when they say the solar industry, or at least the utility scale solar industry really started to take off. So it's whereas you were trying to get initial construction back in early 2010s and trying to do it effectively, efficiently, and so on.

(04:12):

Now you're really looking towards lifetime lifecycle value and almost how utilities look at it. And so that's where batteries really come in because you have certain limitations, at least on some older plants and we could talk about repowering to some extent. But you start to think about how can I truly get the most value and ultimately the lowest cost of electricity by working with all the different generation sources. And when solar and batteries, they really work pretty much hand in hand together. And so historically you didn't have that optionality. Whereas today, I would say it's more uncommon than not to see a solar farm that doesn't in some form or fashion leverage batteries that allows you to shape the curve to produce the most energy.

Vaughn Morrison (04:53):

Thanks, Darin. Appreciate that overview. And just to pull a little bit on the thread of co-locating with batteries, does array's technology contribute to maximizing the ability of the solar to work in conjunction with a battery to provide an optimized energy services experience?

Darin Green (05:15):

I would say it absolutely does. And it's where we kind of have spent most of our creative muscle on the tracking solutions and each of them has a basic algorithm that allows you to track to the sun, which allows you to work within the batteries to make sure, for example, in California that you're storing the energy that you're producing obviously during the height of the day in the middle of noon, people aren't at home, they're not charging their cars, they're not using appliances, so that typically that energy would just be clipped and would be lost on DC clipping. And so now what our trackers do is you really take advantage of when do you flex that muscle in terms of your tracker to charge the batteries. And it's kind of a handshake between the two, but where it really gets interesting is as the more advanced we get with all the more advanced the software gets to really understand weather patterns, when do you have diffusive radiation, when you have different hail events that could cause damages to the site, when do you want to start really being proactive?

(06:15):

When do you want to get in advance of that so you don't put your plant at risk either from a severe weather event where you want to say, okay, we have some example, array has something called hail alert response, which provides real time market driven feedback on when potential hail issues could manifest at a site. At those situations, you don't want to wait till last minute. A lot of the new technologies now will allow you, like array, to immediately go into automatic stow, start to discharge the batteries to the grid so that you're A, capitalizing so you're not losing energy, but B, you're protecting your asset. And that handshake between the two is becoming so much more important these days. And then again, as you start to understand what are the differences, whether there's wind events or wind stow, or again, back to different types of radiation patterns, that communication between the two systems really helps you to maximize the energy you have under your curve.

(07:10):

So you can get the most efficient plant in the most protected asset, especially over the long term. That is really important. As these systems get older and older, your ability to kind of protect those assets when they need to be really helps to extend that life cycle for the benefit of the long-term owners.

Vaughn Morrison (07:27):

That's neat. It sounds like it's maybe one more lever that the owner can pull as part of overall energy resource package. Are you seeing intentional coordination around that, perhaps in the context of repowerings?

Darin Green (07:42):

Yeah, it's what's driving it, right? It's really a single factor. It's really this convergence of technology, just convergence of economics. Things have gotten much cheaper. There's performance data that's influencing decisions these days, and of course, the grid pressure

congestion. So you've got a situation where owners have this long years of operating history, especially when you get to repowering, and let's focus on utilities for now, because they're the ones who more or less control their own destiny. The challenging, the catch 22 with repowering is that what are you repowering? And typically, if you're repairing a high price PPA, most utilities are not going to be super friendly towards that, or they're going to reprice your PPA. However, if you're a utility, which is where we're seeing the most traction, they have unlimited capacity to repower their assets. And you're talking 40 to 70% of the cost savings versus new construction, leveraging existing interconnection, missions, et cetera, rights and lands, and especially when you don't have to deal with five craft labor because you don't have to go through no permitting cycles.

(08:42):

But at the same time, you have all this type of containment, congestion, pricing, volatility, it allows you to understand, and for asset owners understand what does good performance look like versus kind of what does it actually mean? And with the prices coming down, especially with a good example of what array provides, so one nuance we have is an octagonal torque tube without any pre-drilled holes. So this has been a really attractive feature for our utility partners because effectively it just allows you to take modules off. Again, you have to balance the electric currents from the inverters and the loads and all that stuff, but the ability to basically just swap out older panels with more or less new, more robust panels and really leverage existing infrastructure without having to navigate new holes, new things. We've done this and done it in Australia a couple of times.

(09:29):

We've done it in the US where the installation and reinstallation is actually pretty quick. And also it doesn't take a massive amount of labor to do it, so you can be very, very clean and efficient with it. But if you think about it, getting back to 15 years ago, panels were 20% less efficient, 30% less efficient, right? So if you start to put in more and more of these things, and especially if you're avoiding replacing things like inverters, obviously you also replace panels and things like that, but you're not having to rip up entire sites. All the earthwork, all the movement, that's what really kind of gets that labor and the cost of the construction build up. But what you're effectively doing, and this is what a lot of software systems are also doing, but it's almost like a bridge step to a repower is where you provide different ways to optimize the current solution, whereas a repowering allows you to really take that kind of leap step into really up-leveling as long as you've got the grid capacity to deliver that energy, really providing a jumpstep in terms of what you can provide in terms of not only reliability, but also in terms of the power output that you can provide, especially if you marry that with batteries and you really become an all resource solution when you start combining the two of those in a solution along with software.

(10:44):

So it's becoming very interesting and it's also modules don't just fall off. They don't just stop working. They obviously keep on working, but at some point when the cost to replace them is the payback is in a couple of years compared to a 30 year life cycle, that is a really big win for utilities who have fleets where they can just set it and forget it, so to speak. So hopefully that's helpful.

Vaughn Morrison (11:07):

No, that's really neat. I'm curious too, how much insight you have into the overall impact of the trackers on the improved performance of a broader repowering. What portion of that incremental production is attributable to the tracker technology and your role in that repowering?

Darin Green (11:28):

With software these days, we actually can monitor that pretty directly, but it's getting more challenging to specifically break that down. We can tell how a tracker is going to be working versus kind of the prior system, right? The thing that complicates it is obviously you've got most repowering, you're replacing the modules. So you've got a much more efficient modules technology, but you can break that out, so to speak. But what you can see is, as you can see in the tracking solutions, because of your ability to track it with software and the technology that's inherent, your ability to capture shoulder hour production, performance and diffuse complex, and the overall asset reliance is much more defined, and you're able to track it much more closely. So whether it's you're getting X amount more production, what's really key is that you're able to see how that production changes on the curved life cycle between different events and different weather patterns.

(12:24):

So you're really starting to see not necessarily the gross amount of the repower, which without question is going to increase, but also your ability to fill out effectively the curve and your ability to produce energy under all different scenarios. And then you actually can quantify. And what you also can quantify is your ability to show that interplay with the battery solutions. So I've rarely seen a solution, especially when a utility comes in where they've done a repower without a battery, because they basically go, it's like milk and cookies. They just go together perfectly. They're a great solution, especially with a repower, because then you're enabling the full extent of that energy LCOE to get unlocked, which is why utilities really love it. Outside of the fact they don't necessarily get the rate base more, which is kind of how hard sleepwork they get paid on.

(13:11):

But I mean, at the end of the day, it really, it amplifies their efficiency of their operating fleet and the reliability, to be honest. So long story short, there is ways to track it better. You can see things like trade adaptive backtracking and there's this fuse weather response, there's hail stove, there's all these things that didn't exist years back. And that interplay with the batteries allows you from a software and with machine learning to really kind of optimize how you think through these solutions because where in the past you might've had a structural solution, you really have an operating asset that is both software and hardware intertwined. So that ability to really work and learn from those patterns that are existing, both historical and projected, are becoming much more front and center, especially with the growth of AI and machine learning. It is something that is a big piece of how we sell our trackers and more strictly how we define the value inherent in them.

Vaughn Morrison (14:07):

That's really interesting. So just for my knowledge, is there a single controller that is dispatching the battery and the trackers and is kind of making sure that they're operating in concert?

Darin Green (14:22):

So there is multiple controllers on the site. The trackers have their own tracker control solutions that marry with the software to navigate when to stow, when to use solution. But I mean, if you think about it, the hardware's not that complex. If you think of like a little mini computer, right, what's really complex is the software integration, the IP around that integration. And does that software talk with the software inherent in the battery solution? 100%. That's the value of it. They really work very closely together. I mean, they have to, along with the grid interconnection and the grid variability, they're so well in tuned, but now there's so much data being shared between the two of them within reason, but that allows you to really optimize the flow between both because now it's not just a push information. You're getting it from both sides. You're getting push and pull, seeing when their batteries are kind of running low or where you want to heat them up.

(15:15):

Or even with an active stow tracker, sometimes you're in a situation where some batteries may not even be able to stow and you might want to kind of repower them just to use your batteries to charge up your active stow tractors. These are all the things that are just happening now and this confluence of this technology that's allowing this kind of optionality, which again, you in the past, I mean, 10, 15 years ago, you were just, some of these were stick built. You probably didn't forget about technology or software, but it's just one small piece of a tried and true technology that is just being kind of, you're really eking out all the benefits of it now because you can really work together in harmony with the different pieces of the whole solution set, not just the individual component anymore.

Vaughn Morrison (15:59):

No, that's neat. So in the context of a repowering, how involved do you guys get in the actual installation process? Are you just dropping off the trackers and hitting the bar or do you stick around and helps you through that installation process?

Darin Green (16:17):

We 100% stick around. Do we use all the installation? No, but I don't think you want us doing that. Let's take a step back. When you do a normal build, we'll have what we call a golden row where we work with the customers to understand how to build and just work through a couple of the, get some reps in, so to speak. Same exact philosophy holds true when we do a repower, but it's even more hands-on at the front. We're again, getting back to our customer first culture, we bear hug them and make sure everybody's comfortable and we go through and we'll monitor them, work with their teams and make sure the engine's running. But once it's up and running, it's pretty simple. And that's the beauty of at least the array system, is that it's not really that

complicated, right? I mean, I wouldn't say it's stringing Christmas lights, but effectively you're taking a bracket off, putting a new bracket on with it's already presized to the module, you space it accordingly and then your re-Chris or slight it up.

(17:10):

Obviously the engineering and all the design, you have to make sure all the electrical currents have been reviewed and repowered appropriately, but the actual physical labor part, which is again why it's so successful, is really not that complicated. And you don't really need to have a electrical journeyman doing it. It's really more mechanical, especially if you think about the advent of automation, which is coming as well, the ability to bulk wholesale change out some of these existing sites is going to make that even more and more attractive because your labor is, again, the most inefficient and no disrespect to anybody. It's just if a machine can do it and it's well defined, the future, I think this will become more and more of a commonplace solution as it becomes just more of a swap in and out solution set. So it is becoming more and more going towards that automation route.

(18:01):

But to your point, we work very closely with customers, especially on those first couple repowers so that they feel comfortable with it. And then we'll spend a week there and just make sure some, but usually by then they just want us to go. I think they get it at that point. It's like having your parents there. Connect

Vaughn Morrison (18:16):

To Albert here. Nice. I want to spend a little bit of time on everybody's favorite topic, Fiach, but perhaps I can start and maybe build up to that, but start talking about domestic content since the material assistance aspect of Fiat follows domestic content to a degree. Can you talk a little bit about First ATI's domestic content strategy?

Darin Green (18:41):

Yeah, it's down the fairway for us, to be honest. We built our platform based on a US content model out of the gates just by design. We were fortunate to think through that maybe initially, unfortunately because the costs were higher, but again, it gets back to durability, reliability, and just long-term performance. And we keep your suppliers, keep your customers close. And so that has been a philosophy that we held true. And that just allowed us to making the jump from kind of smaller parts and pieces that we have to swap out to be 100% domestic content for table one, it was not really that big of a lift at all. Now, getting the qualifications, getting the certifications, getting everything dialed down to the nth degree, that is really where more of the challenge is, I believe. But it's, again, when you've got 40, 50% of the tracker costs or 40 things is the steel and you're primarily a US steel buyer.

(19:36):

Again, there's so many tariffs, there's so much uncertainty in this market, you almost de facto defaulted to that model before it even became a material assistance solution, just because you had ... Imagine seeing what happened in COVID when cost just blew out on freight or when there's whatever our current political environment puts a tariff on this, this or that. It allows us to kind of at least try to mitigate that shrapnel. Now, obviously the flip side is that when you put tariffs on everybody who's a domestic supplier raises their prices up, which makes it even more challenging. And so you're immediately hit with that, whereas you may not know if this tariff hits. But at the end of the day, what Array has done and why it's been successful and why others are really starting to focus more on domestic content is because you don't know where things are going, but you're in a period of uncertainty.

(20:27):

The only thing you do know is that using a US supplier may be slightly more expensive, but the risk and the unknowns of not, you get to the point where it's an inflection point where it just really starts to make less and less sense, unless you're trying to be at the bottom barrel pricing. And this doesn't just get to the cost, this gets to reliability, repeatability, all that, using customers that you've worked with. So for Ray, it was really helpful for us to have customers since we were primarily all US and we've done 100% US content projects, now multiple of them, we not only can do it, but we feel confident because we've been working with the same suppliers over and over and over again. So that comfort level has helped us to navigate this period. Obviously the price uncertainty is a challenge, but I think another aspect of it that customers are starting to do is that for a while there was really unclear information about whether the material assistance would just be related to the tax credits or would that actually have to come into play in order for you to even get the tax credit?

(21:29):

Again, there started to be so much ... I mean, there still is so much uncertainty stacked on top of more uncertainty that going with a US solution, you don't have to be 100%, but having that primary US solution or at least offering customers the mental brain space so that they can go either direction very simply and not have to be out of the gates defaulting to one. And if something changes, they have to go in another direction, but you just give them both solutions. And that kind of just gives them a little bit more comfort that we're not just trying to kind of find the cheapest wiz bang out of the gates. We've got this pretty well dialed out in about 20 years and others probably will have a similar mindset, but this type of nationalism, it's not bespoke to the US. And we're seeing this globally too.

(22:12):

And I'm seeing it in different markets where I manifest, whether it's in Australia, whether it's in EMEA, you're starting to see similar situations and there's a push for that kind of local content anyway you slice it. Call it material systems, call local content, all birds of a different feather of the same, so to speak.

Vaughn Morrison (22:30):

Yeah. It seems to be the one thing the two parties can agree on right now is made in America. So good about to be in as a vendor. In terms of domestic content and material assistance compliance, what kind of documentation do you guys usually provide? Are you collecting mill certificates from your steel providers, putting together descriptions of your factory process? What is the package that you're usually giving a customer?

Darin Green (22:57):

Yeah, so people have ... It runs a gamut, but for ourselves, considering the large project finance projects that ours are put in, we have a big four accounting firm that's given us a formal should opinion. So there's multiple types of opinion ... Legal firms, you know exactly all these opinions, but most have a more likely than not. We have a should level opinion and we've been seeing this potential for over a year and a half now. So we've been working on this very closely, a cross-functional team internally and externally to get that confidence. And again, it's due to the fact that a lot of our tier one, and it's not everything under the sun. If you do a table one, which is based on the qualifications that very well defined, how deep the rabbit hole goes, that's some point you have to kind of think through the risk reward there of how, but that's why you work with one of these large firms to help kind of qualify that for you and give you and then get an opinion on your ability, should this go forward as a taxpayer, as a project owner, what's my comfort level?

(23:59):

And so providing a should level opinion again has been a competitive advantage for us. I think we're the only ones currently that can provide or have been able to provide that. Maybe others are as well. Some are doing some form or fashion of that on the smaller scale. But when you get into the utility scale, whether it's a module, whether it's a tracker, with an inverter, especially when it's a battery, especially with some of those, you really need something pretty robust, at least for domestic content. Now, Fiach is a whole different ballgame. I don't know if you want to dive into that topic, but that has its own bag of tricks that we can talk through, which is less straightforward. Let's put it that way.

Vaughn Morrison (24:38):

Well, we definitely should, but I agree with you. I mean, certainly where we've seen a lot of success, project financing, domestic content, it's been where the vendor has kind of a programmatic system in place, especially where it's brought in a credible third party firm to opine on things and just expedite the review process for the financing parties. That's a really effective strategy and should level certainly better than a could level opinion.

Darin Green (25:06):

Yeah. And just having that big four or something really robust, I mean, you got to spend dollars to save dollars and all that jazz, but take it for what it's worth for those on this call, just having a legal opinion from a lawyer, from a law... That and like 10 cents would buy a cup of coffee 10

years ago, you can't get any project finance done with that. So what we've seen is the tier one providers have spent a lot of money and a lot of time we're specifically really trying to dial this in so that people can move forward with at least some semblance of certainty or at least as good as it gets kind of view on their ability to qualify versus kind of taking an enormous amount of risk based on someone saying, "Okay, here's a letter." And again, you're not checking the box, you're working with the US taxing agency, which is for projects of this size, get a lot of oversight and insight into what kind of tax credits you're not paying, if you will.

(26:06):

So it's really important, can't stress that enough.

Vaughn Morrison (26:09):

Well, on that subject, maybe we can dive into the bag of tricks on FEOC. I think for you guys, you're probably most focused on the material assistance leg of the three, but of course that implicates for Array and your capital structure questions about prohibited foreign entities and specified foreign entities. Are you able to talk a little bit about how Array is approaching that?

Darin Green (26:31):

Yeah. I mean, more at high level, of course, but again, we were focused on material assistance. I think we've kind of, I wouldn't say completely put that to bed, but we feel pretty comfortable that we've got kind of as good as it gets positioned out there, better than most. But the FEOC is a little bit more challenging just because there's so much that has yet to be defined. For example, the use of public debt is one piece of FEOC and the prohibited foreign entities. Well, the problem is you have to attest that you do not have a PFE that owns a certain subset of your debt. The problem is when you go with the debt financing, banks structure it, they syndicate it and you have effectively no idea who has it within more or less. You can kind of figure it out, but it gets traded.

(27:23):

It's nearly impossible to know exactly who owns your debt or even your convertibles at some point in time. So that becomes a challenge, right? That is without question something that no one can state with confidence, at least unless they're not public, then you can stay with confidence, I'm sure, but that becomes a challenge, right? So when we provide any type of guidance, we will caveat that piece. The second piece is that is also a challenge, but the way that we kind of approach it is that, okay, there's prohibitive foreign entities and there's material assistance. Well, what we've thought through with our multiple advisors is taking a very similar philosophy as we do along material assistance where we think through, okay, we know that we can provide table one compliance for material assistance that we know where our suppliers are now to some sub-suppliers, sub-supplier, supplier, suppliers and all that stuff, can I go down that?

(28:21):

Of course, I can say redefine print and all that jazz, but

(28:25):

Knowing who we're working with, which customers we get from, and it being primarily a US solution, we are pretty comfortable that we've got a solid footing. Now, can we confirm in the absolute that that doesn't go down to X suppliers beyond that when I go out to every single part and piece beyond table one? Of course not. At least not cost effectively, you can't do that, but we can do with confidence and we can state with our customers that this is what we have done. And again, the key thing is not just giving someone a piece of paper. It's having that trust with the customer. So you can say, "This is what we've done, right? I know what you're trying to solve for and we want to help you, but I can't just tell you something because you need it. You trust me because I'm being transparent.

(29:10):

What I tell you has integrity. And so here's what I can attest to. Here's kind of the stuff I can't, but here's what we're going to give you. And if there's something else that others are giving you, let's take a look at that, blackline and do whatever." Again, we're not trying to obstruct anything, we're trying to enable you as a partner, but we also want to protect you and we can only protect you by being very transparent in what we can and cannot state. So we'll do as the best we can and we'll work with our advisors to give you the best opinion we possibly can, but there's certain things that are just simply out of our control or yet to be defined, which is where the challenge comes in.

Vaughn Morrison (29:45):

Yeah. And that's a challenge for the whole market. It'll be interesting to see how the market reaction to that evolves and what solutions people settle on to arrive at a level of confidence that people feel a Comfortable, but not a tax return in the end. Well, Darin, is there anything else you'd like to cover in our time together?

Darin Green (30:06):

No, I really appreciate you giving me an opportunity to kind of express my opinion. I mean, for those in listening, I mean, obviously I applaud all of you for being in the solar industry, especially in this tricky environment. Again, you can't out science it at some point, but a lot of us who've been in the industry, it's a small world. Even though I was talking to Vaughn I'm like, "Oh yeah, we've talked before." Everybody moves around, but it's what drew us to the industry in the first place is really the right mindset. And I think the more we start to take a step back from who works for what company or work on you, we got a bigger goal here is to show arrest climate change. And so the more that we have these open conversations about how to position ourselves as an industry, the better.

(30:48):

And so I really appreciate you giving me the opportunity to kind of give you my piece of the industry and my view therein. Thank you.

Vaughn Morrison (30:56):

Well, thanks so much for joining us and sharing your perspective and thanks to the audience for listening in. Join us next time on the Troutman Pepper Locke *Battery and Storage Podcast*.

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