***Battery + Storage Podcast* — What's the Buzz in the Battery World With Roger Miksad, BCI**
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Guest Host: Dan Anziska
Guest: Roger Miksad
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Bill Derasmo:

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[INTRO]

Bill Derasmo:

Hello, and welcome back to the Troutman Pepper Locke *Battery + Storage Podcast*. I am your host, Bill Derasmo, partner at Troutman Pepper Locke. With me today is my partner, Dan Anziska. Today, I have the easy job, because Dan is going to be our guest host, and he will interview Roger Miksad, who is President and Executive Director of the Battery Council International. Take it away, Dan.

Dan Anziska:

Thanks, Bill. Very excited today to have Roger from BCI with us, having a *Battery + Storage Podcast* with the person who runs the prevalent Battery Storage Trade Association in North America, I think is critical, especially during these times. With that, Roger, just quickly for those in our audience who are not on top of BCI, why don't you tell us a little bit about BCI, its membership, as well as your background.

Roger Miksad:

Thanks, Dan. It's always a pleasure to chat with you, and thank you for welcoming me to the podcast today. Really happy to share it with you and your listeners a little background on BCI and what we do and where our members come from. As you mentioned, Battery Council International is the primary incumbent trade association for the battery industry across North America. We have an international membership, but our focus is on North American issues and policy. BCI turned 100-years-old last year, was founded in 1924 at the advent of the US manufacturing industry for car batteries, and has been really on the forefront of pushing the battery industry forward ever since.

Our members include battery manufacturers, recyclers, marketers, retailers, as well as all of the suppliers of the raw materials, equipment, and components that go into those batteries. BCI has spent the last 100 years really tackling a lot of the major issues impacting battery manufacturing and recycling supply chains. BCI publishes technical guidelines and standards for both battery performance, as well as manufacturing practices, and has been the driving force behind creating and sustaining the most successful circular economy on the planet, which is the recycling system for lead automotive batteries here in the United States, where the industry attains more than 99% recycling success for end-of-life lead-based batteries. Our members represent more than 98% of the US lead battery production capacity, which itself is still more than 80% of US battery manufacturing capacity across all chemistries.

My personal background, I came from your line of business. I used to be a partner at the DC law firm of Wiley Rein, but moved over to the trade association world five years ago to help the battery industry tackle many of the policy and regulatory challenges that we know face manufacturing in the United States, as well as the adoption of battery technologies across many applications. That's been my privilege to work with the BCI companies, who really represent the best of manufacturing industries, having deep track records of successfully driving product innovation and manufacturing and building jobs here in North America and around the world.

Dan Anziska:

Thanks, Roger. A couple of quick questions about that. We're talking about historically, the lead acid battery ecosystem, and that's been the traditional stop-start batteries that were used with combustible engine cars, for the most part, as well as some other applications. Based on your timing, why don't you tell us a little bit about what your experience has been as some of the battery focus has moved to other chemistries, like lithium ion?

Roger Miksad:

Sure. I think it's important for folks to recognize that like many industries, batteries have a wide variety of chemistries and underlying technologies, but more importantly, a wide variety of applications and demand. It's not so much that individual technologies are replacing or competing with each other, but different batteries serve different applications and demands better than others. As you mentioned, lead batteries have been the mainstay of internal combustion starter batteries for more than 100 years, and with good reason. Lead batteries are incredibly reliable and deliver the power needed to start an internal combustion vehicle at a relatively reasonable cost. Other batteries, however, have taken on before when it comes to motive applications, given their energy density and the need to reduce weight in those applications. For example, lithium batteries in electric vehicles.

What we see, though, is that different segments of applications really do demand different technologies. No single technology can reliably serve all of those applications. One of the jokes in the lead battery industry is nobody wants a lead battery powered cellphone and for very good reason. Similarly, though, lithium batteries are not a good fit for certain applications, where lead batteries can really shine. Starting cars is one of those applications. One of the other applications where we see these technologies coexisting is in electric vehicles, where lithium batteries currently are the technology of choice for electric drivetrain batteries and delivering the very high voltage energy storage technology needed for drivetrain batteries. Lead batteries, a

100-year-old technology, are the solution of choice for almost all electric vehicles for the redundancy systems and the low voltage systems that run the onboard computer, electronics, and radios for many of the same reasons why lead batteries have been the choice for starting internal combustion vehicles.

Dan Anziska:

Are you saying, Roger, that actually each EV in this country produced has two batteries?

Roger Miksad:

Each EV produced in this country and around the world, frankly, probably has up to five batteries in it of a variety of technologies, but at least two. Almost always a high voltage battery and a separate low voltage battery. Today, the vast majority of EVs still use a lead battery for that low voltage system. Some manufacturers have experimented with lithium batteries for the low voltage system. I think over the next 100 years, we'll figure out which is the right solution.

Dan Anziska:

That's very interesting, Roger. Folks aren't really aware of that. There's really been a lot of media attention on the lithium batteries for EVs, but it turns out even as EVs may grow the next few years and there may be fewer combustible engine vehicles on the road in North America. Again, the jury very much is out on that. Lead acid batteries are clearly not going anywhere. In fact, are in all of these vehicles are the majority today.

Roger Miksad:

It's absolutely true. I think another trend to keep an eye on is that new vehicle sales don't represent the majority of battery sales for markets, particularly on internal combustion vehicles. Batteries are a replaceable component. As vehicles are being made much higher quality than they were 100 years ago and much more reliable, we see consumers keeping cars on the road for much longer periods of time. Every new vehicle delivered to the market has a tail end of replacement part sales that has to be serviced for as long as those consumers have those vehicles.

Even as EV vehicles increase as a portion of new vehicle sales, their portion of the operating car park will continue to lag necessarily. If a current vehicle stays on the road for 12 to 20 years, we've got to provide product and components and parts to service those vehicles for the foreseeable future.

Dan Anziska:

It seems that, and jump in, please, Roger, as the expert on this, that the lead acid battery ecosystem in North America is almost a closed loop, where you have American companies producing batteries, have been for decades, and then there's a pretty efficient recycling system and there's efficiencies at scale in manufacturing new lead acid batteries. What has your experience been as there's been this nascent lithium-ion battery market in terms of supply

chain, protecting North American access and ability to produce these batteries, what has your experience been over the past few years entering this new ecosystem?

Roger Miksad:

I think you're right, Dan, to describe it as a new ecosystem. It's important to understand that the lead battery recycling ecosystem really didn't spring out of nowhere. It was built by the industry over the course of almost 50 years of determined hard work by the industry really on two fronts. First is, because it's the right thing to do. We don't want batteries, which do contain toxic materials in them. It's in the name. It's a lead acid battery. We don't want those going in landfills. As an industry, we're responsible for making sure, to the best of our ability, that they don't.

Secondly, what our industry has discovered is that controlling that recycling supply chain is an incredible supply chain advantage. It provides manufacturers and metals markets with an incredibly reliable and secure source of material that is already here in the US. If you look at vehicles on the road as the source of production material for future batteries, there's something like eight years of production worth of battery material just driving around on the roads waiting to be recycled. That supply chain security is incredible in allowing US and North American manufacturers access to the raw materials they need.

As we translate that to other newer technologies, namely lithium technologies, there's a lot of hard work to do. The recycling side, the technology for recycling, there are a lot of companies that are working on more efficient and reliable recycling processes to extract those important critical materials and rare earth metals. Delivering on those technologies and those recycling capabilities is critical to enabling that circular economy to help separate the need to rely on imported commodities from what is already here in the market. I think it'll still be five, 10 or even 20 years before there's sufficient supply and processing capability. But the fact that that is in the future doesn't mean we shouldn't work on it. Frankly, it means, I think, we need to work on it even harder as a nation to make that circular supply chain come together in a way that the lead side of the industry figured out. Again, that took many decades.

Dan Anziska:

Obviously, producing lead and processing lithium and the capabilities and regulations surrounding it. Frankly, expertise, they're different, right, Roger?

Roger Miksad:

There are different technologies, but fundamentally, I have to disagree with you there, in that it's the same concept, right? You have a product on the market that has been sold to a consumer that contains incredibly valuable internal constituents. The industry and the recycling side of the industry has to figure out how to get that back out of the product to make it available, to make new product, if we want that ecosystem to take off. There's a lot of people working on it, but it's an important problem to solve.

Dan Anziska:

A 100% agree, Roger. I was more referring when I was saying lithium processing on the front-end, extraction of lithium combined with the initial processing to produce the lithium-ion batteries, that a lot of that work is actually now being done abroad. I know there's efforts to domesticate it, but isn't that at least as of now a distinction between the lead battery business and the lithium-ion business in terms of the ability to have a domestic ecosystem on the front end.

Roger Miksad:

That's totally fair, Dan. I think unfortunately, the US really is in a situation where we're very reliant on international trade partners for lithium production capacities, whether that's on the raw material side, or the actual production of the cells and battery packs and modules that are needed for the variety of applications here in the US and North America. I think there's been a lot of effort put in over decades of government administrations to try and fix that. The industry has really started to come together over the last 10 years to try and address those supply chain gaps. Bluntly, it's fair to say that other nations have gotten out ahead of us and their advantages will be tough to overcome without significant investment from both the government, government policy, as well as industry investment.

Dan Anziska:

Right. Just segueing, we know that the last few years, there's been increased government efforts to subsidize and to tax credit support a nascent domestic battery industry, at least on the lithium and these emerging chemistry sites. At the same time, there's now President Trump administration and all of the potential extension of the Tax Law from 2017. I know a lot of this is emerging and frankly, a lot of it may be stuff you're working on behind the scenes that's not right for public consumption at this point. Can you share where things are at least right now based on the past few years in this new administration?

Roger Miksad:

Yeah. I think before I get into distinguishing between the Trump administration and the Biden administration, I think it's important to understand that from our perspective as non-governmental policy people here in DC is that there's actually a lot in common when you look at the underlying goals of what the administrations have been trying to do, which is to significantly increase the pace at which the US industry can advance its leadership and capacity to meet these battery industry demands. I think that's incredibly important. It's a national priority to have supply chain insulation from global shocks, to have domestic manufacturing, to have domestic recycling and processing. I see both administrations as having prioritized those end goals.

The differences are obviously very stark. You only have to read the front page of your local newspaper to understand that the two administrations have very different views and the current administration has a very different approach to how to achieve those goals from the prior administration. I am not an international trade expert by any means, so I'm going to refrain from saying which is the right approach. I think we've got three and a half years left to let President Trump prove that his approach is a better approach. It's important to understand that regardless

of the administration, the industry is incredibly committed and invested in building out these capacities.

Our members have cumulatively put multiple billions of dollars already into building these capacities out, as well as have announced more than 10 billion dollars' worth of investments in their manufacturing and recycling capacities across multiple technologies, whether that's lead batteries, lithium batteries, flow batteries, zinc batteries, nickel batteries. There is an ecosystem that has to be both maintained for the lead battery industry, as well as built out when it comes to these newer technologies. Meeting those demands is absolutely critical. I'll say from the industry side, we are committed to working with the current administration and future administrations in making sure that the US maintains its dominance in battery technology innovation, which it has held for the last 100 years, as well as rebuilding our manufacturing dominance in particular for new and emerging technologies.

Dan Anziska:

It's fair to say that with respect to the IRA and some of these specific credits that those are beneficial, or have been beneficial for some of your membership in terms of planning facilities, domestic manufacturing. For example, the 45X credit, the 48 credit and other IRA credits that are currently being used. I assume that your constituency is supportive overall of those credits.

Roger Miksad:

Sure. In particular, when we look at the 45X credits that were implemented, those are a uniquely powerful credit for delivering on manufacturing jobs. What's interesting about those credits compared to some of the other incentive programs that have been adopted over the last couple of years is that it directly provides incentives only for physically producing product in the US and only for product that meets certain advanced technology thresholds. The batteries that are produced must meet, for example, a capacity of 100-watt hours per liter in order to be even eligible to get the credit.

That directly both incentivizes manufacturers to move to more advanced technologies, as well as reward them and allows them to pass those savings on to consumers to spur adoption of those products in the marketplace to support the manufacturing. It creates this really nice incentive loop between the product, advanced technologies and the consumers to allow domestic manufacturers to really get out ahead. Certainly, a lot of our members have planned their business investments over the next decade around the availability of those tax credits. We understand that Congress is currently looking at various tax credits as part of the budget process, and we think 45X is incredibly important to achieve the goal of making US battery manufacturing across all technologies of batteries, both hyper-competitive domestically, as well as globally competitive to ensure we maintain our advantages.

Dan Anziska:

Right. For our broader audience, the 45X is the production tax credit and that really is connected with these large-scale battery and component and ecosystem projects that are occurring, or announced in the US currently. I think very helpful background that Roger just gave on that, but that's one of the key IRA provisions that is under discussion right now and

there's also been some public correspondence from frankly, Republican members of Congress about the importance for their constituent members of those states with these announced projects.

I just want to quickly pivot. This is a relational issue I feel, Roger, but really would like your take to the extent you can on China. We hear a lot about China and frankly, we heard it during the first Trump administration as well as during the Biden administration and it seems a bipartisan concern. If you actually look at some of the most rigorous tariffs that have been announced in the battery industry, they were done in the Biden administration with China. Can you share your view of China, or the general BCI view of China competition with the US and the ability, or willingness of Chinese companies to both sell in the US, and in fact, explore citing their own facilities here in the US?

Roger Miksad:

Sure. I think the headline when it comes to the battery industry and Chinese production capacities is really on the raw materials side for lithium and other novel technology companies. China has really done an excellent job over the last 20 years of cornering the market when it comes to critical materials and other critical mineral manufacturing and recycling and production capacities, so that the entire world, not just the US, the entire world is dependent on Chinese capacity to churn out things like, antimony, cobalt, and other critical metals for battery manufacturing.

Both the Biden administration and the Trump administration have been focused on relieving US manufacturing from those dependencies, but that is a long-term effort. Mines can take decades to build and bring to production. Metals, refining facilities are large-scale industrial investments and require time and permitting to get up and running. But we know projects are underway around the US to try and address that, as well as with some of our partner ally nations.

If you look at traditional manufacturing in China, meaning for product, we see similar trends in the battery industry with really some significant manufacturing capacities in China leveraging their access to those domestic materials in country to be able to produce and deliver product in vast quantities and at prices that are incredibly competitive with the rest of the world. Current national policies, as you said, implemented under the Biden administration, which actually extended some policies that were implemented under the first Trump administration, will be brought forward into the current Trump administration, have been focused on trying to address those trade-in balances, and it's been really encouraging over the last, in particular, three years to see the number of battery manufacturing facilities announced and starting to come online in the US, as well as component suppliers of things like, connectors, the metals, as well as separators, cases, and other component items that are required to assemble the batteries and build the batteries.

Dan Anziska:

Anode and cathode, which could be quite complex, multi-tier processing.

Roger Miksad:

Absolutely.

Dan Anziska:

The fact that you have American, or US announced projects is quite impressive.

Roger Miksad:

It's not just impressive. It's critically important, because the way the battery supply chain works, if you don't create enough independence throughout the supply chain, you leave yourself vulnerable at individual points in the supply chain, your whole supply chain is vulnerable. You have to create that entire supply chain domestically to be able to operate at least without undue reliance on foreign competitors.

Dan Anziska:

You mentioned a great example of that, Roger, with Antimony. I know that the China have their own export controls in retaliation to announce tariffs to cover Antimony. Can you tell us a little bit about your experience to date with that?

Roger Miksad:

Sure. Antimony is an interesting metal. It's used in a lot of very niche applications. For the battery industry, Antimony is a critical alloying metal for lead batteries, and in particular, industrial lead batteries, and having that Antimony restricted does mean that certain types of batteries face supply chain constraints. We have not seen to date, actual constraints in the supply chain for Antimony, but if you look at the globally trading price for Antimony, it's gone up at least four or five times since last year, when China announced that they would restrict sales of Antimony to the United States.

I think that's just one example of the way that Chinese export controls can have global impact when it comes to both price and material availability. It's been proving particularly impactful over the last six months.

Dan Anziska:

Right. It's clearly targeted, because batteries from China have for years now been a focus of the US national security and trade ecosystem and clearly, Antimony is a good example of China showing counter sensitivity, recognizing where the potential weak points in the current supply chain are. It's a good example, reinforcing your point of the need for the comprehensive aspects of the supply chain domestically, or at least with ally support. Any last thoughts in light of the new administration, recognizing administrations come and go and batteries have been here a hundred plus years and will be here a hundred plus years from now, but anything to highlight the next six months, or pay particularly close attention to?

Roger Miksad:

Yeah. The first thing to highlight on behalf of our members, many of our companies have been around in manufacturing batteries in the US for longer than BCI has been here. Some of them have been around since 1901, I believe. Battery manufacturing in the US is not dependent on national policy. We will be here. We will be making batteries. But good national policy can certainly help the industry to maintain an international dominance and to serve American consumers and customers with quality product built by American workers at a great price. The industry loves to deliver product to the US consumer and will continue to do so to the best of its ability.

We really want to be at the forefront of technology and we want to be the leaders in the world and we'd love our current administration to continue to support us in the way that President Trump did in his first term and as we know, he will for the rest of his current term, and driving those policies that really bring American manufacturing to the fore.

Dan Anziska:

Thanks Roger. This was very informative and we know you're probably almost around the clock at meetings and briefings these days. We really appreciate your time.

Roger Miksad:

You bet, Dan. Thanks for having me. I always love talking about batteries. You can let me go on and on and on. You guys, I know have a time limit as well, so thank you for having me on and it's always a pleasure to chat.

Dan Anziska:

It's not a time limit. We'll hold you to our promise that there may be in six months an update as we learn more on the policy front and the tax route with this administration, because there are clearly important deadlines coming up and there'll be further maturation of the tariff and trade policies, both here as well as in China in response. With that, I'll pass it back to Bill to close out this side ship.

Bill Derasmo:

Well, thanks. I would echo the thanks from Dan. Roger, it was great to have you on the program. As I said, I got the easy job today. I got to sit back and listen to you guys have a great discussion. But all pertinent issues, as Dan says, maybe we'll have you back someday, Roger.

Roger Miksad:

You bet. I'd love to come back in six months. I think it's probably a little unfair to ask any of us to gaze into our crystal balls about the current administration. In six months, I think we'll have a much clearer picture of what's coming down the pike from the current administration, as well as

how those are going to be playing out in the global market. I look forward to chatting with you again.

Bill Derasmo:

Sounds great. Thanks, everyone.