



Episode Title: How Can Battery Production Be Greener? -- A Conversation with Mathy Stanislaus

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Lynn L. Bergeson (LLB): Hello, and welcome to All Things Chemical, a podcast produced by Bergeson & Campbell, P.C. (B&C[®]) a Washington, D.C., law firm focusing on chemical law, business, and litigation matters. I am Lynn Bergeson.

This week I had the pleasure of sitting down with Mathy Stanislaus, Director of Public Policy and Engagement for the Global Battery Alliance. GBA is a partnership of over 70 businesses, governments, and non-government organizations focusing on ensuring that battery production supports green energy, safeguards human rights, and promotes health and environmental sustainability. We cover a broad range of issues during our discussion, including the mission of GBA, Mathy's new role as Vice Provost and Executive Director of Drexel University's Environmental Collaboratory, GBA's fascinating and potentially transformative Battery Passport project, and other topics I know you will find interesting. Now, here's my conversation with Mathy Stanislaus.

Mathy, I am so thrilled that we have this opportunity to chat today. Since making your more formal acquaintance in October during the American Bar Association meeting, I have become totally fascinated by your role at the Global Battery Alliance and your mission at that wonderful organization. So perhaps for our listeners, you could share some background information on you, Mathy Stanislaus personally, and then talk a little bit about the Global Battery Alliance.

Mathy V. Stanislaus (MVS): A little bit about me. I'm both a chemical engineer and environmental lawyer. I previously served in the Obama Administration, working as the U.S. EPA [Environmental Protection Agency] Assistant Administrator. What I've been doing in the interim years since the Obama Administration is a lot of work at the World Economic Forum. Helped to establish a global circular economy platform. I'm currently have app lead and the information and implementation of activities to the Global Battery Alliance. The Global Battery Alliance brings together a diverse set of partners: on the private-sector side, everything from mining to minerals processing to cell, battery, EV [electric vehicle], energy companies; and on the public side, governments, civil society,

NGOs [non-governmental organization], multilateral institutions, UN [United Nations] agencies, World Bank, OECD [Organization for Economic Cooperation and Development], civil and educational institutions to really drive the sustainable, responsible battery value chain. So these things include tracking and authenticating and putting in the requirements for responsible sourcing, addressing human rights issues, a drive in the greenhouse gas, reduction of manufacturing, while driving the reduction of greenhouse gas and the transportation energy sector, enabling things like energy access in places of the world that do not have energy access, but they are focusing on Africa. And the reason for GBA really is to bring together stakeholders, really drive the battery value chain, which is probably, in my view, one of the most important value chains in its relationship to electrification and renewable energy deployment.

LLB: In addition to that exhaustive list, Mathy, of things that you are up to at GBA, in preparing for our conversation today, I noted with interest your new role, starting January 3 in the new year, as Vice Provost and Executive Director of the Environmental Collaboratory at Drexel University. You're going to have to explain to me what that role is and what a collaboratory is.

MVS: Sure. While continuing to play an affiliation with the Global Battery Alliance, I agreed to take on this role of this new institute. It's called the Environmental Collaboratory at Drexel University. The intention is to bring the expertise, the capability of Drexel -- these are the engineering school, the law school, the business school, the public health school -- to work with external partners -- local community businesses, governments -- to look at and drive the formation of environmental solutions. The idea of a collaboratory is to really break the historic way that universities work, not to have research for research purposes done at universities that has no relationship to the external world. It's really work with the external stakeholders and really design solutions that are necessary solutions that are workable in the real world. Obviously, there's going to be a focus in on climate, on clean energy deployment, on climate adaptation, data governance, circularity. Those are some of the things that we're thinking about.

LLB: That's fantastic. I mean, given your background as a chemical engineer, a lawyer, and a senior government leader in the Obama Administration, I can't think of a better person to lead this extremely interesting institute. Wow. Did it just start out, the Collaboratory? I mean, it really kicked off, or will kick off, in a few short weeks, I take it.

MVS: Yeah, it'll kick off when I join. In a few weeks.

LLB: Wow. I look forward to learning more about that. Well, circling back to your years with the Obama Administration, you were the Assistant Administrator in EPA's Office of Land and Emergency Management, which has lots and lots of responsibility in RCRA, the Resource Conservation and Recovery Act, and in other areas. You were credited then with shifting EPA's focus from waste hierarchy to a circularity hierarchy. I have some vague understanding of certainly the waste hierarchy, because years and years ago, I did a lot of work with RCRA, and some, too, with CERCLA [Comprehensive Environmental Response, Compensation, and Liability Act], but not as much because I preferred the Resource Conservation and Recovery Act side of the Office of Land Management at that time. But what exactly does that mean in shifting from waste to circularity? My sense is that it's transformational and huge. But what does it mean to you?

MVS: What it means is to shift the paradigm, shift the processes, shift the focus of attention from end-of-life management to a systemic look throughout a product's formulation, product use,

and recovery from a sustainable materials management perspective, to maximizing, for example, maximizing life in its first years, looking at repurposing opportunities, looking at extending the life of products, and doing so with a rigorous -- a life-cycle-based approach. Because if we're going to -- the drivers of that were, one, we saw this forecast globally and by institutions like OECD that we're going to have to double raw materials over the next couple of decades to maintain the same level of economic growth. Associated with that is greenhouse gas. About 50 percent of greenhouse gas emissions is associated with material flows in the global economy. So this is to really kind of drive the systems, the behavior, to really look at optimizing products, recovery of what I call product-quality materials so they can be redesigned into a product as opposed to -- let's just be honest. The whole recycling infrastructure was built around, how do you make some use of a material part of a past life, not from a discipline, legal policy, engineering perspective of how do we design, manage products to maximize its use of maximizing reuse and recovery of materials for its next year?

LLB: No, this is just a huge, fundamental, pivotal shift to going from end of life to having a more systemic approach to ensuring that products can be beneficially repurposed, reused in a more circular, systemic way. Mathy, in your view, especially given your prior role as Assistant Administrator in the Office of Land and Emergency Management during the Obama Administration, do you think legislative changes to RCRA are necessary, and perhaps other statutes administered by that office, to achieve a more expedient and lasting shift to circularity?

MVS: That's a great question. Let me answer it in two parts. One is, I think there's more flexibility in RCRA than people think there is. And one of the things that I tried to do in terms of rules, the definition of solid waste rule, for example, some of the other kind of non-hazardous materials rules is really kind of distinguish and enable activities, enabling a demonstration that you're not conducting a waste activity so that it does not occur literally and regulatorily be put into the waste bin, which then triggers all of these processes. So, for example, closed-loop manufacturing, manufacturing residuals, those should not be considered as a waste activity. Even the perception of it causes a penalty in a sense about that, either from a business side -- in terms of increased risk -- or from a regulatory side, in an unknowing could-have-caused delay. So I think there are some opportunities within RCRA to maximize flexibility -- and I think some of the -- expanding closed-loop manufacturing, clarifying manufacturing residuals, things that can be done within RCRA itself.

That being said, the globe, or China, Japan, have all formally recognized circular in their laws and regulations. So I'll run the gamut, so formally recognizing design and either mandates or incentives for design, collection systems, recycled content, and products. Looking at -- they're still early stage on this -- looking at the greenhouse gas benefit of a recycled product. So those are some of the things. One of the interesting things is that China is actually experimenting with reducing the tax basis to drive circularity. So what has happened -- because if you imagine a societal cost of producing a product, the need to have infrastructure paid for for moving a product, those kind of things, and even some externalities, if you imagine that's the rationale for a tax basis, when you get to a recycled material, it doesn't go through all those stages, you know?

LLB: Exactly.

MVS: And even, because of perceived or real risk of either the consumer viewing it as an inferior product, or a manufacturer or recycler having the challenges of -- the theory is that having the same tax bases applied to recycled product or a product containing recycled materials

actually penalizes that product. So what, for example, China is doing is reducing the value-added taxes for a product containing recycled content materials. So those are -- it's a long way of saying, I think that a comprehensive circular statute is necessary, that that law follows what other countries are doing. And I think from a competitiveness perspective, from a climate perspective, I think without doing so, we'll be lagging behind, the U.S. would be lagging behind.

LLB: No, I couldn't agree more. It's just a tall order for a variety of reasons here in this country. And you've alluded to my next question, or the answer to my next question, a bit. And that is, I think, because of the space that I'm in in industrial and agrochemicals, I appreciate that a shift, a fundamental shift in business from waste, end-of-life waste, to circularity is indeed transformational. And it's so many levels, anything but easy. So I'm guessing we need some policy mechanisms that would offer benefit, incentive, and promise in promoting this shift, and I know you've written and spoken about some of these incentives a lot, but what policy mechanisms are likely to be the most successful and perhaps the quickest, if implementing a global approach in a U.S. legislative context is probably a bridge too far? So we'll be focusing on policy, and what, in your view, are the most promising ones?

MVS: Yeah, let me jump back a little bit. I think we need -- the U.S. needs to again formalize a rigorous circular economy policy. I think they're making some steps with its recycling plan that the U.S. EPA just issued. So those include the hierarchy, what is in, what's out, the fundamentals of a life-cycle-based approach, and it should not include some of the detrimental things that destroy value: things like incineration, which also has this social and environmental justice impact. So we need to have a rigorous circular economy policy. But then, I think the follow-on is what are the most important levers of circularity? In my view, the Holy Grail in some sense is design for circularity. The European Union regulations have some elements of it, things like some minimum standards of performance and durability, as well as minimizing environmental footprint. In a sense, EPEAT has some aspects of replaceability, removability, and design for -- so when I talk to recyclers and repurposers, just in the battery space, if you had a common standard or a common approach, or even disassembly instructions that's widely shared, it could significantly reduce the cost of dismantling for repurposing, dismantling and recycling. So I think we need to look at design for circularity.

The second is remanufacture. Remanufacturing is a huge, huge opportunity. The U.S. should have a remanufacturing policy. So the U.S.'s manufacturing GDP [gross domestic product] of remanufacturing is two percent, right? There's huge opportunities there. There was a study done by the International Resources Panel that concludes significant value proposition of remanufacturing. This includes both in terms of the economic value, as well as the greenhouse gas value of remanufacturing. Those could include things like reclassifying products intended for remanufacturing as a non-waste, or creating a formal list. Perhaps some warranty or quality assurance mechanism to deal with consumer perception of remanufactured goods being inferior. Public procurement preferences for remanufactured goods. Again, I mentioned taxation benefits, remanufacturing goods maybe have some reduced taxation. And then perhaps, you know, recognition of closed-loop manufacturing as a component of remanufacturing.

And then I would look at -- and we'll get to this in a moment -- the areas of data and traceability to drive these things. I think that from a regulatory perspective, from a consumer perspective, and even from a downstream-upstream manufacturing perspective, there needs to be authentication of materials, what's in the materials, composition of materials, to drive circularity. I'll give you some specific examples of the impediment to driving circularity of

textiles is the composite source. Even knowing the kinds of materials going into cloth, into various fabrics, can enable its circularity. There are some companies working on that. Knowing the chemistry of a battery. People think lithium ion is a single chemistry. It's actually multiple chemistries. So just knowing that can help foster circularity.

The other thing is recycled content. Recycled content can -- the theory is it can be the market pull towards recycling where recycling does not exist. I think there are certain markets that, because they have a well-established back-end logistics, there could be some recycled content requirements or incentives: plastics, for example. There are others that the market is still not there, for example, batteries. Those are some of the things that I would think through in terms of policy mechanisms.

LLB: You had mentioned consumers, because I think there is a certain stigma associated with remanufactured goods; not necessarily recycled content, of course, but there's a lot of confusion in Consumerland about recycled content in products, packaging, and related materials. What, Mathy, in your view, is a consumer's role in achieving circularity? Are there policy or other mechanisms that offer value in shifting consumer decision-making to being more appreciative and receptive to remanufactured, recycled goods?

MVS: Yes, I think there is, in a sense, a global look on the private-sector side, as I think some governments, in terms of information to drive the market purchases. My work right now is to create a label for a battery to distinguish battery performance from a greenhouse gas from a circularity from a responsible sourcing perspective. It's formally embedded in the battery regulation to create -- it's called an electronic exchange of information to enable consumers to make choices. So I do think that verified information based on targets that are developed collectively between private-sector regulatory agencies to enable consumers to make choices. You know, I don't think it's the Holy Grail necessarily, but I do think you can nudge consumers to make choices. I think consumers -- also particularly younger consumers are looking at the performance of products, you know, so I think providing information that's trusted to make those choices. I think it's really helpful to have -- when I talk to some of the bar, those companies that are invested a lot in reducing the greenhouse gas footprint and responsible behavior, they're not seeing the market benefit of their investment. So one of the areas that they see -- that I see -- is authenticating and distinguishing performance based on metrics that are widely agreed to.

LLB: Yes. We've alluded to this a couple of times in our discussion, Mathy, and in your writings and various presentations. You discussed the European Union Digital Product Passport and the Global Battery Alliance's Battery Passport initiative. I took a look at your website over the weekend, and I am just totally fascinated by the Battery Passport idea and want you to share that concept in more detail. You've alluded to it a couple of times here, but what is it? How does it work? And what are the expected outcomes of the Battery Passport?

MVS: The Battery Passport is an effort to create a global system of data access, to be able to provide assurance again of certain claims. We're focusing right now on the greenhouse gas footprint of a battery. One of the metrics of responsible sourcing, whether child labor is used in cobalt in particular, chemistry, and performance data of a battery. The idea is to collect data, end to end, mining to manufacturing, and then pulse use, to be able to drive certain things. So one is [inaudible] of the footprint of batteries so consumers can make those choices. A downstream purchaser being able to distinguish between suppliers based on these kinds of -- utilizing the data to be able to compare how suppliers perform. Governments will be able to provide assurance of, for example, the environment of the greenhouse gas footprint. It's really to bring to the environmental, the public-private sphere, the era of data.

Data, this is the -- there's more data collected than ever in the history of humanity. The collection of data is the cheapest it's ever been. The ability to collect data in a way that doesn't change, it's immutable, you know, is so we have this opportunity to use data to address trust, to address greenwashing, to enable those who have invested in highest performance to have the market advantage, but also to drive towards the Paris Agreement. At the Climate COP [Conference of the Parties], one of the biggest conversations was authentication of claims. And so I believe that digital product passports is going to be a primary vehicle of authenticating greenhouse gas claims. And then its relationship, the national German commitments. [Germany committed 150 million euros for climate change adaptation in developing countries.]

LLB: You note in the Battery Passport that it's been endorsed by the EU directive on batteries and by the Canadian and U.S. administrations. What does that mean exactly? Are these endorsements seals of approval or recognition that this approach has value? Is it GBA that does the actual certification of these Battery Passport initiatives, or is it government approved, or just government endorsed?

MVS: It's a great question, and we're in the midst of figuring out how we're going to work operationally. So GBA is a public-private initiative, multi-stakeholder initiative. GBA sees its role as being the neutral convener of parties to establish rules, which is what it's currently doing right now. Down the road, it will establish the mechanism of data access to whatever systems that companies have, and we still have a long way to go, of creating the trust necessary for companies to have access to the kind of data that is necessary. And then based on that access of data, providing independent auditing of that data against these claims. And that's what the Battery Passport and how it would work operationally to link data to these kind of outcomes. And just to be clear, this is not an IT [information technology] system. This would basically interface with IT systems, either intra- or inter-companies. With respect to your question of government recognition, a number of the private-sector companies, they participate in GBA's Battery Passport because with almost a precondition that we need to make sure that it's aligned with policy objectives of governments. We want to have a way of proving to government in an independent, database way the various policy objectives: greenhouse gas, responsible sourcing, other environmental footprints. The longest standing engagement has been with the European Commission, hence why the battery regulation formally references the GBA's Battery Passport. We've had a number of the governments who participate in the design of it: Canada and Germany. We've had some consultations with China, with Japan, and begin to have Korea -- U.S. Frankly, it's early stage. We've had a few conversations with the U.S. I think they've expressed an interest in the value of a Battery Passport, but leveling the playing field and enabling fair competition is what we've heard from them.

LLB: The concept to me is just totally brilliant. Given all of the issues today and the growing commercial imperative to be able to authenticate, demonstrate, and track with really incredible granularity that you're sourcing materials responsibly and in a way that aligns with the environmental commitments that product manufacturers make with regard to their manufactured goods. I come at this from a chemical perspective, and there is extraordinary interest today, given some of the newer policies under TSCA with regulating articles to ensure that articles are free of certain materials that are thought to be ill-advised for our environment and for sustainability generally. Do you see the Battery Passport, the concept, as being a template for other industries and other products?

MVS: Oh, absolutely. I mean, in fact, if everyone is done talking, not thinking about the deployment of data to drive some of the things you talked about, so drive confirmation of

sustainable goals, the purity of products, they're frankly going to be behind the curve, because that's where it's going. And there's also an opportunity to be ahead of the curve, meaning build -- as you're building your processing right now -- building in how data should be collected to confirm that. I think even if it's not even external, internally, being able to drive data to confirm everything from the basic inputs like Scope 1 and Scope 2 as an example, very basic example, Scope 3 emissions, to the various inputs of chemicals. We all need to be thinking about that, both for internal operational purposes, but also external confirmation of multiple policy targets.

LLB: Oh, absolutely. When I was reading up on the Battery Passport idea, it's like you have a digital avatar that is information shared in your collaborative value chain that ultimately endorses, verifies, and ensures that all of the materials going into the battery are sourced from and aligned with environmental and Environmental, Social, and Government (ESG) commitments. From my perspective, I could see that used in any number of manufacturing sectors. It's just totally brilliant, Mathy, and looking at your project management offices and implementing partners, SAP being among them, and the Steering Committee members, which include Tesla and Honda and SAFT, Umicore, Audi, Johnson Matthey, and a whole host of others. It seems like you have extraordinary buy-in from all the different sectors that will make this a promising success. Agree?

MVS: Yes, it's the only way to do it, frankly. Data is viewed with opportunity, also viewed with skepticism, meaning there's concerns about [intellectual property] IP disclosure. There's concerns about overinclusiveness, of data disclosure, so it's a hard balance. Getting all the stakeholders at the table to figure out what is possible, and maybe the first generation is not as comprehensive as a second generation of this. It is the reason I actually facilitated a session of the COP around data disclosure. We pulled together a number of private sector, governments, and NGOs to begin the conversation. How do you start? How do you establish a global framework of data governance? And also what data can be disclosed? What data should not ever be disclosed because it reveals IP, reveals other kinds of privacy information, so that we'll be issuing that report in a few weeks. And that'll lay the foundation for a G7 deliberation under Germany's presidency next year because it gives -- while there are huge opportunities to take advantage of the data systems and digital systems and traceability systems, there are still real or perceived barriers in terms of how do you make sure only the right data gets in the right people's hands? So we need to figure that out.

LLB: You and I talked a little bit about that before the ABA annual meeting in Washington in October, because from my perch in the chemical community, what is considered confidential business information [CBI], both with respect to industrial chemicals under TSCA and confidential information under the Federal Insecticide, Fungicide, and Rodenticide Act. We all appreciate that there are, as you correctly note, certain data that are absolutely irreplaceable and subject to all types of patent and related protections that cannot be disclosed to others in a competitive context, right? My congratulations, Mathy, to thinking through a system with the Battery Passport that at least starts to set the table with general parameters on sharing information in a protective context that will move the needle forward, because we have to protect CBI. No question about it. On the other hand, we have to recognize that increasingly to be true to our ESG commitments and commitments to sustainability, we have to have a shared sense of information that can be made more available to the value chain, to consumers, and to others, so we can move forward and achieve all that we wish in an increasingly global and circular economy. So I think it's got a lot of promise, and I look forward to that report. Now when did you say that was going to be coming out, and will it be publicly available?

MVS: It will be publicly available. I'm working on that right now, so my guess is in about two to three weeks, it'll be published. Can I just have a suggestion for the audience? I would say prepare for the data world. What that means is don't go out and buy IT infrastructure; don't do that. But figuring out what is your underlying information and data that you think is crucial for making decisions, it could be internally, it could be externally. You mentioned CBI claims. I remember when I was at EPA, the whole back and forth of CBI claims and after the fact process is ridiculous.

LLB: It's challenging, for sure.

MVS: I think even now thinking about how can we organize information and data for CBI claims in a way that's readily available, readily accessible, and how would you ideally collect that information to be able to address a government claim on CBI? I think you develop those internal systems right now. So I would think broadly what I would suggest is thinking about how you would organize your current data in a way that is easily understood, easily accessible, is interoperable -- meaning are you making sure your data is collected in the same way that your competitors' are, in terms of the level of granularity, because this is where the world is going to go. And don't, don't, don't invest in a technology provider to make those decisions for you.

LLB: No. Good thoughts, Mathy. I appreciate that. Let me follow up on one of the topics that you and I have spoken about before, and that is the significant interest today -- but some of us have been following this issue for quite a long while, and that's in cobalt, a very, very important component of a battery technology -- and the responsible role of batteries in scaling up to achieve electromobility and renewable energy. What are the key approaches to drive responsible sourcing of this material in particular?

MVS: It begins where -- in the conversation we were just having -- is information that people can trust, right? Are the sources of cobalt in this case legitimate? They come from legitimate sourcing. Do they come with or without the use of child labor, which is a huge problem with cobalt? Building those systems in place right now and putting those -- not only obligations from a historic procurement perspective -- but putting those obligations in a way that can be verified readily. I don't think any longer a downstream company can say, "We've included that in our procurement guidelines. We're done," because the market effect, the market demand, institutional investor demand of authenticated information, the policymaker demand. No longer can companies say, "I wrote it into my procurement guidelines." So establishing a system with your suppliers, in terms of the data and information that is necessary for these claims, but also bring in -- there's a number of civil society organizations, very expert, working very well in this phase, bringing those folks to the table to building that system of the necessary information to be able to establish confidence and trust as a legitimacy of the sourcing of materials. I think cobalt is the first -- is probably the most pronounced -- but you have issues around indigenous rights on lithium, particularly most pronounced in Chile. You have issues around environmental footprint of nickel, another of the minerals necessary. So we need to establish the systems of information to be able to have confidence in the sourcing of materials, and not just representation. We should make the role of accountants and lawyers less so.

LLB: No, I couldn't agree more. And the Battery Passport goes such a long way in addressing all of these issues with respect to the critical mineral components of battery technology: cobalt, lithium, nickel. Because those are challenging minerals with a lot of ESG issues associated with them, and so the passport concept is really just uniquely well suited and also, in my view, a very useful and durable template for other industry sectors.

MVS: Yes. I think those others -- what I think the success today and what's discussed in the future is really about bringing competitors to a neutral table.

LLB: Exactly.

MVS: With policymakers, with civil society to co-design rules; that's the only way that this is going to work. I would highly recommend in your sector to begin thinking about it in a pre-competitive, multi-stakeholder way. In fact, I'd love to work with you in the future on that.

LLB: Yes, I was just going to take you up on that, Mathy. I think there's a lot of opportunity there because the community is uniquely challenged in so many respects on the data accessibility issue, as we talked about. Let me ask you -- before I wind our conversation up, which has been fascinating -- are there particular examples of the types of projects that the Environmental Collaboratory might pursue, because I was taken by your introductory remarks on how this isn't going to be just an academic exercise. This is taking real-world issues and leveraging the skills of Drexel University's business, law, science, and other departments. But what types of projects might you be considering when you kick off in a few short weeks in the Environmental Collaboratory?

MVS: I already identified the short list that everyone's talking about. So it is clean energy deployment, climate solutions, climate transition, climate adaptation, data governance, so those are some of the things, and circularity, but we want it to be driven by a consultation process. So we want it -- what is the most impactful and viable way to bring the capabilities of a Drexel University with all the diversity of schools? But also, one of the things that really attracted me is not only bringing expertise, but bringing neutrality to the conversation, and bringing the academic neutrality of the conversation, working with external stakeholders. So which topic there, even within those topics? What is the most viable model that could be developed or researched about? So we want -- and I want -- to be able to have a deep consultation with stakeholders when I start up to figure out what should be the focal point of [inaudible] it. Because for me, I don't want to just do make work. I want to make -- I want to have this -- to really drive real-life changes.

LLB: Continue your drive to make real-life changes, Mathy, because you've already contributed enormously to our society and intellectual scholarship generally with your commitment to circularity. One final question, Mathy, and that is, how can our listeners learn more about what we have been discussing? I know you've got a fabulous website at the Global Battery Alliance. I haven't looked up Drexel to see if you have a new one starting on the Environmental Collaboratory. But what can you tell our listeners?

MVS: Yes, there is a GBA website at globalbattery.org, or you could just generically do a Google search, and you should follow me in my new Executive Director role. There is an early Environmental Collaboratory website. You could just put Environmental Collaboratory at Drexel, and that'll come up. I look forward to folks contributing to even the design of the Collaboratory, because what -- I really fundamentally believe that the challenges that we face really require a multi-stakeholder, multidisciplinary approach, so I'm looking forward to working with you and working with others to chart our future.

LLB: Excellent. Well, Mathy, I want to thank you for all that you have done and are doing to make the world a better place, for our conversation this morning. And I'm definitely going to be looking you up in a few short months to see if we can talk more about the Collaboratory and what you're up to and see if we can make something happen on the industrial and agrochemical front. I would love to do that.

MVS: That sounds good, Lynn, and I really appreciate the opportunity.

LLB: Thanks much.

MVS: Okay, take care. Bye now.

LLB: My thanks again to Mathy Stanislaus for speaking with me today about the Global Battery Alliance, its Battery Passport project, and all the incredibly transformational initiatives GBA is pursuing to ensure battery production and use is sustainable.

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