
TAG Infrastructure Talks* Podcast: Unveiling Georgia's Electric Mobility Success Story With Virginia Sengewald*Host: Alan Poole****Guest: Virginia Sengewald****Alan Poole:**

Welcome to another episode of *TAG Infrastructure Talks*. My name is Alan Poole. I'm a corporate partner at Troutman Pepper and currently the Vice Chair of the TAG Infrastructure Society. Very excited about today's episode. It's our first deep dive into e-mobility with a focus on Georgia, and I have with me today Virginia Sengewald, the Senior Project Manager of Industrial Projects at the Georgia Department of Economic Development. Welcome.

Virginia Sengewald:

Thank you. Thank you for having me today.

Alan Poole:

Yeah, thank you for making the time. This is going to be a great episode and we have so much to get into. You have a great track record developing the infrastructure here in Georgia. So why don't we get started with you, tell us your story and how you came from Germany to South Carolina, and now to Georgia.

Virginia Sengewald:

Yes, absolutely. Happy to. So we were obviously just talking about this. I've been with the state of Georgia now for a little bit over four years, and used to work in our (at the Georgia Department of Economic Development) European office based in Munich, Germany. For anybody's who wondering, the South Carolina connection is that when I was 15, I actually did high school exchange here in South Carolina and that kind of ultimately got me into economic development, just staying in touch with friends there and then eventually getting connected to the Georgia European office and my first job right out of college, worked there, started focusing on the electric mobility supply chain and industry as well as renewable energy basically because of my educational background and some internships I'd done in that area.

Worked in the European office for a year and a half until 2021 and then moved over here just as the state started to really look into electric mobility in more detail and wanted me to be a project manager on this side and help with the overall strategy and just figuring out where we want to go as the state when it comes to those industries. So now I'm a senior project manager, I work with companies that are interested in setting up new facilities throughout the state, focus a lot on still electric mobility, supply chain projects, as well as renewable energy companies.

Alan Poole:

Right now, Georgia is striving to be the e-mobility capital of the country. Let's go back to where that really started to happen. Now this is before COVID, before the IIJA or the IRA and it goes

back to I think 2018 with an international partnership with South Korea. Can you tell us more about that?

Virginia Sengewald:

Yes, happy to. And you're absolutely right. A lot of things have happened in Georgia for electric mobility can really almost be pinpointed to an announcement in November 2018 when SK Innovation announced that they will set up a lithium-ion battery manufacturing facility in Jackson County, so just outside of the Metro Atlanta region. And they committed to creating 2,000 jobs, investing over 1.6 billion. So significant investment in the electric mobility space to bring this battery production here to Georgia, but really the United States. I think the reason why you look at that partnership, why did they choose Georgia? I think there are really two components to it:

One is really our strength traditionally in the automotive industry and being the real hotbed for the automotive suppliers because of our strategic location when you look at our surrounding states and the automotive OEMs that are located there.

But then the other aspect, which is probably at least as important if not even more important is that cultural connection and international connection that we've built with South Korea. So Georgia's had another international office. In total, we have 12. So the Korea office has actually been there since 1985. So very long-lasting strong relationship, KIA was obviously in Georgia long before SK even announced. It really built that relationship and I think that is one of the reasons why, I know that's one of the reasons why SK ended up choosing Georgia is because they could find a home away from home. They had that cultural connection, they were able to find restaurants that remind them of home and really had some people that obviously moved over here as well come often, I mean from a leadership perspective to the state.

And so they could find all these things they're looking for in addition to just a very business friendly state, low cost of doing business and just all these other advantages from a workforce, educational and just logistical perspective that we have to offer to companies overall. But I really think it was a combination of both of those.

Alan Poole:

That's so fascinating how deep that connection goes all the way from culture to business. I had no idea it was so deep. Although I've known about the connection to South Korea for years, it's nice to see it take shape in such a tangible way, especially with tangible benefits to citizens of our state.

Virginia Sengewald:

Yeah, absolutely. And Korea actually is now the country that is committed to the most jobs and investment compared to any other country when it comes to foreign direct investment. So it's pretty fascinating and just great to see how these relationships have paid off for the state of Georgia and really Georgians who are getting all these great jobs that they can go work at.

Alan Poole:

So I was interested to get into how Georgia's gotten ahead of the ball on e-mobility. And first of all, would you say that's fair to say? And second of all, I mean it seems like it's been a slow burn since the Kia days. Are we just been building off strengths that we already had?

Virginia Sengewald:

Absolutely. I definitely think that's fair to say. I think we're really ahead when it comes to electric mobility. I mean just going back really quick to SK, this point is now up and running. When you look at all the announcements right now, this is not a facility that's just only been announced or is under construction. It is in production. We're making lithium-ion batteries that are going into electric mobilities that are on the streets, on the road, which is obviously amazing. So that really helped us to jumpstart that industry and that growth. But I think what really helped us to then accelerate this industry and the growth of the industry actually started when I was still in our European office. In January 2020, I had the opportunity to be part of the governor's mission to Germany. So Governor Kemp came over to meet with a lot of just company leaders, especially in the automotive space. So we met with companies like Mercedes-Benz and Porsche, and really one topic that kept coming up was electrification.

And I think SK of course already showed us that this is imminent, this is happening right now, but if you have an automotive OEM (Original Equipment Manufacturer) like Mercedes-Benz, the first automobile was invented by Carl Benz in 1886, you're looking at the company that basically invented the gasoline and combustion engine vehicle and they're saying electrification is our future. So everything they've done in the past was based on combustion engine vehicles and now they're saying electrification is our future. And then shortly after that mission and you just kept hearing all these goals and you'd hear years like 2025, 2030 and 2023, it's not far away. And so coming out of that mission, the governor really said, "We need to know what's going on there. We need to make sure that we stay ahead. We already have SK, so let's leverage what we've already been doing and figure out how we fit into electrification."

And so we have within our department, the Georgia Department of Economic Development, we have the Center of Innovation that is focused basically while I work on projects of today, they already look at the projects of the future. So at this point we're one, able to leverage what they've already been doing, leverage their connections and their understanding of the energy and electrification efforts in the automotive space. But we're then also ... Another thing we did is we looked at the critical supply chain, at that point specifically for batteries. So things like rare earth minerals that you now hear every day, we looked at in 2020. We had a team look into really every step of the supply chain from mining to initial processing, anodes, cathodes, battery, I mean cells, then the modules and packs.

So really the full supply chain and then all the way to recycling because if you can't mine the minerals, you have to get them out of recycling, which today we have a battery recycler that's already creating battery materials here in Georgia. So looking at that full supply chain really helped us to understand where can we fit in. And so absolutely think that we are the epicenter of the electric mobility industry in not just the southeast but the United States. You see the growth that we've been experiencing over the past year, and I think it's really that really early realization by state leadership, especially by Governor Kemp of saying, "Hey, this is where we're headed."

We have an automotive industry that's employing over 55,000 Georgians. We need to make sure that our existing industry can benefit from this shift to electrification, but we're also able to bring more jobs, these jobs of the future to the state of Georgia."

Alan Poole:

So there's a really interesting lesson here and that is identifying the next big opportunity. Sometimes that seems so hard, but this story that you're telling seems to indicate just focusing on what we're already good at and establishing partnerships with stakeholders to sort of get a whiff of what's coming down the future. And that seems like a huge value add from the state as far as the business community is concerned.

Virginia Sengewald:

Yeah, absolutely. And I think that's a really good point is that the stakeholders, so one thing that we always talk about is that we have a relationship approach to economic development, and that is really the truth in every aspect of what we do. So we've always been working. It's a little unique when it compares to other states. So when we work with companies either expanding or considering the state for a new location, we always work with one of our utility partners. There really are so many ... They're partners. I usually don't use the word stakeholders because they really are partners. We're working with all these entities, I mean our sister agencies, and it's been really amazing to see.

And so again, we've been to your point, been able to leverage not just the technical expertise and the advantages and business environment that we've created, but really able to leverage these partnerships and form new ones on our focus on electric mobility. So it's been really exciting time and I think that's why we've been so successful because we're all doing it together. There are so many organizations throughout the state of Georgia that are interested in growing the state and want to grow it and make it just the best place to do business and to work and live.

Alan Poole:

One of the things we like to do in the Infrastructure Society is try and paint the whole picture and understand how things are connected from power to telecom to application. Can you describe the ecosystem of different partners or sectors that you are looking at as you try and formulate policy?

Virginia Sengewald:

Yeah. Absolutely. It might not be so much from the policy perspective, but really from an ecosystem perspective.

Alan Poole:

Sure, that's fair.

Virginia Sengewald:

I think that's what we're mostly focused on. And I think a good example is one of the initiatives we had in the past years was the Electric Mobility and Innovation Alliance where we brought together all of these partners to look at what you're saying, the total infrastructure, the entire ecosystem that we're trying to build. So we had our power providers involved because obviously they're not just important when you look at charging infrastructure, but also manufacturing. I mean all these battery projects; I mean that power demand is very high. And so to have them involved from day one has been critical. I mean from a grid reliability and stability perspective, that's such a big part of this. And so they've been part of that group.

Then obviously we're looking at Georgia, the Department of Transportation and one of our sister agencies, has been a really strong partner as well when you look at electric mobility and really where the state's going. Education system and they come in because I mean the number one thing in economic development and electric mobility is workforce. It's not just having the right people, but they need to have the right skillset. And so I think they've been a really critical partner and it's part of the ecosystem I think sometimes is overlooked because everybody's talking about charging, infrastructure, manufacturing, all those things, but it's really the education. Because we can build all these factors. If we don't have people can actually build the vehicles, the batteries, the components, we're not doing anything in those plants. And so I think our educational partner has been a really crucial part in making electrification really happen and helping us to grow our jobs and investment in the state.

So from higher education, just to highlight obviously our two flagship universities, the University of Georgia and Georgia Tech, they're doing so much work when it comes to electric mobility to make sure they're teaching these young students the right skillset and they're prepared for these jobs that we're bringing to the state. And we're really in a constant dialogue with them to make sure they understand what the needs are. We bring companies in, have them meet with those educational institutions. Then same goes for our technical colleges throughout the state. They already do such a great job in talking to our companies and making sure they're upskilling and re-skilling as needed, but also have the right curriculum for all these new companies coming to the state.

So again, yes, so from an infrastructure perspective, I think there are a lot of components, and again, this alliance brought a lot of these partners together from private industry to public organizations, nonprofits to really talk about the ecosystem and where does the state want to go. And coming out of that, a lot of these people, a lot of these organizations are still talking and trying to find synergies and making sure that they can help grow the state's electric mobility ecosystem.

Alan Poole:

So tell us the typical life cycle of a major project and what are some of the tools you have in the toolbox to make that go more smoothly?

Virginia Sengewald:

Absolutely. It's always funny that the typical life cycle unfortunately doesn't exist. I wish they were all the same, but-

Alan Poole:

That would be no fun.

Virginia Sengewald:

That's fair, that's fair. Every project's so different, but the way it works is, I mean, we'll sit down with either the company or their consultants. Sometimes we don't even know who the company is. I think Hyundai Motor Group, we haven't even talked about them yet, but great example, didn't even know who it was for the probably first month or so.

Alan Poole:

Oh wow.

Virginia Sengewald:

So we get these projects. Sometimes we know who it is, sometimes we don't, and really try to understand what their needs are. So from obviously the hard facts, acreage, workforce numbers, do they need to be close to the port? Do they need to be on an interstate? All those things. So we really try to understand what they're looking for and then we go out and go to our communities, which is a lot of work, but the state is the single point of contact together with the utility partner because there's 159 counties. There's no way we're going to have to or want the company try to navigate through all those counties.

So we really help them navigate through all of that and have them understand what's available to them, get them connected to our local regional partners and make sure they have everything they need to really make a good, educated selection when it comes to a site and a community because we're focused on long-term growth. We always tell companies, "We're not here for just the quick announcement. We're here to help you be successful. Once you locate your Georgia company, it doesn't mean doesn't matter where your global headquarters are located."

And so once you're here, your Georgia company will help you grow. We have a regional project management team that stays with the company for as long as they're in Georgia, hopefully forever. But that's kind of like the process. So we'll do the site selection, get them connected to the local partners, help them understand what kind of incentives are in place, help them understand the cost of doing business and just all these advantages that they have if they locate here in Georgia.

And when it comes to tools, I think what we really focus on are a handful of factors. One is connectivity. Our access to market is one of the main drivers for companies to locate here. I mean obviously we're located on the East Coast and the southeast, fastest growing region, but because of the size of Georgia, we actually go so far west that we have that market access. If

you look at Atlanta and go straight up, you hit Detroit. So I mean if you think about that, we really are already very much inland for being an East Coast state. So connectivity, access to market is a main driver. Our Atlanta airport, obviously the most traveled airport in the world has been a great asset as well as the port down in Savannah.

In addition to that, workforce. I mentioned it briefly earlier, Georgia Quick Start has been one of our tools that I think we really utilize the most and we're definitely keeping them busy and they've been such a great asset. This again, the number one workforce training program in the nation has been around since the 60s. So it's a very mature, very established program that is basically coming in and helping eligible companies and their workforce needs when it comes to training. So they offer customized training to these companies that locate and grow in the state of Georgia. And so that's such a great tool and asset that we have to offer. Really sets us aside. A lot of states have workforce training programs and companies would agree with this and consultants do too that none of them are like Georgia Quick Start.

Alan Poole:

Wow.

Virginia Sengewald:

It really is a very unique program. In addition to that, obviously there are always some sort of incentives, but I think it's really the business-friendly environment that we've created here and the stability of our state government. If you look at the history, one thing that's always been the same is that we've been a business-friendly state, and I think that sets us aside as well. When companies look at Georgia, they know that not just today, but 20, 30, 50 years from now, our goal will be to have them be successful because we understand that if we bring good companies, we have good employees, that means our people are happy and they stay here, they get a job where they're from, which I mean I think ideally everybody loves, living where they're from or at least most of the times.

And I think that's what we're able to do with these tool sets or those tools that we have available. But I think those are really the most critical points is the connectivity, it's workforce and workforce training, and then just the overall business and friendly environment, which obviously includes low cost of doing business and the support that we get from a lot of our other agencies. I mean the EPD (Environmental Protection Division) for example, when it comes to permitting, they're just such a great partner. Every agency has somebody we can reach out to from economic development directly and know they're there to help us. And so it's that partnership approach again that sets us aside and helps us locate these projects.

Alan Poole:

What are some of the big challenges to try and get even further along down the road than we are now?

Virginia Sengewald:

I would say, and I've talked about it a little bit, workforce, and I think if you talk to anyone in this space and economic development, not just in Georgia, but really the US, I mean it's a nationwide challenge. It's honestly a global challenge is finding the right people, making sure the right skill sets are being taught. So I think that's the main challenge that I see for us moving forward.

But that being said, I think we're already, again, Georgia is doing a great job staying ahead of these challenges, being able to identify them early enough so we have time to address them before they become issues. So they just stay a challenge. And when you look at our population, we're continuously growing. We're again southeast, the fastest growing region in the US and when you look at Georgia specifically, we are outgrowing or outpacing the southeast when it comes to our population growth. So we have the people, our population is growing faster than our number of jobs are growing. So we have that gap there where we can attract more companies. But then it comes to training, so how do we make sure these people have the right skillsets? So again, comes back to, I know I've been saying the word partnerships a lot, but it comes back to these partnerships with our technical colleges, looking at electricians. That's a skillset we need.

Alan Poole:

Oh, that one's huge right now. There's nowhere near enough right now.

Virginia Sengewald:

Absolutely. And it is not just general electricians. They need to be able to work with a charging station that is a high-tech computer. So it's not just the electrical parts, but it's also the software. So teaching those skill sets is really tough and it's something that we've been working on a lot. And again, luckily our technical colleges really form their curriculum based on industry needs, so that hopefully will help us moving forward. Same thing with our universities. They know what skill sets we need for this industry. They're talking to these companies to find out what is the exact skillset, what do we need to teach these, not just young people, but also professionals who've been working on combustion engine vehicles, which are obviously very different from an electric vehicle.

So I think that will be the main challenge, but I think we're addressing it. Actually, I don't know if you're aware. Governor Kemp just announced the MATCH (Multi-Agency Team for Children) Program, which will now send letters to high school students all throughout the state telling their eligibility for technical colleges and universities. And I think that will make such a big difference for these kids. I mean, just imagine not just in the cities, but really the rural parts to be in 11th grade and get this letter saying, "You can get into all these technical colleges, you can get into all these universities in the state of Georgia." I just think that is such a great motivation to realize these schools want you as a kid. You might think people don't care about you, but they do. They want you to come and study at these technical colleges, at these universities. And I think that will really help us keep this young talent and these, I mean really young people who want to work and be in the workforce here in Georgia and train and educate them here so they can work at our companies.

Alan Poole:

I did not know about that.

Virginia Sengewald:

It's a fantastic program.

Alan Poole:

That is such a subtle but potentially effective move just to send a letter, say, I mean a lot of development sometimes is just turning over all the stones and making sure you've picking up everything that you can. One more thing about workforce, I mean, how able is our Quick Start program to get people trained up fast enough for the demand right now?

Virginia Sengewald:

Yeah, the good thing about Quick Start is that they come in, even before that facility's up and running, they will train the workforce during the construction period. They'll basically replicate what the manufacturing floor will look like and help them train or help the company train people on the equipment, on these workstations. So that day one, they open the facility, they don't see that machine for the first time. They know what they need to do and they understand the process. So absolutely capable. And because of this approach, training ahead of having the facility up and running, you really have a lot of time because I mean, building these facilities takes a couple of years usually.

Alan Poole:

True.

Virginia Sengewald:

And so it's really impressive. I mean, they're working with all these companies already. I mean Kia has been utilizing them from the beginning and now they're utilizing them for electrification and they've really been able to help Kia and then have been because of that success there, and I always tell the stories that Kia utilized Georgia Quick Start. And when they built that first Kia here in West Point, it started and they said that usually doesn't happen. It never happened because usually there's always something wrong with the number one vehicle that rolls off the line. And so that ultimately helped us also attract the Hyundai Motor Group and their meta plan down in Savannah because they knew they can get the workforce trained fast enough to build this facility and stay ahead of all these very ambitious goals when it comes to electrification. And make sure, because for these OEMs it's about market share. You have to make these vehicles to secure your market share and sell enough vehicles to be profitable in that specific industry in the future.

Alan Poole:

One other challenge I want to talk to before we start wrapping up, adoption is a concern with any emerging technology, but that's no stranger to the mobility world. Is there anything that the state of Georgia is doing to try and alleviate concerns with consumer adoption or is that not a big problem here or what do you think?

Virginia Sengewald:

So I mean, I think we've seen a very steady increase in vehicle registrations. I think at this point we're looking at over 70,000 registered electric vehicles in the state of Georgia. So really seeing that market growth, a very sustainable and organic market growth, which I believe is very important because you need to make sure those vehicles, it makes sense to drive electric vehicles. I think that there are a lot of partnerships that are helping adoption like Rivian for example, installing their chargers in state parks. I think that will really help people be like, "Oh, I can go on a day trip with my family to a state park and charge my electric vehicle there."

But I think it's a lot of local partnerships as well, really helping, again, educate people on figuring out, do you have the right application for an electric vehicle? It's probably not for everyone yet because it's still a very new and emerging technology. But I do think it again comes down to education. And I think there are a lot of local partnerships, and just local leaders that are looking into charging infrastructure, making electric vehicles more accessible. And so I think, again, it's like most industries in Georgia, it's a very organic growth because that's what you need to make sure it's a long-term and really viable and strong industry.

Alan Poole:

So let's look to the future. Where do you think we'll be in the next five years?

Virginia Sengewald:

That's a great question. I think there's going to be a lot of new technologies in 5 to 10 years. And I think we'll see a lot of the startups that are coming out of Georgia and that are locating here, we'll see them grow and I think we'll see them mature into really larger corporations. Again, not just the ones that are growing out of our universities and out of our startup ecosystem, but also some international ones just to name Heliox, for example, a charging company. I think we'll see really strong growth there. But I also think that we'll see, and that's something that Georgia has always been very strong in: diversity and industry. We're not just diverse when it comes to our overall industry. So looking at automotive, looking into automotive, agriculture, logistics, life sciences, fintech. I mean, there's so many industries here that have helped us be successful over the years and I think we'll see a similar diversification within the electric mobility sector.

So when you say electric vehicles, people usually think battery, electric, but it's more than batteries. It's electric. Electric is also fuel cells, so you have fuel cells, you have hybrids, there's so many applications and I think we'll see all of those grow in Georgia. And then batteries for example. We have lithium ion, but I think we'll see a lot of other cell chemistries being applied as those technologies grow and become, start reaching commercial scales. I mean, if you just

look at, they're not just lithium ion, but lithium-ion batteries, they're used for battery storage applications. You have solid state batteries that are now ... I mean really that technology is starting to become more and more talked about. I'm assuming it all happened at one point. But I think we'll see that.

So I think we'll see a lot of different battery cell chemistries and applications, but I also think that we'll see a lot more hydrogen, a lot more fuel cell. We're already starting to see that here in Georgia. And it's funny, actually, I listened to a podcast the other day that was quoting somebody that was saying, "Hydrogen is not the future. It's already here today." And we see that in Georgia too. It's already used in industrial applications, actually in power generation as well. We're already, again a forerunner there that a lot of people just don't know about. But then we have Plug Power down on the coast making green hydrogen there. Hyundai Motor Group and Georgia Tech just announced their partnership with the focus on hydrogen. So I think we'll see a lot of growth in that field as well. And I think because a lot of times people are like, "Oh, it's either or" but it's definitely not either or. And I think most industry experts would agree with that.

It's they'll go hand in hand because you'll always have applications where batteries make a lot of sense. You'll have applications where fuel cells and hydrogen make a lot of sense, and not just in commercial application or commercial vehicles, but also passenger vehicles. If you really think of any vehicle that shouldn't be too heavy, you probably would want hydrogen because batteries, if you need a longer range, make the vehicle heavier. And so I think you'll see that. And I like to say that if you look at gasoline and diesel, that already co-exists. And I think a lot of the diesel applications, which is really long haul, I wouldn't be surprised if those end up being fuel cell and hydrogen electric vehicles. And then the gasoline is probably going to be a lot of battery electric.

But again, I also think that there are some ... If you look at utility vehicles when they have to tow things or they have to carry these cables that's already really heavy, so you probably don't want to have a battery on that truck. You probably want to have something a little lighter. So yeah, so I think all of that will go hand in hand here in Georgia. And I also think that we'll probably always have some internal combustion engine vehicle applications. I think that percentage will shrink over time, but I think it'll always be there too. Just how originally if you look, 15 years ago, you had already a few electric vehicle applications, forklifts, golf carts, things like that where it already made sense. I think that'll switch, and then you'll see batteries and fuel cells co-exist.

Alan Poole:

Yeah, I think one thing we've learned developing things like alternative energy, alternative resources is you can't put everything in one basket. You're going to have unintended side effects all over the place.

Virginia Sengewald:

Absolutely.

Alan Poole:

Well, there's a lot of really good lessons from this conversation, and I really look forward to using them in my own job, which isn't exactly the same as yours, but any closing thoughts before we wrap this up?

Virginia Sengewald:

Yeah, I think really one key thing when it comes to electric mobility in Georgia, I think what has made us such a leader is the real focus on the future, that we've always looked into, what is the next thing? How can we make sure that we can pave the way for companies, so how can we make sure we don't put any roadblocks in that prevent their organic growth, their success in any industry that they're in? And really, I think that's my overall thought and why we've been so successful in this industry and why companies choose Georgia, especially for electric mobility. It's been probably our fastest growing industry when it comes to recent investment. We talked about this earlier. I mean, we're looking at over 31,000 jobs that have been announced in the past 5 years with over 26 billion in investment. I think we'll see that grow even more because of these partnerships and because of the focus on making sure Georgia companies are successful and adding companies to our Georgia family.

Alan Poole:

Well, on behalf of TAG, thank you so much for taking the time to be with us today. I think our listeners will get a lot out of this, and if ever TAG can do anything to help your cause, I hope that you'll reach out.

Virginia Sengewald:

Awesome. Well, thank you so much. This has been great.

Alan Poole:

Absolutely. Well, we really hope you enjoyed today's episode. I know that I did. I got a lot out of it. And please stay connected with us on LinkedIn, follow both the [Tech Association of Georgia](#) and [Troutman Pepper](#). And you can subscribe to our podcast on your podcast listening channel of choice. We look forward to you joining us next time.

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