Transcript for #85. Developing the EV Customer Charging Journey One State at a Time
Guest Rachel Moses, Director, Commercial Services, Business Development & Green Cities, Electrify America
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Introduction

You are listening to Fueling the Future of Transport, hosted by Tammy Klein, the Founder and CEO of Transport Energy Strategies. We'll talk all about the fuels and energy it takes to keep the world moving forward.

Tammy Klein

Hi, everyone. Welcome to the show today. I am, I always say I am so excited, but I'm really, really super excited to have with me today, Rachel Moses. Rachel is Director, Commercial Services, Business Development, and Green Cities at Electrify America. Rachel, welcome to the program.

Rachel Moses

Tammy, thank you so much for having me. I, too, am so excited to be here. Thank you!

Tammy Klein

We're both excited and that's really great. So let me get right into the questions here. So for the listeners who may not be familiar, it seems like everyone should know who and what Electrify America is at this point. But for the listeners who may not be familiar, can you talk a little bit about Electrify America, what you all are doing, and your role in the company? And also how did you get your start in this space? I mean, charging is still pretty nascent in my view.

Rachel Moses

It is. It is. And I feel very fortunate to be coming into my 15th year in the industry. I was very lucky. In Australia, actually 15 years ago I was fortunate to start with an early electric vehicle startup that was a battery pushing technology called Better Place coming 15 years ago now. And I've been in the U.S. for 10 years and with Electrify America since our creation in 2017. So, Electrify America is the largest open DC fast charging network in the US today. Across North America, we are over 800 sites, which equates to operating north of just 3,200 individual chargers. All of our infrastructure is 150 kilowatts, 350 kilowatts and we're open, meaning that we are non-proprietary. So, our network is really for all EVs. We also have residential products, our home chargers stations, and around two and a half years ago we launched our commercial business, which is what I head up today where we take everything that we do for ourselves as an owner-operator - site acquisition, construction installation, the selection of hardware, combination with our network backend and ongoing maintenance and operation, and provide turnkey services from that to those that are making their own investment in electrification. Prior to my role leading the commercial team, I headed up our real estate strategy group and am delighted to be able to spend the time today to talk to you about what we've done and where we're going and really where the industry is in the beginning of 2023.

Tammy Klein

Yeah. I can't believe what you all have been able to accomplish, I mean to become the largest charging company for DC fast charging. I mean, everything that you just talked about, you've all done in less than I think six years, five years. And that is like mind-boggling when you think about the history and everything that kind of has to happen for all of that to happen. It's incredible.

Rachel Moses

Yeah, it really is. I mean, we opened our first station in 2018 to then be at over 800 today, the beginning of 2023. And we continue to expand. So, we're going to 1,800 stations across the US and Canada by the end of 2026, which is over 10,000 individual expenses or, or charges. and our investment has allowed us to not only focus on building out this network that creates range confidence, but also really drive adoption by creating a convenience in the speed of the charging technology itself, in the way in which we design the customer journey, how payments are managed, what individual drivers of different vehicles need to feel confident that not only will they get a ubiquitous charging experience wherever they are using one of our sites, be it Vancouver or the Florida Keys, but that they also are getting a fast experience.

And this, I think is something that we've been very proud of distinguishing ourselves that six years ago when we made the commitment to invest in a minimum of 150- kilowatt - 350-kilowatt charging infrastructure, some folks thought we were crazy, to be honest. They didn't understand that the vehicles not only arriving five years ago, but the ones that are coming here from today require the fastest speed possible so that the convenience and the experience for the drivers is one that they actually want to use in the public. So, I think it's very exciting when we look at how far we've paved and what we've built out, but what we've got ahead of us as well as we continue to expand to 1,800 stations.

Tammy Klein

So what kind of trends are you seeing out there when it comes to EV charging? So, could be design, it could be installation, it could be site selection. And what are the biggest challenges and learnings that you've seen when it comes to getting chargers installed, expanding the network? What are the pitfalls that should be avoided?

Rachel Moses

Great question. So, when we first started to build our network, we were intentional about investing in locations that had amenities and experiences that customers actually want for their convenience and for the time that they are charging. And so we've been very thoughtful about partnering with property hosts that have retail, big box, convenience facilities that they can access during off-hours. And that was somewhat novel maybe six years ago and I think that that came from a very sincere place that even earlier in the industry, hand raises were those that had control of land that maybe didn't post those many of these. So that's been very important to us. And as we think about how we improve the location, we'll bring in additional lighting. We may bring in cameras as well.

And, we're really focused on how can we make the most enjoyable consumer experience whilst our drivers are charging. You know, in the last year and a half, two years - and I think this is such an exciting time through our industry - we've seen so many more vehicles come to market and it's kind of we're getting to this point in the curve that we've all been so excited about for the last decade. And with those additional vehicles obviously comes an increase in utilization. We are seeing tremendous year-over-year utilization on our network. In 2021, we provided 1.45 million individual customer EV charging sessions and then in 2022, we expect that that number is actually going to be greatly surpassed. And so if you think about that number of vehicles that are turning over on the network that are utilizing those sites, again, it comes back to what is the convenience, what is the experience those drivers have, their customer journey.

We designed our sites to be expandable, so we would stub out additional locations where we've seen the need for that additional infrastructure at a location. And I think the opportunity for additional expansion is continuing to be desired by the host, this industry. So those that previously were playing the role of hosting infrastructure, they're interested in having more {indescernable}, they're interested in having more sites. And then we're also seeing the trend of these entities starting to invest their own capital and this is where our commercial business comes into play. So how we can take the things that we've honed for ourselves and sell those services to retailers, convenience fueling centers, big box retail who are now wanting to own and operate the equipment themselves and have their own brand experience incorporated into the infrastructure. And then I would say another trend that is really emerging from this increase in utilization, which comes from the number of vehicles that are on the road is really what is the experience for the driver at the site. And, we've invested heavily in our center of excellence to make sure that we have a level of integration testing and regression testing with all of the automotive manufacturers to make sure that the experience is going to be a successful one for drivers at our site.

Tammy Klein

You know, what you're saying is actually true. I was at dinner with friends recently in Naples, Florida, and at the Barnes and Noble after dinner, and we were walking outside, and I saw - and there aren't that many around these parts quite yet - the ID4 - and it had New York plates. And so of course we were, sort of curious and looking, trying, hopefully not setting off the security system in the vehicle, but we were looking, and it was really interesting and it was interesting to me, for obvious reasons. And there were these people that were kind of standing close by, and as it turns out, one of them was the driver. And he was so striking to me because first of all, he was an older driver, and he had actually brought the car down - he's a snowbird - and he had actually brought the car down from New York. And so I asked him what his experience was, and was like, “did you have any issues? Is it a problem, you know, driving?” You read all of these stories, you know, ‘I took a 2000-mile road trip and oh my God, it was horrible and I couldn't find a place to charge.’ And he said, “no, I relied on the...I charge with Electrify America. And I came almost all the way down and I used Electrify America, and I had no issues, no problems. It was great. It was easy in, easy out it is the best thing ever. I'll never go back to petrol or to get gasoline.”

And I mean, he really raved about it. And his wife did as well. And it was striking to me, because that's what you're saying, the customer experience for him as, an older person, which we can't assume. Not everyone is tech-savvy, but you know, we may generalize. And it was so easy for him, and his only thing was, oh, I'd love to see more stations around Naples. And I was like, “well, give it time.” So, what you're saying is amazing. He had an amazing experience and it's because of the things that you're saying is taking all of the friction that is possible out of the experience and making it that is super easy.

Rachel Moses

Thank you for sharing that. That is really great to hear. And the ID4 is, is a fantastic car. Yes. It's amazing. And it comes with the three years all you can eat access to the Electrify American network and I'm so happy to hear that distance of a journey as well was an easy one. We know that there is still some of that friction, and what we have thought to do is to invest with the automotive manufacturers as our partners in how we are testing with them, how we are going proactively with a roaming fleet of vehicles out to all of our sites nationwide to pick up on challenges that might be at the location that we don't see on our software backend.

For example, a connector might be damaged that may not have been called in and we have in addition to that lab, the Center of Excellence where we conduct all of our testing customer contact center, but beyond that, our network operations center, which is really mission control. It's where we operate 24/7, the monitoring of the performance of the network, and are able to address real-time concerns. And that it is, to your point, the most important part of this journey and to really achieve adoption is the experience of the customer. What is happening to them whilst they're plugging in? How easy was it? How seamless was it? And different people, like different ways in which to initiate a charge. This a really good example that you just provided of somebody who is maybe a little bit older. Not always do people feel as comfortable with the mobile phone app? And so how we've invested to make that seamless and for example, plugin charge, the ISO 15118 standards really addresses that. It's a payment technology that allows the customer convenience where there is a seamless transaction and conference of the certificates. That billing is simple. If you plug in, it recognizes that you're Tammy Klein and you charge. And so that's also been really critical for us, how we can make sure that we are continuously leading the innovation of this technology that creates convenience and that is most applicable to the most amount of folks. It can't just be a handful of vehicles for a handful of driver types. It has to be for everyone.

Tammy Klein

So how do you...so you talked a little bit about technology, but how do you see technology for charging evolving over time? I mean, there's lots of discussions about VGI (vehicle-to-grid integration), wireless charging, those types of technologies and others. So how do you guys see that evolving over time and, how do you see that coming into the Electrify America portfolio?

Rachel Moses

So vehicles, a grid, wireless charging, there is a lot of excitement in the industry about these technologies about how we improve battery density, battery efficiency.

Tammy Klein

Right, exactly.

Rachel Moses

I think what our focus is really on, to be candid is ensuring that for public ultra-fast charging, we are providing a successful consumer experience because there's actually continuous technology deployments that have to be made in the realm that we are focused on today. So, what does that mean? It means that...I mentioned plug and charge, more vehicles are adopting this and that requires implementation and testing. More investment is going into how are we making sure that we've had every iteration of aggression testing as possible and are accommodating all of these vehicles. So, for us, the focus today is very much on providing the most consistent, most advanced technology for public ultra-fast charging and then that use, we actually are applying to heavy-duty infrastructure. So because we have this experience now, unlike really any other entity of owning and operating over 3000 ultra-fast, so 150- and 350-kilowatt charges, that is now translating into how are we serving the trucks, how are we serving the medium and heavy-duty vehicles that are entering the market either as part of you know, medium range fleets or last-mile delivery fleets, or the applications that I think we're most excited about, which is drayage.

Because the turnaround point, particularly in California, when you think about the vehicle going from warehouse or depot to the port and back, ideally lines up with the range of those trucks today. And so if you think about, try and come

back to what your question was, the technology that we're excited about, it's the fleet management and everything that ties in behind the scenes of the experience for that fleet for heavy duty and how that then corresponds with what we've built out for ourselves today as ultra-fast charging experts to an extent in that we have this experience. And how has that been applied.

Tammy Klein

So I'm really interested in asking you, as you pointed out, you are in commercial services, so you are really at the forefront of doing this kind of scale-up in the medium and heavy-duty sector. So, can you talk a little bit more about your work in that area? You know, what's the are you, are you having companies you know, come to you and, and how do you see more broadly charging, evolving, not just for the light-duty fleet, but really especially, medium and, and heavy-duty fleet? Because I think all eyes are on that. It's like the renewable diesel producers and the biodiesel producers are really curious. And the RNG producers - renewable natural gas - they're really interested. And then you've got all of these vying for, and now of course then there's hydrogen that's sort of a little bit further behind, I think like five years ago, I was like, 'ah, no, that's, that isn't going to happen.' But it is happening. It's happening for medium and it's happening for heavy-duty vehicles.

Rachel Moses

Yeah. And I think today what we have to look at is what is the range of the vehicles? And they use case how long are they dwelling for? What is their turnaround time? And match that against the right application where it makes sense to electrify. So, I think there are a lot of fleets out there that are starting with drayage, and maybe then they'll move on to consider the medium or longer-term trips that today the vehicles are not necessarily aligned for. So if you look at drayage, for example we're investing $25 million into the state of California, particularly into the port of Los Angeles and the Port of Long Beach and, and the serving communities of those ports. And what that has allowed us to do is get very close to those fleets that are, to your point, they're looking at various technologies and they're innovating and they're testing and their trialing.

And I think that's where what we can offer is so complimentary because they require the fastest charging experience that they can have that's going to be reliable in terms of background for that next trip and that's really probably where drayage sort of shines. And our experience in charging is so well aligned. I think it's early days to an extent that the fleets are not committing their entire fleet nor should they, right? They're looking at what are the use cases and the number of vehicles that we can align to learn early, learn this equipment, learn what the experience is for their drivers, and then take that as we think about the largest fleet operations. We have a site in Ontario California with NFI Industries, that is something that we're very excited about that location because it is coupling with the charging for these class 8 tractors, four megawatts of storage, and one-megawatt solar. And I think that this model will be one that other fleets that are quite frankly as anybody, as NFI will continue to adopt. And I'm a little remiss too, actually, and I don't want to go too much of a tangent here, but you asked about the technology and I didn't mention that. One of the other things that we've done - and we have to do quite frankly - was to couple storage with our public DC fast charging sites. Today we have over 150 of those 800 locations where we have added battery energy storage to the location.

Tammy Klein

Wow.

Rachel Moses

And that is something that we offer for our commercial customers. We look at what are the utility costs in a specific location. What type of demand are we forecasting? Does it make sense to add that capital upfront to improve the economics of a location over time? And as we think about the adoption of fleets that are particularly on the heavy-duty side, the class 8 vehicles where they have a warehouse, a depot location, or even a port where we've partnered on another property with installing sporty dispensers at a single location on port land, what type of storage do they need? Or even coupling generation with solar to be able to improve the economics of their entire operation. And that's something that we're really excited about continuing to build out.

Tammy Klein

Do you see that happening more and more where site hosts or investors just decide I'll couple that with solar or wind or, some type of renewable energy into the site?

More often than not, it's solar. Solar, and even then it will be of the total utilization of the total capacity of site, the solar is somewhat nominal only because of just how much the EV can generate. But what it does allow is, and particularly the case for Ontario, is the ability to have a microgrid island, the facility, should there be a power out from the utility. I think probably what we're seeing more rather than the coupling of generation is the coupling storage and that's something where it's very specific. You've got to look at what is the geographic location, what are the utility, the rates, the demand charges, and then couple that with your forecast of utilization. And this is something that we're pretty excited about offering to our commercial customers, because we can do that analysis for them by looking at our own utilization. And this is where we are quite distinct from some of the other networks out there in that our forecasting capabilities incorporate now four, five years of utilization on our 150- and 350-kilowatt network. Others are not necessarily able to pull from that same data.

Tammy Klein

Yeah. That's powerful.

Rachel Moses

Yeah. It's really exciting to be able to share those insights. So with NEVI investment from the Infrastructure Investment Jobs Act from the Biden Administration, one of the things that we're supporting for our commercial customers is where do you focus your capital? How do you prioritize these routes? How do you prioritize your investment? And we can actually give them those insights in a way that I said quite frankly, no one else can.

Tammy Klein

Yeah. So I want to ask you a little bit more about - you just mentioned NEVI, the infrastructure legislation that was a huge down payment on expanding nationwide charging infrastructure that's all being rolled out now. But in your view, what other kinds of policies do you think need to be set? You know, could be at the federal level, could be at the state or the local levels to really help expand charging or remove barriers to expanding charging. you know, one thing that comes to mind is managing demand charges or finding ways to deal with that. Another one is that comes immediately to my mind is the need for expedited and streamlined permitting, which is, is beginning to happen. It's kind of things like that. What are, what are you seeing and in terms of gaps and how, what needs to be addressed to break down barriers and continue to expand charging?

Rachel Moses

Absolutely. And, look, I'll start by saying that the NEVI investment is really exciting for this country. It will make a significant difference because America needs thousands of ultra-fast reliable charging stations that are universal and non-proprietary in order to really push adoption and continue to do that. And, and to my earlier point of EV being accessible for everybody in all geographies, this investment is really needed and we're really excited about being able to support our commercial customers in their pursuits of this investment because we think we have a position to be able to really focus where that capital will go. There is, and I am blanking on it at the moment, which is mortifying, but I will make sure that we follow up with you. There was a policy that was released in California last year, the year before last. And it, I don't want to say the wrong acronym but that's what it was focused on was the expediting of local jurisdiction. And it was a really important piece of policy because what it meant was that the individual jurisdictions that issued permits, the permitting authorities, had a maximum amount of time, which they're able to delineate on that permit. And so, it really speeds up. And, I don't think that these AHJs were deliberately not prioritizing for these people…

Tammy Klein

Right, right.

Rachel Moses

But it puts an emphasis on the speed at which permits have to be considered and reviewed. And so that is one that I think is a really fantastic piece of legislature that we would recommend in other states. So, we can definitely link to that. And then the other thing I'd say is that NEVI, we were also very encouraged to see that the minimum requirement for the investment, actually, well, we have invested ourselves for dispensers capable of a minimum of 150 kilowatts each. And I think that is also something that we really encourage now, and it's fantastic to see that the federal guidelines set that minimum, but we really encourage for those that are looking at what type of investment makes sense or, or what is a minimum amount of charges for this, this experience that's going to be required in terms of actually being utilized and desired by those vehicle drivers. And so that's also something I think from the policy side, that was really, really fantastic to see.

Tammy Klein

Yeah. I think that's really important because there had been an existing policy or existing legislation, but I can't remember the numbers either for the record. And you know, it was kind of, you heard these stories of those expedited permitting legislation in California directed counties and cities to ‘hey, look, we need to be fast and here are some guidelines and standards and things.’ And, and then I think there's some cities that really implemented that, or AHJs implemented that very quickly. They operate with that in and out done. And then others you might be dealing with the case of shrubbery like things need to look a certain way or be designed a certain way. So those are the stories that, that I sort of ran into is plans going back and forth, back and forth, back and forth, back and forth, because things need to conform to a certain look and it needs to those kinds of things. And I think this legislation was, ‘no, you've got 90 days. This is it.’

Rachel Moses

It's AB 1236….which it requires that charging installation be approved by local public agencies regardless of whether the association issues approval for the station. And so, it really requires that there's this establishment of standards, to your point in terms of the efficiency of back and forth. And again, I think this is, this is about just the two biggest timelines that are out of control for a network operator or for those that are making their own investment are the permitting timeline and the utility timeline. How long will it take for a utility to bring in a new source of help? As we have, I believe today, it's now over 300 utilities that we've worked with individually to bring our patients online. And every time we do

that we're building those relationships. We're part of the educational journey of what is needed for the charging, and they are eons away from where they were five, six years ago. Yes, there is still opportunity for improvement, but as you think about the type of engagement that we're getting from utilities, it really has involved. And so, this piece of legislation on the permitting side also really helps to improve that timeline where you have less control.

Tammy Klein

Right, right. So let me ask you fun, and last question. What excites you most about this space and why?

Rachel Moses

I'm very excited about the number of vehicles on the road today. If we think about the different price points, the body styles, the variety of vehicles that are in the market, I could have only dreamt about that 10 years ago. So that's probably the first thing is that we just have so many different cars and more and more people enthusiastic about both cars. I'm very excited about trucks. I think that there is an opportunity for the heavy-duty electrification to learn the lessons of the last 10 years, where to place infrastructure, how to size, how to make sure it's fine and I think that as the technology improves on the truck side, we will continue to be able to leverage the infrastructure improvements that have been experienced by the passenger vehicles. And I'm also really excited about Electrify America, to be honest.

It probably sounds a bit cheesy, but we're a young company and I think that we've accomplished a great deal in a short amount of time that we have. This future-proof network - that kind of also sounds a little cheesy - but I mean, it kind of inspires more confidence in folks to switch to one of those vehicles that are now in the market. And it's a really exciting time, I think, not only for us, but for the industry. We're, we're seeing adoption at levels that, like I said, only years ago, I could have dreamt about. So I think it's going to be a great year and it's going to be a great next few years for electrification.

Tammy Klein

Well, Rachel, thank you so much for being on the show today. It was an absolute pleasure to have you.

Rachel Moses

Thank you so much for having me, Tammy.

Closing

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