Transcript for #69. The Rapid Acceleration of the Pace of Electrification
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Guest Britta Gross, former Managing Director for the Rocky Mountain Institute's (RMI) Global Carbon-free Mobility Global Program and Commissioner for the Orlando Utility Commission

Intro (00:01):

You're 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 (00:16):

Hi everyone. This is Tammy Klein. Welcome to the show. I am so pleased, to have with me today Brita Gross. Let me tell you a little bit about Brita. Brita is a former Managing Director for the Rocky Mountain Institute's (RMI) Carbon-free Mobility Global Program. This is a practice that is focused on market-driven strategies, technologies, and policies required to accelerate towards carbon-free mobility solutions globally. So Brita...and how I first came to know Brita is she's formerly the Director of Advanced Vehicle Commercialization at General Motors. She was responsible for the energy strategies, partnerships, and policies required to enable the wide-scale commercialization of battery, electric, and hydrogen fuel cell vehicles. Brita is also a Commissioner for the Orlando Utility Commission in Orlando, Florida's electric and water utility. Thank you so much for joining the program, today, Britta. It is it's wonderful to have you with us.

Britta Gross (01:23):

Thank you, Tammy. It's a pleasure to be here. And boy, those were a lot of words you had to read.

Tammy Klein (01:28):

It was, oh, it was, it was. But, it is your background is just, is so amazing and it's, it's nice to be in this iteration with you. So I wanna get right into the questions. The first one is you've done. You're one of the people that I most sort of associate out there with really carbon-free mobility and electrification in this country and globally on the forefront, on the cutting edge. So the first question that I wanna ask is how do you see the electric vehicle market evolving over the next 10 years in particular, especially here in the U.S. And do you think California will be able to meet its ZEV targets under its Advanced Clean Cars program? So let's just get right into the heart of it.

Britta Gross (02:30):

So, while that was a loaded question. Let me try to break it apart in its bits. Let me first talk about the motivation for why countries - the U.S. - why we're all looking at electrifying transportation. The first motivation is global competition and global competitiveness. The automotive sector is responsible for about three or three and a half percent of the US GDP. It's a very, very important sector, not just for GDP, but also the skilled labor force, the technology it creates, and so on. China would love to own...leapfrog over the combustion engine vehicle into electric vehicles. So they're going electric. Europe's going electric. So global competition is on the minds of really every bipartisan bill, every automaker, every truck maker, et cetera.

Britta Gross (03:14):

The second motivation is carbon. Reducing carbon from the number one sector in the U.S. of carbon emissions and that's transportation. So for those two reasons, that's the motivator. What I see happening in the next 10 years is that we're gonna see a lot more mainstream products. You may remember the launch recently of the Ford F-150. That's a big deal,

right? We're not talking about one-offs. This is a vehicle that every American understands. How it's, how functional it is, how it has so many different purposes from rural to labor force, moving, plumbing and electrical equipment around to repair things. So I think that moving them more into the mainstream is really what's gonna be important.

Britta Gross (04:05):

GM also announced their Silverado, that's coming. VWs, coming with a lot of products. And I think you're also gonna start to see not just one vehicle model from one manufacturer, but now you're going to see portfolios of electric vehicles being offered. And that's what Americans are waiting for. Right? More variety, more functionality, more options on these vehicles. There are folks that live in mountains, they're gonna need off-road and four-wheel drive vehicles. And those are in the market today, electric vehicles, but not in a large volume, not in a large variety. And I'm talking here about not just the light-duty vehicle market. Clearly that's the big culprit for carbon emissions, by the way, almost 60% of the transportation emissions are coming from the light-duty vehicle sector, the cars and trucks that you and I drive.

Britta Gross (04:51):

So the light-duty vehicle sector is really important, but medium-duty and heavy-duty are right behind these things with products that are available today in the market. And I would just finally say the OEM investments if anyone's paying attention to the last year and a half, two years of these big billion-dollar investments, I mean, GM, I dunno, $30 billion, Ford $35 billion, Volkswagen, $50 billion, even in singular states, we're looking at $7 billion, $8 billion by individual automakers. I think there's no turning back now. And I think that's this momentum that you're seeing right now.

Tammy Klein (05:27):

I think it's so interesting that the first thing that you actually mentioned was not the carbon-cutting that electric vehicles represent but it's the competitiveness and I've seen that for a long time that this is as much... and I see it also for hydrogen as well, actually...that this is sort of the race to dominate. And now you see the US and Europe following China. It's battery manufacturing and it's the vehicle manufacturing, and it's the charging and it's the race to dominate as much as it is about reducing greenhouse gas emissions and improving air quality.

Britta Gross (06:23):

Yeah, exactly right. And I'm glad you really picked up on that too. There are so many wins in here, and that's why you're starting to see real bipartisan bills promoting the extraction of minerals and the processing of raw materials that are gonna be needed in batteries. and so on. You're seeing investments in charging infrastructure. This is important to everyone because it's about global competition. It's about high tech industries. It's about higher paying jobs and, and again, what it all represents to the economy and the wins that go along with it are just zero tailpipe emissions. You mentioned the local air quality, and really you start to get into issues like equity. When we start talking about just eliminating these tailpipe emissions, this is really an equity issue, because folks that live in low income communities are often right there next to highways, right there next to warehouses where the trucks are coming in and out day after day after day. And those are health issues. So win, win, win all over this, really a no brainer to electrify transportation.

Tammy Klein (07:22):

So what do you think about whether California and other states are, are starting to put into place ZEV goals ZEV targets - I think it's very personally myself as, as an analyst, I think it's very likely that states will follow California's lead into Advanced Clean Cars too. And that we may see more states going the way of setting more hard targeted you know, ZEV goals that need to be reached. So my question to you is, do you see states, especially California, do you see them

meeting their goals? Is there gonna be enough electrification? Is there gonna be enough vehicles out there? Is the tide in terms of consumers sort of beginning to choose these vehicles, is that gonna happen in enough of a way for states to be able to meet them, or is the point to just put the goal out there and to get the industry consumers charging, like to just kind of get folks kind of moving forward?

Britta Gross (08:31):

Yeah, if you had asked me that question four years ago, I would've said, 'boy, I'm not seeing the alignment in the sectors that have to be aligned.' I mean, yeah, you saw some early movers like California saying, 'hey, this is important to us.' We have these large ambitions, like the Advanced Clean Cars and proposed ruling that's gonna be coming out for criteria pollutants in greenhouse gas emissions after the year 2026. They were making some moves, states like Washington, Oregon, Colorado, and others following. But you know, if you don't have industry lined up right next to you, it's really hard to see the path forward. And, if you don't actually have the Federal Government lined up too, it's really difficult for automakers and truckmakers to figure out how to deploy vehicles in a patchwork system like we have where the rules aren't the same in every state. But I think over the last two years in my mind, and having been in this industry now for 20 years, more than 20 years, I think everything's changed.

Britta Gross (09:36):

I think you are now seeing major, major, not only commitments, but investments. I mentioned those earlier too. I mean, when...and I guess the one big thing that really made a difference...of course, you've got Tesla out there dominating the electric vehicle market today. But what you really wanna see are the rest of the market, the big players that actually produce 17 million cars and light-duty trucks a year. And when General Motors came out about, I don't know, what was it two years ago at this point? And said, 'hey, our goal is to sell a hundred percent electric vehicles by the year 2035.' And now you start to see, well, wait a second, that's exactly what California's saying in this Advanced Clean Car proposed rule, that's what their ambition is too for 2035.

Britta Gross (10:24):

So when you start to see big automakers, states, and even the Federal government doubling down on these targets like, where are we trying to go? It drives confidence into the market and the investors start to see that. And that gets exciting. So you're seeing again, the billions of dollars investment, I don't think you can turn back from. Once you start to put that money down, $7 billion, $8 billion, $10, $30, $50 billion - there's no turning back from that. Plants are being converted. Plants are being built to build batteries, to build the battery cells for the batteries and for the vehicles that are gonna be electric. So I think that that's where we are. So can we make the targets now? That's, that's another question now, where are the consumers? And I think there, we have to fight really hard on things like charging infrastructure.

Britta Gross (11:13):

It has to be better. The NEVI program, this national EV infrastructure program that the Federal Government is now working towards with Congress in the new bipartisan infrastructure plan, this is critical, and we are gonna have to solve charging infrastructure, home work, and public charging, because you've got to inspire that confidence and then the products have to come to the market. So I think finally there is a path and I think there's the ambition, and we have to tweak and solve a few very, very critical problems right now, and challenges, but boy, have, I never felt more confident than where we are right now.

Tammy Klein (11:53):

So let's talk about the charging piece of that, because I think that's, what's really interesting to me is whereas yes the infrastructure bill, bipartisan seven and a half billion dollars just for EV infrastructure. And this is where you're not you're not seeing the...if we talk about things like carbon tax, national Low Carbon Fuel Standard, ZEV mandate, you're not going anywhere with Republicans. Like it's just not even gonna happen. It's not gonna happen at the Federal level and it's not gonna happen within the states. However, when we start talking about putting the infrastructure into place and sort of other pieces, but I think infrastructure's really the key that's where I really see a lot of activity, even in a state like Florida, our state with a Governor who's is pretty Republican. And there are all these investments that are happening here in Florida - charging corridors and things like that, which, the Governor fully support.

Tammy Klein (13:06):

So that's, what I think is really interesting is you need the infrastructure. You may not even need a ZEV mandate, but you need the infrastructure and you need the support for that. And you need the financing for that. And I think that's the real...if we wanna talk about anything in terms of carbon policy for transport energy, I think that right now is the total bright spot. So I'm wondering if you're seeing it the same and also how do you see charging evolving over these next 10 years from now that these investments are starting to come?

Britta Gross (13:47):

So maybe just I'll provide a little bit of perspective around this national EV infrastructure program that was again, bipartisan, and approved in the IIJA bill, I think what's important is again, I think the reason is bipartisan, is back to the point about this is important for the market. This is important for global competition. So I think that I'm speaking to both conservatives and I'm speaking both to progressives. When I say people are understanding this, those folks are understanding what's at stake here. If we don't get this right, I do think some states are much further ahead. I think Florida's gotta do some catch-up now. I think there are spots like my utility OUC where I sit on the board because they were actually actively putting in charging around town 150 chargers way back in 2010, 2011. So, I mean, there are some very progressive sweet spots, but there's no question charging infrastructure still does not feel ubiquitous and it's definitely not reliable. And these are two things that the national EV infrastructure program, we call NEVI for short, is attempting to address.

Britta Gross (14:50):

And it's a down payment. It is a seven and a half billion dollar program that may sound like a lot of money. But all the analyses out there, including the work that I performed at RMI and Atlas policy, have shown that we're probably gonna need closer to $40 billion. And I don't think...I'm here to say again, you can't do this all on the back of government, but you have to use government to drive confidence into the market. Because the investors will play when there's confidence, when the risk is taken out of the market, and that's where these signals have to align. And that's what we're starting to see right now. And I think that's what's really important. So when I think about like the highway infrastructure system - the highway charging infrastructure system, which is what the NEVI program is all about - it's a lot like the interstate roadway system that we built back in the fifties.

Britta Gross (15:39):

I don't use that interstate system very much. I mean, I'm in Orlando and sometimes I'll go up to Tallahassee and sometimes I'll drive down to Miami. I don't use it very much, but boy, am I confident that if I wanted to take an interstate and drive from Orlando to Los Angeles or Chicago or Atlanta, I can do it. That's what charging infrastructure high speed charging infrastructure has to be. It's not gonna be used all the time, but you want that backbone in place. You wanna know that you can go anywhere you need to go. And that's what NEVI is doing. This National EV Infrastructure plan is

about every 50 miles putting four big chargers, fast, high speed chargers that are very visible with upgraded reliability and maintenance and uptime requirements so that it drives confidence into the market so that the investors, the private market, can show up and say, there's no question, my money's not at risk anymore. This is going somewhere. I see the 2030 targets. I see the 2035 targets, this is gonna now work. I'm ready to put my money into this market.

Britta Gross (16:40):

So that's what this program is doing. It's a down payment on private investment, really critical, but in the end, this really does come down to home charging. Doesn't it? So, I mean, home charging today, all the evidence, all the data suggests that anywhere from 80 to 95% of all charging is done at home. Now that's because a lot of early EV buyers of course live in single-family homes where it's easier for you to call an electrician and have them wire up your garage, or just do the outlet. I plug in... I've been driving an EV for 10 years, and I plug into a regular 120-volt outlet. So that works too, but we have to start moving these home solutions into apartments and condominiums and folks, again, we're talking about equity as well. Everyone should have access and a lot of Uber and Lyft and taxi drivers live in areas where they're renting an apartment or living in a condominium. And so we have to think about home charging as sort of the workhorse of EV charging, but you gotta have those highways done too. And then I don't wanna ever overlook destination charging because when I'm not at home and I'm going to a park, a beach, a national park, a state park, museums, and sporting arenas. Those are places where I'm out of my comfort zone because I've driven a long way to get there. I don't do it very often and I need charging there too. So between home destination and highway charging, we're getting there, but there's no question it has to precede the vehicles and it's something that the automakers and truckmakers are concerned about because they don't control the charging infrastructure, not at the scale we need to have happen.

Tammy Klein (18:15):

So it sounds like what you're saying is over the next 10 years, you see more charging amongst and around national highway corridors, which is something that's, as you say, is underway, now. Home charging will continue, but will move more into areas where folks are in condos and apartments, they're not in single family homes and there will be more destination sort of thoughtfully placed destination charging to provide that confidence. So you see that really those three areas are really shifting and changing and growing over these next 10 years.

Britta Gross (19:04):

They have to, and they have to accelerate fast. And let me just give you one statistic. If you go look at NREL's AFDC - Alt Fuel Data Center, the Alternative Fuel Data Center, where they track how many stations, charging stations, hydrogen fuel stations, et cetera, are around the U.S. If you go look at their last report or more recent report, we're installing about 600 DC fast chargers every quarter. Bu numbers, to get to the kind of numbers that are climate-aligned in 2030, the kind of numbers that GM and California are working towards those numbers suggest, we should be installing today 10,000 DC fast chargers every quarter from 600 to 10,000. So we are nowhere near the pace of charging infrastructure needed to meet the automators and the truck akers, where they are planning to be in 2030. And that's what we have to address right now is getting to that point.

Tammy Klein (20:01):

So how do we, how do we do that? What additional policies, if any, do you think in your view need to happen to sort of get us there? Because I saw a similar statistic. I think it's the same one. It's basically we need to do 300 DCFS charging stations a day and it's like, 'oh my God that's a lot!'' But that's kind of where we need to go. So what kind of policy do you think needs to happen to help us get there? Money's one thing, but are there other things?

Britta Gross (20:34):

Yeah, I think that there are some underlying challenges that are preventing us from moving from 600 chargers a quarter to the 10,000 chargers being installed a quarter. And I'm just talking about DC fast charging, those a little bit smaller numbers so we can talk about them with some kind of sense of understanding of what we're talking about. But there are some challenges...permitting...the time it takes to just permit. Lemme back off a little bit here. It is really complicated here in the U.S., Right? We have a very open market and so on. It's a complex landscape. We're not like China, where we have two major utilities and the government just tells the two utilities here's what you have to do. And I want this done next year. We have 3,200 electric utilities across the U.S. Some are these large investor-owned utilities and some are the small co-op and community-owned utilities. And so add to that the complexity of the way we permit, right? We have 23,000 authorities having jurisdiction. These are where you go get your permits for your new bathroom or whatever you're doing.

Britta Gross (21:38):

And, you have 50 states that have different building codes and different guidance they're sending down to the permitting authorities and you can't permit unless you know what the plan is, and you can't plan unless you know what the zoning rules are. We have this complex web. And so there's no question we have to work harder than I would just suggest anywhere else to solve these system issues. And what's really interesting when you talk about permitting takes eight, nine months, on average, across the United States, some are faster, some are much slower. It also takes like eight, nine months on average to just get grid power to a site because we're not sort of thinking big scale. We're not thinking like, what do I have to build today to get ready for 2030, if this is going electric? And I think it is going electric. What should I be doing today to the grid and to be bringing power to different sites around town where I know there are big warehouses with big delivery vehicles, what should I be doing to address these kinds of fundamental systemic issues that are just driving time delays into the market, which is cost, which is risk for investors, which is again, the enemy of all of us is this risk in the market. These are the kinds of things we have to do and I was really heartened because the day before I think it was just days ago, the White House just issued, I think what they're calling a 'permitting action plan' and I was just stunned again at the awareness that's coming right now from a very, very astute Department of Energy and Department of Transportation that I've just not seen this before.

Britta Gross (23:11):

They're really paying attention to not just shovel-ready projects to put chargers in the ground, but what's preventing us from doing it. Doing more of this and getting rid of the barriers to private investment coming into the market. And so they've actually stepped back and said, we get it, permitting is a problem. So these are some of the underlying things that have to be addressed. I think building codes, I'll say this forever, it's the no-brainer way to make sure that every apartment, every condo, every home, if you're building new or if you're remodeling, it just should be part of the permit requirement. You've got wires that lead somewhere where a car's gonna be parked because in 2030 50% of all sales are gonna be electric. And in 2035, the ambition is a hundred percent of all vehicle sales are electric.

Britta Gross (23:55):

You need a place to plug in these vehicles. It could be a simple level 1 120 volt outlet. ,It could be level two in public probably DC fast charging. We just gotta get the building codes, right. Again, a no-brainer for 50 states just to drop down the guidance so that the local jurisdictions understand why we're pruning in this way and what the building code requirements are.

Tammy Klein (24:16):

Yeah. I think what you're saying is so important, this is an area that I've worked on myself with the Fuels Institute looking at various assorted barriers and permitting just comes up time and time and time and time and time again. And it was astonishing for me when I did that research project looking at the 50 states. And then also the select metropolitan statistical areas, we looked at a hundred cities and counties, and I was shocked at how there weren't a lot of these very large areas at all addressing this issue.

Tammy Klein (24:57):

But also it was either super, super Byzantine, super, super nothing and then there were some that really had done quite a lot like Atlanta of course, California with both their Green Building code and expedited permitting. I mean, it was really shocking and this was in 2020. So I think localities or authorities having jurisdiction are beginning to recognize that too, but yeah just the barriers to permitting and then also to get the infrastructure in place from the utility and what needs to happen on the utility side to make that happen and that that you might need to get approvals from the PSC. And it's also caused me to wonder, is the PSC process, the way in which they do consider filings and so on and so forth is that even really conducive to the speed at which we need to get charging approved so that the utilities can move on their side because they want to move, but they're kind of in a process that's not really adapted to what we need. So I'm wondering if you see that too, especially as a utility board member?

Britta Gross (26:19):

Yeah, let me say, I love that you picked up on this point because we are still treating electric vehicles as if these are these one-offs that rich people are buying the EVs and the charger is a one-off over here in this public space. We are not yet stepping back, and I'm talking about public service commissions. I'm talking about governors, I'm talking about state planning authorities and so on. We are not yet masterminding what do we have to do? Because we're going, I mean, does anyone argue with the signs I've laid out where the automotive industry's going, where the trucking industry is going, where the big fleets are going, look at the commitments by Amazon UPS, FedEx, etcetera, they are going electric too.

Britta Gross (27:04):

It's cheaper to run on electricity. They buy that. They understand what that means to operating costs. The most significant part of the economics of running a fleet, operating a fleet. And so we are still treating it as one-offs instead of viewing this as if all signposts suggest we are getting to we are getting to this point we're 50 to 70 million electric vehicles will be on the roads in 2030 and a hundred percent of EV sales. I mean, as far as everyone's ambition is in 2035 will be electric, how will we actually...what do we need to do today to make sure the grid is ready? And that's the question every utility PSE, PUC, etcetera, should be asking because it is no longer about one-offs.

Britta Gross (27:50):

It's about Uber and Lyft having announced that they also have full intentions to go a hundred percent electric by 2030, again, in no small reason, because California has mandated the clean mile standard, which requires 90% of their miles to be electric in the state of California. But what starts in California ends up having...there's a reason for economically why these things happen. So I think that even Uber and Lyft with electric vehicles, that 50% of all rides begin and end in low income areas, they don't have cars generally speaking in low income areas. So there's a lot of ridership in low income areas and there are drivers of a lot of taxis and, and Uber, Lyft drivers that live in communities and they don't have access today to almost any charging infrastructure. And that has to be solved.

Tammy Klein (28:41):

So last question, or next to last question. How do you see electrification evolve in the heavy-duty space over the next 10, 15 years? We talked about the light-duty space. We talked about charging infrastructure. Can you say a few words about how you see heavy-duty and medium and heavy-duty evolving over these next 10 years?

Britta Gross (29:02):

Sure. Look, we, we cannot look, whereas, in the light-duty vehicle sector, you can almost think of it like this homogeneous. They operate in the same way. We're all commuters and we're all driving short distances. 80% of Americans travel less than 40 miles a day. And you can sort of apply that to the light-duty vehicle sector. When you talk about medium-duty and heavy-duty vehicles, you don't wanna continue to think about this as sort of a homogeneous group where everything is the same, you need to segregate and segment out that sector because there are solutions that are ready to go today.

Tammy Klein (29:37):

So NACFE, the North American Council for Freight Efficiency, which is a sister organization to RMI, they just released a report days ago that suggested that half of regional class eight trucks, these are heavy duty class eight trucks could be electrified today. And they base that on the run-on-less-electric demonstration that took place here over the last year. And so when you look at what makes a vehicle electrifiable short enough distance, return to depot at night, those vehicles can do it even with heavy beverages on board because the distances are shorter or with large volume loads that are lighter can go even further distances. But 50% is the estimate of NACFE of the trucks that now can be electrified with products that are available today that you can go order.

Britta Gross (30:32):

And so I think that's how we wanna view this. I think that as we continue to segment out the medium duty and heavy duty vehicle sectors with what's not going so far, what returns to depot, where do they just 24 hour cycles back and forth, back and forth from a porch over to a warehouse, etcetera, those are opportunities to electrify with batteries. And I think you don't wanna overlook the opportunity of hydrogen fuel cell vehicles, another zero emission pathway and so you could see easily applying hydrogen to maybe cross country long haulers. I mean, I was talking to a moving company here a few months ago, a guy that just travels the country, taking goods from Denver to Orlando, for example, in my case. And when I asked about what do you think about battery vehicles?

Britta Gross (31:21):

And what does your route look like? And he just said, 'I never know. I just pick up the phone and someone says, hey, now I need you in Spokane Washington, now I need you over in New York City.' And they don't know. So this uncertainty, this long mileage, I think I see hydrogen playing a bigger, bigger role, maybe also for large transit bus...

Tammy Klein (31:37):

I do too.

Britta Gross (31:37):

...those longer distance routes. And so I think there's a real economic solution there and all the big fleets are looking at this too. All of the big fleets are looking at demonstration programs with their hydrogen vehicles to understand what part of the problem can hydrogen vehicle solve.

Tammy Klein (31:52):

So, super last question. And I agree with you on hydrogen, especially for the heavy-duty space. Super last question. So what excites you most about this space?

Britta Gross (32:07):

Oh, wow. That's an open-ended question. So I'm gonna say, it really is the alignment finally, after 20 years in this part of the business, where there was just...it's just when the Federal Administration got going, then it was industry was sort of behind when industry gets going, you know, some of the state regulations are a mishmash. Finally, we're starting to see real alignment because it's, for all the win, win, win reasons that we talked about earlier, right? It's carbon reduction, it's tailgate tailpipe emissions, it's global competitiveness and the economy and better jobs and better-paying jobs here in the United States. And so what excites me is that we have this white paper exercise right now going on in the utility space because they are also decarbonizing the grid. We're dialing down and transitioning away from coal because we need to, we have to. We're beginning to dial down and look at natural gas is also in the long term, not a good solution.

Tammy Klein (33:08):

We're increasing the amount of renewables on the grid. And as you work with a clean sheet of paper saying, how do you introduce more wind and solar and other renewables to the grid? How do you do that? And it's funny how the eyes are looking over at transportation going, they've got a white piece of paper too. They're going all electric. So how do these two energy grid and transportation sectors work together? Clean sheet of paper, why don't we work together and try to get this right? And so there are a lot of opportunities to get this right. We're talking about the way maybe vehicles work with the grid to charge at times of day that are beneficial to the grid, not during peak hours like hot August afternoon, 4 to 7:00 PM, but maybe later at night when the wind is blowing in west Texas, and maybe the sun is shining in either Florida or in California, there are some real opportunities to work together.

Britta Gross (33:58):

And I think that the real excitement now is that the forces are finally aligning where we can all be more confident that we all see the direction. We know where now we have to get, the stakes are in the sand for 2030 and 2035. We now just have to do the hard work to get, to get to those points.

Tammy Klein (34:15):

Yeah. It's all about the win, win, win, win, win at the end of the day. Well, thank you so much for being on the show Britta. It was, it was such a great pleasure to talk with you, and thanks to you all for listening.

Britta Gross (34:31):

Thank you, Tammy. It was a real pleasure to be here. Thank you for having me.

Outro (34:38):

You've been listening to Fueling the Future of Transport. This show is hosted and edited by Tammy Klein produced by Carolyn Schnare and engineered by Alexander Nikolic. To hear more great episodes of this show, learn more, and sign up for a free biweekly newsletter, visit transportenergystrategies.com.