Transcript for Episode #82. What Is Most Exciting In the Transport Energy Space in 2022?
December 19, 2022

Introduction:
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:

Welcome to the final episode of 2022 and what an exciting year it has been for this show!

First of all, thank you all so much for listening and supporting Fueling the Future of Transport. I created this show originally in 2016 as another way of telling the evolving story of the fuels and vehicles industries and because of my amazing network, I've been fortunate to have so many guests covering so many topics ranging from petroleum to electricity to biofuels and so much more.

I love hearing your feedback and suggestions so please keep them coming.

In June of this year, I relaunched my podcast, as you know, adopting a new bi-weekly release cadence and started asking guests one important question at the end of every episode.

I asked them "what excites you most about this space?" and the one thing that excites me most about their answers is the inspiring smile I see on their faces when we're in the interview. It's something they're just not expecting.

I find that every guest has a passion for their craft, for sustainability, and for the future, for what they're doing to decarbonize fuels, vehicles and transport energies. The news on climate is depressing and the mountains we have to climb to reach net zero in energy really are daunting. But it's listening to these guests, many of whom are innovators in their respective fields, that makes me so optimistic about the future. It really does!

I wanted to take time in this episode to share some of those answers and to leave you with a positive outlook as we turn the page on a new calendar year.

But, before I dive in, I wanted to tell you what excites me most about this space…..

It is the combination of innovation, really, in all aspects of transport energies and the real breakthroughs that are being achieved in low-carbon fuels, electrification, hydrogen and other novel fuels. I've been working in the transport energy space for over 25 years, and just 10 years ago - actually really just like 5 years ago - most of what we are now considering as real solutions today were pipedreams back then. They were really laboratory, R&D projects, so it's exciting to see the progress.

OK, let's dig in…

I spoke with a number of policy experts who each made major impacts during their time either in government or working alongside it.

First, let's revisit with Neil Chatterjee. So Neil is the former Chairman of the U.S. Federal Energy Regulatory Commission. I loved Neil's comment about working together across belief systems and party lines. To me, what's so important about that is that's the truth. It's going to be the only way to get anything lasting done, especially in the U.S.

Neil Chatterjee:

You know, one of the cool things is that I was so fortunate to have a front-row seat to the energy transition during my time at FERC and it gave me the ability because of the convening authority at the agency and the ability to bring people together to meet with some of the smartest, most ambitious, courageous, innovative people out there. And I'm really excited to see the fundamental transformation that can occur because of innovation. I worked in the policy arena. I worked in the political arena, as we spoke at the beginning of this podcast we've struggled to really get energy policy done, to achieve carbon reductions and really transform the regulatory and landscape, but it hasn't mattered because the market has been working because innovative new technologies have been coming in and we're able to generate and consume electricity in cleaner, more efficient ways.

And it's super exciting to see that one of the things that I'm proudest of, or a couple of things that I'm proudest of during my tenure at FERC, is we work really hard on a couple of FERC policies, a couple of FERC orders that removed barriers to entry for new technologies for energy storage and for aggregated distributed energy resources here...think EVs, think rooftop, solar advanced appliances. And what we did was basically remove some of the barriers that existed within the power markets to enable these resources, to be able to be compensated for all of their attributes for capacity, for energy, for ancillary services. And I'm super excited to see what will emanate from those rulemakings, because I think what it will do is drive greater innovation. It will lead us to the breakthrough in long-duration storage. And with this aggregated distributed energy rule, like when you think about it, if you have one electric vehicle, your ability to impact a power market is nil but if through the power of aggregation, you can harness thousands and thousands and thousands of EVs suddenly you're competing against the power plant down the street, and you're doing it at the point of demand.

And what could be really exciting there is not only would this lead to decarbonization in the power sector, but this power sector reform could theoretically enable what we've been talking about, the accelerated deployment of EVs, which could lead to emissions reductions in the auto sector. And to me, that's like super exciting to think about. And it's what makes me so eager to be a part of this industry. I think it's an exciting time. The politics of it are frustrating to guys like me sometimes. Like, I personally think that this antiquated notion that if you're for fossil fuels, you're the political right. And if you're for clean energy, you're of the political left, is totally outdated.

I think conservatives and Republicans need to embrace the opportunities in the clean energy transition. And when we start to see some of these benefits...job creation, lower cost because of greater efficiencies, benefits to consumers, you know, to me I am very, very optimistic about what our energy future holds and really love working in this space.

Tammy Klein:

Second, Margo Oge. Margo is so inspiring to me, I've known Margo for over 25 years, most of my career, in fact, Margo is the Distinguished Fellow at the Climate Works Foundation among her many other positions right now. And, I thought her comments about EPA's authority enshrined in the Inflation Reduction Act was really prescient and I think that we will see the impacts of just this little change that was mostly overlooked as she points out by the media, I think we will really see the impacts moving forward of that over the next few years regardless of the political party that holds the Administration going forward in the upcoming elections.

Margo Oge:

As a former regulator, but really an environmental at heart that worries about the environment and the planet and public health for somebody that worked at EPA and some mornings I would say to myself, oh my God, somebody's paying me to do this job, President Bush - George W. Bush - which we had difficulties addressing climate change. I would just...I just felt, felt so honored to be able to do that. And I strongly believe in public service. I worry about the planet. I worry. I have three-year-old and five-year-old grandchildren, and I'm worrying about them. And I'm worrying about young people in the next generation. People are asking me 'where do we live Margo? Should we live in California and go somewhere else?' But climate change not going to impact our young families.

So seeing the investments by government and seeing the investments of the industry, I mean, to me, towards electrification or zero-emission technologies excites me. It excites me that there is a hope not to reduce completely the impacts of climate change across the planet, but there is a hope that can minimize the most severe impacts that the planet is already facing from climate change. And transportation is anywhere from 20 to 30% of greenhouse gas emissions, the fastest growing sector timing when it comes to greenhouse gas. So the opportunity to see government and private sector and the civil society groups working together to address the transportation sector and, and the energy sector as a whole gives me hope. And there are some days that I wake up, I have zero hope depending what the Supreme Court did on what I heard but these days I feel much more optimistic.

So that's what excites me. And the electric cars. Let me tell you for full disclosure, I drive a Tesla. I drove a Volt, as I told you, I'm driving a Tesla is a fantastic car...high acceleration. You know, I mean this drives like better. The torque is better than diesel and I drove the ICE before, and this is an extraordinary car. So when they become more affordable for, and for some today, the average cost of any electric car is $60,000. But the average cost of an internal combustion engine is close to $50,000.

You can find electric cars at $30,000 and $40,000. So I'm excited for to see more people getting the privilege of EVs and having fun driving electric cars. So all that excites me. So today you caught me in a very optimistic mood.

Tammy Klein:

The third person that really, really impacts me and continues to impact me is my friend and colleague, John Eichberger who is the Executive Director of the Fuels Institute. He's so sharp, so clear on the issues and one of the smartest people on transport energy I know, despite our clearly diverging taste in music as our interview together shows.

John Eichberger:

I think we've changed from affordable fuel, that type of stuff to, how do we reduce carbon? And I tell everybody, I don't care if you think climate change is real or not. It doesn't matter. The path is we're going to reduce carbon. There's too many pressures to say. We can avoid that. What I find most exciting is there's so much opportunity to be innovative and really push the envelope in the new technologies and new strategies and really find new solutions. But at the same time, that's my biggest concern. It seems that the politicians are driving the agenda in one direction and us leaving all these opportunities behind. And what I love about what the Fuels Institute does is we provide a venue and a forum to have conversations about these options. And we don't buy into any solution. We want to explore all these options. I mean, for example, I am still very interested in e-fuels, which is gasoline produced from electrolysis using renewable energy. My good friends in the national labs say, well, yeah, the final product's great. But it's like only 80...it's 84% efficient, John. And it's really expensive. Yeah. I get that. But today a lot of things have been really expensive in the past.

And if you can have a zero-carbon liquid fuel, that's drop-in ready, should we not want it?

And should we not invest to figure out how to make it economically viable and scalable? Maybe it's not only for aviation. Maybe it's only for different applications, but there's so...there are a lot of bright people. The panel you mentioned at the conference. I mean, I sometimes think I know some stuff, man. I felt like I'm a moron sitting up there with those guys. Those guys are brilliant. I don't know how many PhDs are represented up there. I guarantee you, I don't have one. So I was very undergunned. But the fact that we have people like that, people like yourself and the people you work with pushing them trying to figure this out is inspiring.

I want the politicians to see that. I want them to see that you've got some brilliant people trying to find sustainable solutions and sustainable, environmentally sustainable. That's one part of it. But enduring the last thing, things that can take us the next 50 years, they're putting their heart and soul in trying to figure this out, give them an opportunity. But to keep closing the doors to innovation and I think that's the worst thing government can do. And so I'm really excited about all those opportunities and at the same time trying to figure out how can I run a truck through these walls, keep getting built up so these smart people can bring us their solutions. I'm not going to come up with solutions, but if I go knock down these walls to give them the opportunity to do so, that's, what's really exciting to me.

Tammy Klein:

And lastly, Britta Gross who is the Director of Transportation at the Electric Power Research Institute. I loved her points about the alignment of the market and policy beginning to come together in the last year or so with the infrastructure legislation, the IIJA and now the IRA, the Inflation Reduction Act. I loved her positivity and I loved her outlook on the electrification space. And she should know. She worked at General Motors for many years and she has a background in the car industry and she’s done so much work in this space.

Britta Gross:

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 the 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 gases also in the long term, not a good solution.

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, 4-7:00 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.

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:

I also talked with people who work deep in the supply side of innovative technology.

I was so pleased to talk with Parker Meeks who is now the interim CEO for Hyzon Motors about hydrogen and what's happening in that space and their innovations in that space.

Parker Meeks:

So it's just thrilling to be at the forefront of the clean energy transition, particularly as a person that I grew up in carbon-heavy oil and gas, electric power chemicals being born and raised in Houston, Texas. It's an environment that you easily start in and this is. This is the future. Hyzon is situated to help drive that transition from a demand perspective with use-case solutions like trucks to start. They can really get this thing going and partner with some of the largest companies in the world who thankfully see the same thing. Large oil and gas companies, large equipment sellers, large power companies. All these companies see the transition, wanna participate in it and are open and looking to partner with companies like us to match supply with demand.

So it's just really exciting to basically help drive the early use cases like trucking, but to also have the opportunity over time to transition the demand for clean fuels into aircraft and into rail, into marine vessels, into power solutions. You know, these are all things that in Hyzons five to ten-year roadmap, our markets that we look forward to helping to decarbonize and to really to get to once the trucking application and use case is well underway. So I feel really, really, really fortunate. And our entire team Hyzon is really passion-led when you're a company that's building something in this way, you gotta be led by passion so we're all excited to do our part to help move fuel and move mobility forward.

Tammy Klein:

I loved talking with Kameale Terry who is the Co-Founder and CEO, ChargerHelp! A woman who, with her partner, has really built from the ground up this company. Starting from nothing and filling in this huge gap of repairing charging units. Very practical, very down to earth and she's created a company from nothing and is growing it and I have so much respect for that as a business owner myself.

Kameale Terry:

Design to me is just really cool. And then also technology, smart devices and not replacing people are getting like too crazy AI, but just really bringing the future forward, you know what I mean? I think that we have a cool opportunity to do that with electric vehicles that we may not have been able to do with gas-powered vehicles. If you think about flying cars or autonomous vehicles, I think we're opening up ourselves to new stuff and I think as a millennial I'm like, "Yes, show me more new things."

And then for the company, I'm excited about two things for the company. One is that I truly believe in Detroit. I'm in Detroit right now. And they had an RFP out recently to have an electric highway. So when a car drives on the highway, the car is charging and I was talking to the young ladies because we're looking at doing some workforce development. And the fascinating thing is you would need somebody that understands how to repair that highway, but they will also need to understand software because there's a huge software component. And so when we look at the jobs of the future, we can't have all our software engineers who make six figures go fix highways.

So then how do you bridge that gap? How do you find someone that's like totally fine with getting dirty, but also is understanding of software and how can technology helps to bridge that gap? And that's what we're really doing at ChargerHelp! We're saying, Hey, we can take field service workers and they can work on smart assets with the help of this platform. And this allows for there to be more people entering into the workspace faster. You're not going to school

for three, five years. Have to have like good natural skill sets of like showing up on time, being a good employee <laugh>, but follow directions using a phone. And so that part is really cool to me. So those are the two things that I'm really excited about for ChargerHelp! is just this opportunity to further show that there is space for more people here to add value. And we could do that through technology and we could do it in such a way where it's not replacing people, but it's enhancing the experience and making folks better at their jobs.

Tammy Klein:

And then lastly, Mikala Grubb who is the Director for Clean Fuels Technology at Topsoe - I loved her perspectives on the future of cleaner fuels, on expanding the universe of feedstocks out there. There is really no one, no firm out there who is on the cutting edge of low-carbon, no-carbon, net-negativity on fuels than Topsoe with their whole suite of different types of technologies out there.

Mikala Grubb:

What excites me is that this actually makes an impact. This is actually doing exactly what Haldor Topsoe wanted us to do. That is to improve the lives of others and the society around us. It makes a difference. And it also means that when my kids look at me, when I'm going away on business travel and looking at me and saying, mom, you know that it's not very sustainable to fly <laugh> I can tell them, well, I'm working on it, I'm working on it and it's getting better. So that actually excites me that I think we will, hopefully in a timely manner, leave a better future for our children.

This week, my son's class has a theme week about garbage and pollution. So, and he's nine <laugh>. So we're educating these citizens that are actually conscious about waste and sustainability. So, that really excites me. And it also excites me to be part of this is a once in a lifetime opportunity, we are experiencing the energy transition. It's not every generation that gets to experience this and to just be a little tiny piece in that puzzle to help it move the right way that excites me so much.

Tammy Klein:

And then I'd like to end with my conversation with Dan Sperling, who arguably is a founding father of not only the Low Carbon Fuel Standard in California, but of electrification and integration of these Three Revolutions that he talked about: electrification and sharing and connectivity. Dan really hit it home with his take on a culmination of a lifetime of work which he's going to talk about in this snippet.

Dan Sperling:

You know, I've been doing this for 40 years and this is the most exciting time in that whole period. I tell my grad students they're so fortunate that they're coming into it just at the right time, because there's a recognition that change is needed in the car-centric model that we've developed. I talk about the marginalization of people, environmental justice, social justice, people starting to appreciate how important that is to deal with it. And then there's the big kahuna of climate and then you have on top of that, all of this innovation and new technology coming along… that's The Three Revolutions. That's what motivated me to write that book. And so this is the time. This is it. And now for me personally, I'm having more impact than I ever did, just because my first 20 years, no one really even cared about what I was doing, working the fuels. And, you know you were talking about your former boss, Fred Potter and we were kind of whistling in the wilderness for those many many years.

Tammy Klein:

That's right. He was a big proponent of cleaner fuels, as was I. I think he'd be stunned at what was happening now.

Dan Sperling:

Yeah. And, now it's...so this is the time. There's a guy that works with me. He's 91 years old. He's worked on electric vehicles and batteries his whole life. He says the same thing.

Tammy Klein:

Oh my gosh!

Dan Sperling:

'This is the best time ever,' he says, 'I can't retire.' He's still writing papers and mentoring students that this is it right now.

Tammy Klein:

Turning toward 2023, I have several exciting guests lined up and I look forward to sharing each of their enlightening answers to this burning question.

Listeners, I leave you with homework of thinking about what excites YOU most about this space. And, let's not stop there, I invite you to share that with me.

Feel free to email me at Tammy@transportenergystrategies.com with either your written inspiration or better yet, record a voice memo and send me the audio file and maybe you'll hear yourself on an upcoming episode!
That would be so much fun, I'd love to do that.

Thank you for listening to Fueling the Future of Transport and if you haven't already, tell your friends and colleagues about this show and please rate it in your podcast app that helps others discover it.

Outro:
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 Aleksander Nikolic. To hear more great episodes of this show, learn more and sign up for a free biweekly newsletter, visit transportenergystrategies.com.