

# Freight and Logistics Roundtable

Transportation Advisory Panel – April 30, 2:00PM to 4:00 PM

## Roundtable Participants

- Mike Rush, Senior Vice President Safety and Operations from the Association of American Railroads
- Mike Roeth, Executive Director, from the North American Council for Freight Efficiency
- Glen Kedzie, Vice President Energy and Environmental Affairs Counsel from the American Trucking Associations
- Matt Menner, Senior Vice President, Sales, Transportation Management from Transplace
- Victor Bonett, Senior Manager, Public Policy from Amazon

## Transportation Advisory Panel Members In Attendance

- **Chair**, Marie Therese Dominguez, Commissioner, New York State Department of Transportation
- Albert Gore, III, Policy and Business Development, Tesla
- Bob Zerrillo, Policy Director, New York Public Transit Association
- Elgie Holstein, Senior Director for Strategic Planning, Environmental Defense Fund
- Jared Snyder, Deputy Commissioner, New York State Department of Environmental Conservation
- Julie Tighe, President, New York League of Conservation Voters
- Kendra Hems, President, Trucking Association of New York
- Kerene Tayloe, Director of Federal Legislative Affairs, WE ACT for Environmental Justice
- Paul Allen, Senior Vice President, M. J. Bradley & Associates
- Porie Saikia-Eapen, Director, Environmental Sustainability and Compliance, Metropolitan Transportation Authority
- Steve Finch, Senior Vice President, Automotive Services, AAA Western & Central New York

## Transportation Advisory Panel Members Not In Attendance

- Craig Turner, Executive Director, Buffalo Niagara International Trade Gateway Organization
- Dimitris Assanis, Assistant Professor, Stony Brook University
- John Samuelson, International President, Transport Workers Union
- Nancy Young, Vice President, Environmental Affairs, Airlines for America
- Nick Sifuentes, formerly, Executive Director, Tri-State Transportation Campaign
- Renae Reynolds, formerly, Transportation Planner, New York City Environmental Justice Alliance

## Others In Attendance

- Professor Burak Kazaz, Professor of Supply Chain Management of Syracuse University's Whitman School of Management (Roundtable Moderator)

## Meeting Notes

### Introduction

- Commissioner Dominguez welcomed everyone and provided an overview of the roundtable, including some background on the Climate Leadership and Community Protection Act (CLCPA) and the Transportation Advisory Panel's place in the process.

- Commissioner Dominguez noted that New York’s extensive freight transportation system moves nearly 2 billion tons of freight valued at more than 2 trillion dollars annually. By 2040, it is estimated that freight movement is going to expand 50% by weight and 75% by value. While this volume demonstrates the importance of the freight network, nearly 85% is of this tonnage is moved by truck. As the state moves forward with recommendations, the freight and logistic communities must play an important role in decarbonization.
- Commissioner Dominguez next introduced the moderator, Dr. Burak Kazaz, who initiates the roundtable discussion.

### Roundtable Discussion

- Dr. Kazaz welcomes the panelists and asks them to introduce themselves:
  - Mike Rush is the Senior VP for Safety and Operations from the Association of American Railroads. He oversees the rail industry’s interchange standards, homeland security plan and environmental protection and safety program He has been involved in environmental and air quality issues on behalf of the industry for several decades.
  - Mike Roeth is the Executive Director for the North American Council for Freight Efficiency. He has been working with the Rocky Mountain Institute on both reducing carbon emissions and cost of operating trucks in North America. His specialty is brokering green truck collaborative technologies into the real world at scale. He has a background in engineering and operations.
  - Glen Kedzie is the Vice President for Energy and Environmental Affairs Counsel for the American Trucking Associations. He works on national and state issues related to emissions, alternative fuels, and sustainability. He previously worked for the U.S. EPA as an enforcement attorney and a transportation planner in Oklahoma.
  - Matt Menner is the Senior Vice President of Sales at Transplace, a third-party logistics and technology solutions provider that manages freight networks across North America. He has been involved in the industry since 1990.
  - Victor Bonett is a Senior Manager for Public Policy at Amazon. He leads their last mile public policy team and though he is new in this role, he has been with Amazon for about 6 years. He previously worked in the Washington, D.C. government with the D.C. Council and Attorney General. He is an attorney by education.
- Dr. Kazaz: What do you view as desirable economic support for decarbonization of the line of business you represent?
  - Mike Rush: When thinking about and talking about zero emissions locomotives, it’s important to look at locomotive fleets as a large group. From that perspective, we need to have industry wide solution to get to zero-emissions. In the past, there was less interest in looking at zero emissions locomotives because they are small potatoes in terms of emissions so there was less interest in directing money towards this industry. Now, however, there is more of an opportunity to look at all modes of transportation. He emphasized that locomotives are different than trucks. Even though the kinds of technologies needed may be similar, it is a quantum difference in terms of horsepower needed. There is a need to engage in some fundamental research. The good news is that his members are interested in this and they have several projects under way, including California Air Resources Board funding a demonstration project, Progress Rail developing a battery powered switch locomotive, and Canadian Pacific investing in hydrogen technology. There is interest in developing a zero-emission locomotive, but it will be an effort to get there. Another observation he shared is that the U.S. only has

two locomotive builders. It is a constrained market because the railroads are not buying locomotives, but it creates an opportunity to envision a future where we transition away from diesel. Added that he would like to see a public-private partnership to help them conduct this research and that it's important to ensure everyone goes down a similar path.

- Mike Roeth: They don't have a policy position, but they are seeing a pathway they expect to occur. Medium- and heavy-duty vehicles are considered a single market when it's actually quite diverse. When they look at electrification and other technologies, it comes down to a few key categories, including small urban vehicles, vocational trucks, and medium/heavy-duty tractors on the road. What we are expecting is smaller trucks being battery powered and the larger vehicles that need more range being diesel hybrid or hydrogen hybrid. However, it's unclear how far battery electric will go. If it turns out we have 15 to 30-minute charging of these trucks that enables them to go hundreds of miles, then these other solutions may not be needed. Added that incentives are important in the early days.
  - Glen Kedzie: Agreed with both Mike Rush and Mike Roeth's input. Regarding Mike Rush's point, he feels his pain regarding research and development dollars. They felt like all money in trucking was going towards light duty so can only imagine how the rail industry feels. He added that there is no such thing as identical trucking fleets and that every fleet is unique. Certain characteristics of a fleet can vary widely. They differ in where they operate (e.g., locally, regionally, across state borders), the types of terrain or temperatures they encounter, as well as driver habits. He added that while his focus is on incentives at the federal level, they do look for money at the state levels. They are working with DOE labs and trying to make sure they have proper funding to answer questions that still need answers. We don't want to head down a certain road that may have unintended consequences. Emphasized that you cannot separate infrastructure from the vehicle itself - you need both and that takes money. Additionally, he noted you cannot rely on the trucking sector to come up with all the funding for capital outlays.
  - Victor Bonett: In terms of the state policies you mentioned, generally they're in support of policies that increase availability and adoption of fleet trucks and accelerate interconnection to grid. Amazon supports policy efforts for sustainable aviation fuel. Over the next decade, they plan to deploy 100,000 electric delivery vans. They support the recent passage of low carbon fuel standards that will increase use of low carbon transportation fuels. Urged/advocated for federal investment in R&D for new technologies. For a company like Amazon, they are looking at this holistically across all business. Co-founded the climate pledge to be net zero carbon by 2040, which is ten years ahead of the Paris Agreement. Additionally, they are using robotic delivery to take vans off the street. In NYC, they've been doing deliveries with cargo electric bikes. In Manhattan, most Whole Food deliveries are done through these bikes and they plan to expand this to package delivery.
  - Matt Menner: Given their business model, he wouldn't have meaningful position or comment to add.
- Dr. Kazaz: Are there efforts underway by your industry to redesign or re-think packaging and materials to help reduce emissions during freight transport?
    - Victor Bonett: For Amazon, right-size packaging is an important part of e-commerce logistics. They use machine learning algorithms to reduce unnecessary packaging weight while providing protection to products. Smaller, lighter packages means they can pack

more orders in fewer trips with less fuel. One of the things they've established is a Shipment Zero initiative, which is a vision of the process to deliver a customer shipment being net zero carbon, including the fulfillment center, packaging, and transportation mode. Related to packaging, they also have a Certified Frustration-Free Packaging program. It certifies the packaging is recyclable and comes without excess packaging materials. Products are sent in their own packaging without additional Amazon packaging. He noted that in India, they've designed a new way to deliver orders packaging free where orders are delivered in their original packaging and are shipped in reusable crates. They've also implemented Amazon Day, a program where Prime members select two preferred days for items to be delivered.

- Matt Menner: Many customers are ultimately looking at packaging strategy to manage expenses and impacts while also keeping product safe. Packaging comes into consideration as they look to minimize route miles traveled by freight. There are always trade-offs. He would argue that Amazon is taking leaps and bounds and they are following suit with their customers leading the charge.
- Mike Rush: The railroad perspective is slightly different. Railroads don't own the cars; they are owned by shippers. They don't control packaging, but they do impose limits on the weight of those cars. There is a constant drive from the shipper perspective to have lighter weight vehicles to fit in more commodity in that car. Railroads do pay attention to how they load containers which contain consumer goods.
- Mike Roeth: Size and weight matters. Starting to see more innovation in efficiency. There are weight and length opportunities that come from fleets and shippers becoming more efficient and getting more on these trucks.
- Glen Kedzie: Mike is correct. The problem is the industry is so diverse is that some folks might not want more weight. One thing they are working with related to zero emissions vehicles is the 2,000 lb. weight exception. They got it for natural gas vehicles and electric battery vehicles, but not for hydrogen fuel cells. There is a lot of activity to give advantage to trucks that haul more weight than their competing diesel vehicles but to offset the additional cost of that cleaner technology. There is some language that he has seen that is up to 5,000 lbs. Need to identify barriers and try to knock down one by one and weight is definitely one of those issues. Through the Senate Bill 508, they are looking at having group convened of different industry folks from the trucking sector to look at ways to reduce emissions and improve efficiency and containers might come up in some of those discussions. It makes economic sense for any fleet and any shipper to work together to get as many pallets as they can within the weight limits on a truck that could be transported.
- Dr. Kazaz: What barriers do we have to institute for more off-peak deliveries to make use of some of the least busy periods for transportation infrastructure? What can we do to institute more of these off-peak delivery capabilities?
  - Mike Roeth: As we move to zero emissions vehicles, there will be some operational changes the fleets may need to make. One of these changes is charging time. The time to charge in early years of transition to electric trucks will be longer. Should look for opportunities in fleet operations or even in policy. For example, if the hours of service rules for a trucker would allow for a break in the middle of the day to spend a couple of hours charging the truck so you could do half day, charge the truck, then do another half day route, things like this can help the transition quicker. Back to the question on deliveries, maybe this could help with electrification of trucking, as we could charge in off-hours and do deliveries in off-peak hours. Electric trucks or hydrogen trucks will

come with change in operations. However, if we can help make this transition easier, we can all benefit. Maybe stores can open up delivery windows.

- Glen Kedzie: Building on what Mike said, you can only travel a certain period of time in a truck. Interstates are commercialized by travel centers for diesel fuel. If you need to pull over, the best time to charge would be when you're sleeping. Travel centers don't necessarily want charging stations at rest areas, but a driver wouldn't want to sleep for a period and then have to charge separately, as that creates lost time. Travel centers don't want to fall under being regulated as utility and this will be a big discussion item. They're providing electricity and selling at a certain rate. There are a lot of operational issues as Mike alluded to. Everyone will have to be trained on how to put electricity or alternate fuel in their truck. He has also heard that you can't take an electric truck to places that provide traditional fossil fuels to pick up the fuel because of spark concerns. These are unintended consequences that we continue to learn about that will require certain carve outs. Need to be able to understand these small impacts as well as the big picture.
- Dr. Kazaz: You touch on an important point about location of electric charging stations and fuel stations. Educating smaller trucking companies will be quite important. Asked Victor to comment on this.
- Victor Bonett: In terms of the off-peak deliveries, he can speak to the last mile. A lot of it is driven by customer demand and customer choice. He mentioned the Amazon Day initiative. Some of the things that can help are the autonomous technologies (e.g., the robotic delivery). Another autonomous technology is Prime Air which is their drone program. It's a system designed to get customers packages in 30 minutes or less using unmanned aerial vehicles. These are being tested in several international locations and just received FAA approval recently.
- Matt Menner: There is always room for improvements, but many large retailers, manufacturers and shippers have spent a lot of time trying to maximize efficiency. and consumer package goods. A lot of thinking has gone into how to expand hours of delivery and how to make it as efficient as possible for the driver to help give them maximum utilization and maximum compensation for their work. At the end of the day, there will continue to be opportunities, but a significant amount of work has already gone into some of this. Wanted to touch on EVs and a point many will remember is that you can't use an EV to load a petroleum tank. He asked if other members of the panel thought that there was a similarity in terms of an adoption curve for compressed natural gas (CNG) and liquefied natural gas (LNG) juxtaposed to electric at this point as you look at your constituency and the sectors you represent? What does adoption look like for Class 8 electric vehicles at this point compared directly to CNG and LNG?
- Mike Roeth: The Class 8 tractor fleets that are looking at adopting electric also did the early adoption of CNG. Similar in that that it needs an infrastructure. He does think it's the same ones that are thinking about this. With CNG, the industry has done an excellent job of packaging tanks to get five to six hundred miles of range. Companies that want to go electric but couldn't get the range in the early years and are exploiting in the middle mile CNG with renewable natural gas with low carbon fuel standards. They are seeing a move, albeit not ZEVs, to CNG away from diesel in some places.
- Mike Rush: If you talk about hydrogen you're probably talking about a fuel tender. In the past few years, they just developed fuel tender specification for LNG which has only been used in limited circumstances for locomotives. A similar concept would apply for

hydrogen and they are considering whether they need to explore a fuel tender standard for hydrogen if there was a battery charging infrastructure.

- Dr. Kazaz: Asked panelists to provide perspectives as to what we should anticipate and how to deal with some issues related to driver shortage which they have been seeing for a while and what that will mean in the transition to a decarbonized transportation industry with drivers and technicians? What do you anticipate in terms of labor and workforce development?
  - Glen Kedzie: before even knowing what ZEVs were, they were facing a workforce shortage with drivers and technicians. That was using time-tested knowledge and now they're shifting to a technology that basically requires a computer degree. We have an aging workforce and the career doesn't appeal to the younger generation. Autonomous vehicles are one solution if you aren't increasing drivers. They have lots of campaigns that are underway to attract new drivers. Trying to get more women into the industry. They have a group (women in Trucking) where they're trying to advance the role of women in all aspects of trucking. No simple answer. Trying to recruit, but it's a difficult industry to recruit for.
  - Mike Roeth: ZEV trucks are cool, they're fun to work on. On the engineering side, he's seen a lot more women in engineering organizations and a lot more people wanting to work on trucks and buses as they move toward hydrogen, electric, automation and a lot of investment in these technologies. They're seeing a change in what you might call white collar. As we move forward, there's an opportunity to recruit more with the excitement of this new technology.
  - Mike Rush: The railroad industry doesn't have the workforce shortages the trucking industry has. Their crews are among the highest paid blue-collar workers. If you look at the move towards more automation, you're looking at a different kind of workforce. Autonomy would not be in the immediate future for railroads, but if you are looking at from that perspective, the workforce would probably just be making sure to reduce what is called variability events, events that cause the train to stop. Will make some observations – they have changed their operating paradigm in the past few years – running longer trains for reduced fuel consumption. It's a good news story from a carbon perspective. Finally, doesn't see autonomous trains happening tomorrow, but there is a place in Australia where they do have an autonomous train. While he says it's far in the future, there is a glimpse of the future there. They're already going down the automated path, but a long way to go. A lot more technology/sensors to get there. In terms of conductor/engineer, they would still be needed for issues that might arise.
  - Victor Bonett: One thing they have as a large company is a program called career choice where Amazon will pay up to 95% of tuition and fees towards a degree or certificate in certain fields of study, regardless of whether it relates to job at Amazon. These vary depending on location of fulfillment center. They have other programs with the company to upskill workers and are working closely with veterans.
  - Matt Menner: We continue to see the challenge for professional trucker drivers. We feel we're in the midst of an unprecedented market that will continue to persist. Covid-19 has created unique challenges. Think they're moving back towards some level of normalcy, but this is not a new challenge. It's an important job, but a difficult job. A combination of the job itself, the pay scale, etc. is a real problem

without a single answer. Some of the technology comments will factor into increasing the attractiveness of the job. The challenges from here forward only become more significant.

- Porie Saikia-Eapen: thanked the panelists for a great presentation.
  
- Dr. Kazaz: If we want to help New York State, where do we put our hands in terms of next set of supply chain logistics solutions that are important for the State? Where can the state provide the best benefit for your transition towards the goal of decarbonizing freight and logistics?
  - Mike Rush: From his industry's perspective, we need a national effort to look at decarbonization. It's an interstate industry by nature. They have a couple of demonstration projects that are important in terms of progressing the technology, but also need to look at adopting the technology. Need support for getting that interest at the national level. Will take a public private partnership to get there, at least for his industry. Locomotive manufacturer market is very small, as there are only two in the country and there are concerns it could go to one. It's an odd marketplace and if they want to drive to zero emissions, they're going to need a game changer. It will take more than the resources their locomotive manufacturers have – will take a national effort.
  - Glen Kedzie: His view has been that this isn't about flipping a switch. Our industry, the trucking sector, is very cautious. These are businesses in the business of making money. Not a one size fits all model. A plan needs to include a lot of on/off switches, assessments, and time outs to ensure we're approaching the problem in a way that comes up with solutions. Is the infrastructure keeping up with vehicles sale? Are they being located appropriately? Are there unintended economic impacts? Emphasized that companies are cautious and there is a need to look holistically. It's not that they aren't for decarbonization, but the industry is for a cautious decarbonization effort. We won't have a lot of opportunities to get it right so let's try to get it right the first time.
  - Mike Roeth: A quicker transition will help us if it's manageable. The faster we get on with this, it will be easier. For these early adopting fleets, the first ones – we need to learn fast from them and need to have more of them. Incentivizing these first deployments and learning fast from them will be a good investment for states.
  - Victor Bonett: More funding for research for different technologies. Anything that increases access or lowers cost to systems that can deliver low carbon fuels at scale. Today that includes renewable energy electricity and renewable natural gas. In the future, this could mean hydrogen. They have a goal of launching 10,000 electric delivery vans next year and 100,000 electric delivery vans by 2030. They are on a path to operate all operations with renewable energy by 2025. Accessing affordable renewable energy as a customer has not been easy so they support policies that supports market access for all customers. They have had to directly invest in over 200 renewable projects projects globally to ensure they're powered by renewables. Today, that makes them the largest buyer of renewable energy in the world. On top

of that, we need a robust energy grid that ensures increasing flows of renewable electricity are delivered reliably to fleets.

- Matt Menner: For further adoption of alternative energy vehicles for fleets, continued government support will be necessary. Need government support and federal funding to provide an attractive set of incentives for investing in new set of technologies.
  
- Commissioner Dominguez: Thanked the panelists and the moderator. The content was very rich and gave a lot of food for thought. Asked Transportation Advisory panelists one more time if there were any questions.
  - Julie Tighe: Echoed point that this has been helpful
  - Commissioner Dominguez: acknowledged and thanked the Transportation Advisory Panel members for participating and closed the meeting.