

Transportation Advisory Panel

Market-Based Measures & Financing Roundtable

January 13, 2021 | 12:30-2:00pm

Roundtable Participants

- Ben Rogers, Venture Partner, Braemar Energy Ventures
- Bruce Ho, Senior Advocate – Climate & Clean Energy Program, Natural Resources Defense Council
- Dallas Burtraw, Darius Gaskins Senior Fellow, Resources for the Future
- David Rinder, Vice President, Ares Infrastructure and Power
- Manuel Pastor, Director, University of Southern California Program for Environmental and Regional Equity (PERE)
- Margarita Parra, International Program Director, Clean Energy Works
- Michael Linse, Founder and Managing Director, Linse Capital and Levitate Capital
- Patricia Hendren, Executive Director, Eastern Transportation Coalition
- Rajinder Sahota, Division Chief of Climate and Energy Programs, California Air Resources Board

Panel Members In Attendance

- **Chair**, Marie Therese Dominguez, Commissioner, New York State Department of Transportation
- **Roundtable Moderator**, Paul Allen, Senior Vice President, M. J. Bradley & Associates
- Jared Snyder, Deputy Commissioner, New York State Department of Environmental Conservation
- Albert Gore, III, Policy and Business Development, Tesla
- Kendra Hems, President, Trucking Association of New York
- Elgie Holstein, Senior Director for Strategic Planning, Environmental Defense Fund
- Renae Reynolds, Transportation Planner, New York City Environmental Justice Alliance
- Porie Saikia-Eapen, Director, Environmental Sustainability and Compliance, Metropolitan Transportation Authority
- Nick Sifuentes, Executive Director, Tri-State Transportation Campaign
- Kerene Tayloe, Director of Federal Legislative Affairs, WE ACT for Environmental Justice
- Julie Tighe, President, New York League of Conservation Voters
- Nancy Young, Vice President, Environmental Affairs, Airlines for America
- Bob Zerrillo, Policy Director, New York Public Transit Association

Panel Members Not In Attendance

- Dimitris Assanis, Assistant Professor, Stony Brook University
- Steve Finch, Senior Vice President, Automotive Services, AAA Western & Central New York
- Craig Turner, Executive Director, Buffalo Niagara International Trade Gateway Organization
- John Samuelsen, International President, Transport Workers Union

Meeting Notes

Introduction

- Marie Therese Dominguez welcomed participants and introduced agenda, discussing meeting procedures and roll call
- Paul Allen (moderator) introduced the topic of discussion and the speakers

Rajinder Sahota – Division Chief, Climate and Energy Programs, California Air Resources Board. Architect of transportation program/scoping plan in CA. Rajinder spoke on California's market-based environmental policies, focusing on cap-and-trade and low-carbon fuel standard (LCFS).

- The first California Climate Change Scoping Plan, called for incentives, regulations, and carbon price. Carbon price comes as a cap-and-trade program
- Two programs to discuss: cap-and-trade and LCFS
- Cap-and-trade is the most similar program in California to the Transportation and Climate Initiative (TCI) of the Northeast and Mid-Atlantic States took four years to design with 7 rounds of regulatory amendments. Informed by legislation and regulatory experience. Programs are not a set-it-and-forget-it approach: they need constant adjustments.
 - Covers electricity, stationary, transportation emissions across California (CA)
 - Fossil fuel industry has made two large attempts to derail the program
- Raised \$14 billion from auctions with legislative mandates for budgeting each year. 15% of the \$14 billion is invested back into environmental justice (EJ) communities.
- Controversy raised that cap-and-trade was not reducing emissions
 - No definitive link between implementing cap-and-trade and adverse impacts on greenhouse gas (GHG) emissions (coincided with economic recovery from Great Recession + shutdown of nuclear plant leading to increase in generation emissions)
- We know that communities must be addressed from EJ perspective. Cap-and-trade provides funding to improve air quality in those communities
 - Greatest health risk to these communities is truck transport and cargo activities especially at ports from exhaust. Took action to address diesel exhaust.
- When legislature enacted the LCFS for fleet emissions in 2017, auction revenue from cap-and-trade program was used to fund
- LCFS program – money flows from fossil fuel suppliers to low carbon fuel suppliers. Reductions in local air pollution requires both clean fuels and technologies. Pairing of LCFS and cap-and-trade together helps realize benefits
- LCFS increased biodiesel by 60 million gallons in 2018 relative to previous year
- LCFS incentivizing refiners to switch towards low carbon fuels, helps retain jobs in state
- Kicking off scoping plan process to chart path to carbon neutrality by 2050, process over the course of 2021

Manuel Pastor – Professor of Sociology and American Studies & Ethnicity at University of Southern California (USC). Economic and environmental research on environmental justice communities.

Supported development of CalEnviroScreen for EJ. Professor Pastor spoke on the environmental justice implications of market-based policies, through his research in California.

- Facilities in California that came under cap-and-trade – high disparity in larger number of these facilities in EJ communities, as well as GHGs and co-pollutant emissions. Disparity steeper by race than by income.
- Manuel published an academic article examining first few years of compliance
 - Pollutants went up in part from economic impacts. A lot of initial reductions from cap-and-trade came from reducing imported coal generation. In-state generation went up, leading to increased localized emissions.
 - cap-and-trade came to bear, facilities that tried to pay their way out of reduction were ones that would be most expensive to fix
- How best to examine what happened under cap-and-trade vs. the absence of cap-and-trade? If you regulated a sector more than another sector, you would get some changes in the regulated sector—but what is happening in the regulated sector? Estimated cap-and-trade impacts by comparing regulated facilities with facilities that needed to report emissions but did not fall under regulated facilities.
 - Communities with biggest polluters would expect to see biggest reductions – but has not panned out
- There are a couple of issues in the paper to consider:
 - Need to relocate down to separate emission sites to trace source of pollution
 - Anyone who's been involved in EJ research for the last 20 years has given up looking at zipcodes since they're not as good of a measure as census tracts
- Conclusions:
 - Hitting cap-and-trade targets by reducing imported electricity and increasing generation is increasing localized air pollutants while reducing GHG
 - Disparities in emissions/pollutants becoming starker under cap-and-trade
- Not an opponent of carbon pricing, but safeguards should be put in place to protect EJ communities. Strategic growth initiative development using cap-and-trade dollars has been important to mitigating some impacts. Other mechanisms could be used to ensure no increases in overburdened communities

Dallas Burtraw – Senior Fellow at Resources for the Future. Tradeable performance standards in transportation. Dallas spoke on the impacts of performance standards, such as LCFS.

- Both of the previous speakers have made points that one of the hot spots for environmental exposure have been ports and transport hubs with a lot of diesel machinery and trucks
- Standards have elements that allow for increasing flexibility, which has resulted in greater progress, driving substitution and innovation in transportation sector
- Ethanol: controversy about carbon intensity. Carbon intensity of ethanol has dropped by over 30% in recent years due to upstream improvements.
- In LCFS standard, effectively a carbon tax of \$200/ton on CO₂. Revenue stays within sector. cap-and-trade program contributes \$0.20/gallon of gas, LCFS as well. Provides production incentive for cleaner fuels.

- While tradeable performance standards are motivated by other criteria (e.g. air quality), we want to understand what the implicit carbon price is. Tried to make a first order estimate:
 - Vehicle standards is approx. \$63/ton (LCFS is \$200/ton, zero emission vehicle (ZEV) program from \$80-300/ton, renewable fuels program \$74/ton)
 - Different but substantial
 - Focused intensely onto a specific outcome to drive innovation within the sector. Make possible future emissions reductions at lower cost

Bruce Ho – Senior Advocate, Climate & Clean Energy Program at Natural Resources Defense Council. Bruce was asked to discuss TCI.

- Transportation is the biggest source of carbon pollution in NY – need all-hands on deck approach to address it. Supports both regulatory standards and market-based programs
- Need significant new sources of funding. Valuable place for market-based program like TCI or Clean Fuel Standard
- TCI will raise hundreds of millions of dollars each year
- Under a TCI program, it is critical to uphold equity considerations. TCI must be implemented as equitably as possible. TCI alone won't solve all of the problems related to equity or climate change.
 - Need to look at other programs like increasing regulatory standards (e.g. truck rules) and community air quality monitoring

Trish Hendren – Executive Director, Eastern Transportation Coalition (formerly I-95 Corridor Coalition). 190 transportation agencies working together (Maine to Florida). Trish spoke on the implications of a declining fuel tax base on transportation infrastructure planning, as more electric vehicles are deployed.

- As fleet is getting more efficient, it is undermining funding source from fuel tax that states are dependent on for maintaining infrastructure
- How can we take need for funding for transportation systems and also meet policy objectives?
 - Looking at market-based approach – distanced-based fee (road user charge or mileage-based usage fee)
 - Public transit system relates on tax system as well

Ben Rogers – Senior Advisor to Duke Energy, created a company called E Trans focused on transportation electrification within Duke. Ben spoke on the role of utilities in financing vehicle electrification.

- A lot of positives and negatives looking at a utility. Utilities spend more capex on infrastructure than any other industry
 - Duke Energy spends \$58 billion on capex over 5 years.
 - A lot of capital spent on delivering electrons in a safe, reliable, affordable way – extension of the grid
- Positives: low cost of capital, high balance sheets. Can manage a lot of vendors for infrastructure projects
- Negatives: a lack of innovation
- Need to devote a lot of time to the cost of the battery

- Total cost of ownership is very positive for consumer. Battery costs need to continue coming down significantly over the years so that customers are driven to electrify transportation
- Utilities play in a capital-intensive space and know how to deploy capital. At the end of the day: how do you deliver electrons in a safe and reliable way to customers?

Margarita Parra – International Program Director, Clean Energy Works. Margarita spoke on opportunities to finance electric buses, with an emphasis on pay-as-you-save.

- Electric buses – substantial value to communities and should be a consideration for utility investment.
- Pay-as-you-save programs are a way to make electric school buses affordable for school districts, while leverage utilities’ access to capital.

David Rinder – Ares Management, investor infrastructure & power group (debt and equity into climate assets). David spoke on the challenges private investors face when investing in emerging markets, such as electric vehicle supply equipment.

- When we look at the EV charging sector, utilization risk is high for financing
- Utilization guarantees from state government would be more helpful than upfront subsidies for encouraging investment
- There is not enough data on EV charging utilization. Having data available will make investors more comfortable in deploying capital

Michael Linse – Founder and Managing Director of Levitate Capital, investor focused on technology providers (growth capital). Michael spoke on how investors consider regulatory risk in their investment decisions.

- Been investing in segments that have what investors call “regulatory risk.” Need to understand regulatory direction when investing and be comfortable bearing that risk
- Most important thing when investing in the sector is that it can have a self-sustaining market over time. What is the cost curve of the technology? 5-10 years to achieve a self-sustaining market is the limit investors use to identify an attractive investment opportunity
- Multiplier for government funding. If a government funding source is \$100M until it runs out, that’s less attractive than if the funding is diversified (utility, municipal, private sector, investors).
- Are we going to have an environment where there’s a balkanization of the regulatory environment? Will there be a few environments or thousands? The more balkanized it is, the harder it will be to drive market scale

Q&A:

- Jared: How can we best use financing strategies to address clean transportation in areas with the greatest disparities?
 - David: We talked about cap-and-trade, LCFS – funded by consumers from an increase in retail fuel prices. Ensure that those proceeds are invested back into those communities. In order to incentivize private capital to invest in the chargers, establish more robust

utilization guarantees or even more robust upfront incentives in disadvantaged communities. That will drive more investment. Also, credit enhancement from green banks for commercial customers for electrification.

- Ben: If we close the upfront cost gap through public-private-partnerships, then the market can take off. Fleet managers know the fuel and maintenance cost savings of EVs, so they will choose EVs if upfront cost gap is filled. Ultimately, we need to get to a place where we don't need to rely on public funding. COVID has decimated public budgets. Need market position where we don't have to rely on taxpayers for costs.
- Elgie Holstein: What is the type of financial structure that could be created that would capture that value?
 - Paul: If you have fleets that are massively electrified demand response in a wholesale market become much more economical. Retail energy suppliers become more interested in the proposition.
- Paul: How do we go about maintaining the roadway infrastructure as we make this transition?
- Renae Reynolds: Comments that have been presented through advocates is that cap-and-trade has not addressed disparities that exist in the exposures that EJ communities face.
 - Manuel: Work on tinkering with a market system.