

UTILITY 2.0

2020 ISSUE IV



Transportation Electrification – will it benefit communities that need it the most?

With Public Transport agencies on the brink of bankruptcies and most low-income communities struggling to put food on the table, electrification of transportation needs reimagining, the right focus, and a private sector which can walk the talk of helping disadvantaged communities.

TRANSPORTATION ELECTRIFICATION IS AN ENVIRONMENTAL JUSTICE OPPORTUNITY – HOWEVER SUCCESS DEPENDS ON WILLING STAKEHOLDERS PUTTING SKIN IN THE GAME

2020 will be remembered not only for not achieving many corporate and personal goals but for how nature gave us a warning to change and protect communities and the environment, otherwise, it will balance itself by shutdowns, deaths, and disruptions.

Even before COVID-19 struck, disparities in our communities were evident. In areas of New York City, the rates of children hospitalized due to asthma and PM2.5 pollution is two to three times greater than average. It is no surprise that most truck routes and warehouses are in low income/ disadvantaged communities. Despite this, the policy focus has been on incentives for

electric cars, which go to more affluent consumers who can afford electric without handouts. The transportation sector is the next frontier in the climate change fight, contributing 12% of the total GHG emission worldwide. Of this, about 8% is contributed by medium-heavy duty (MD/HD) vehicles. This is especially painful to watch in urban areas where many depend on public transportation.

Yet there is a significant barrier to MD/HD Transportation Electrification. We believe most of the current approaches are not focused on the right problem. First, most public transportation agencies are struggling with business

continuity challenges and cannot focus on electrification. Second, people struggling to put food on the table are not dreaming about electric vehicles. Third, delivery trucks are owned by very small businesses that cannot afford an electric truck. Some US states have recently made bold announcements, but we believe these efforts lack prioritization and right focus. In this issue, we discuss barriers, opportunities to reimagine transportation, innovative regulatory and business models, and the need for corporates to walk the talk, if we truly believe that transportation electrification is a social and environmental justice issue of our time.

MDHD vehicle electrification is the most impactful opportunity for utilities, regulators and ESG investors, provided all stakeholders are willing to lead beyond their traditional roles and put their skin in the game.

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BARRIERS TO MEDIUM-AND HEAVY-DUTY VEHICLE ELECTRIFICATION

Public transit, buses, and truck electrification can have a significant positive impact on communities. However, these sectors face huge barriers to implement fleet electrification. There are four key challenges preventing MD/HD electrification.

Business Continuity—Even before the era of COVID, public transportation systems in the US were struggling to provide reliable service in many places. Aging transit infrastructure throughout the US, combined with routes that often prioritize reach over frequency or efficiency, and you have systems that are in a financial quagmire.

About 36 million Americans rely on public transportation, but in a year with COVID-19, ridership has taken a huge tumble. Projected budget deficits for even historically well-used systems are threatening to cripple transit authorities permanently¹.

Recent pledges by California, New York City, and Seattle to transition to zero-emission fleets mean that 33 percent of all transit buses in the U.S. are currently committed to going electric by 2045². However, the budget cuts in place due to COVID means that despite these goals, action will be limited.

While companies with large fleets such as Schneider, UPS, and Amazon are often brought up as targets for electrification, 90% of truck operators in the US operate with 6 or fewer trucks³. With current economic conditions and millions of small businesses in distress, most will not dream of electric trucks/buses for years to come without the right adoption models.

Further, fleet operators (ex. Delivery)/owners view electric fleets as a death trap for their legacy business due to perceived reduction in maintenance revenues. This, coupled with the complexities of charging infrastructure ownership in depots, remains a major hurdle for many medium-sized operators.

Affordability and Access—MD/HD electric vehicles are two to three times more expensive than conventional ICE vehicles. Voucher programs meant to encourage MD/HD adoption generally only cover the cost difference between the two, not the full purchase of the vehicle. Many truck operators work with small fleets. The risk of replacing a dependable truck with an unfamiliar vehicle is too great for most operators. Given that voucher programs also require the ICE vehicle to be scrapped, it provides even less incentive for a small operator, since they cannot get the resale value of the

truck back, nor can they keep their ICE vehicle for backup in case they run into an issue with the new electric vehicle.

School buses are another major segment, but as most school districts do not have money to safely open schools, electric school buses will be a low priority for many years.

Further, limited electric truck models often mean truck operators cannot have a one-for-one replacement, which raises a bigger question about modifying their operations. Small businesses not only operate on slimmer margins, but they also use trucks acquired from secondary markets. The result is that most of the dirtiest trucks on the road today do not have access to the capital or facilities required to support an electric transition.

Nascent private sector— Leaving aside Tesla, which has perceived monopolistic interests, most of the other EV infrastructure providers are small and have a high cost of capital. Further, the nature of startups gives them shorter runways to succeed. Public sector entities such as New York Power Authority (NYPA) have initiated public charging infrastructure projects, yet they will not be sufficient even if they can adopt innovative business models. This leaves two questions: who will bring billions in investment and who will be there 5 years from now to service infrastructure if startups go bust? Is public-private partnership the right model?

Regulatory/ business model limitation —Utilities are allowed by regulators to provide rebates towards make-ready infrastructure, but considering the barriers described above, this may lead to building bridges to nowhere! Utilities and ratepayers have an inherent interest in orderly and sustainable electrification of transportation. It is a misguided argument that utilities will monopolize charging infrastructure, or they should not make vehicle side investments. Further, a hands-off approach due to regulatory constraints is hurting the goal of electrification in the nascent stage of the industry. The regulatory argument of utility involvement only when the market fails will not let the market develop in the first place. With EVSE providers in their infancy, the role of utilities needs to focus on the success of the sector and protecting ratepayer money, rather than purist monopoly concerns.

¹ <https://www.nytimes.com/2020/12/06/nyregion/mass-transit-service-cuts-covid.html>

² https://uspirdfund.org/sites/pirg/files/reports/ElectricBusesInAmerica/US_Electric_bus_scrn.pdf

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³ <https://www.globenewswire.com/news-release/2020/10/22/2112575/0/en/United-States-Digital-Freight-Forwarding-Market-2020-2025-Value-Propositions-of-E-platforms-vs-Competitors.html>

OPPORTUNITIES TO DRIVE MEDIUM-AND HEAVY-DUTY VEHICLE ELECTRIFICATION

We have identified five areas of opportunity to accelerate transportation electrification equitably.

Reimagine Public Transportation—Like for like replacement of current ICE fleets with electric is the first wrong step most industry programs are focused on. When public transportation was designed, Uber and Lyft did not exist. How about giving ridesharing vouchers to low-income customers where transportation density prohibits public transport? There is an opportunity for on-demand response services in public transportation. Further, imagine school buses can be more optimized and can double as grid resources. Instead of big trucks blocking lanes of Manhattan and major cities, how about delivery distribution hubs and last-mile delivery solutions using e-bikes, etc. Some of these initiatives are in their infancy, but we need an integrated approach as a condition of rebates and incentives. And of course, this will require changes in our behavior and a little planning. It is a bad idea to order single items on-demand rather than having a weekly order!

Innovate Business Models—Often the end user just wants a vehicle to perform their core business, which is delivering goods or transporting passengers and collecting fares and charges. They do not have the ability or interest in figuring out vehicle technology, charging infrastructure, and questions around value monetization from electric fleets.

Hence it is essential that innovative business models take on:

- ✓ Innovative financing of the fleets
- ✓ Monetizing electric fleets as grid services
- ✓ Using the charger as a service

Expand Utility Footprint – Utilities need to be proactive by investing in both upstream (vehicle rebates) and downstream (charger infrastructure). Unlocking billions in infrastructure will not happen by waiting on the sidelines. Utilities must take advantage of public/private partnerships with 3rd party providers. Utilities are mostly regulated and exist in the public interest and should step up in this role to serve communities who depend on them.

Innovate Regulations—Transportation electrification is a complex multi-industry undertaking; electricity regulators should acknowledge that they do not have the expertise and depth required for now. Regulators should be wary of stifling an unregulated transportation industry with electric utility industry regulatory approaches. Monopoly fears are the same as with Apple, Amazon, Google. It may be best to

allow partial utility ownership of infrastructure to protect ratepayers.

Corporates walk the talk on Environmental Justice—Leveraging corporate sustainability goals to adopt MD/HD EV technology provides an opportunity for entities to make long-term investments to reduce their emissions. Companies situated in low/middle income (LMI) or environmental justice (EJ) communities have the key benefit of helping to improve air quality and economic opportunities in areas where particulate pollution from MD/HD vehicles is generally higher. EV incentives are geared toward addressing emissions in designated EJ or LMI communities, giving electrification opportunities to private fleets, but only if the corporations themselves are willing to invest in making this change.

- **Reimagine transportation before electrifying it**— Make this mandatory for any public grant electrification program.
- **Innovate business models**- Fleet operators just need vehicles to serve their customers. They do not want and should not be asked to figure out electric vehicle and infrastructure challenges.
- **Policymakers and regulators support innovation**—Good intentions to protect customers should not delay their welfare—they needed clean transportation yesterday!
- **Expand utilities footprint and be proactive**- Multi-billion-dollar investment in infrastructure will not materialize through fishing on the shores!
- **Social and environmental justice is good for protecting capital**- Corporates need to need to walk the talk, going beyond sustainability pledges and doing real actions.

Transportation Electrification of MD/HD fleets is a game-changing opportunity that has real and measurable impacts on the most disadvantaged communities and climate goals. We have bold visions but need practical actions. Public-Private partnership is essential, but it will need more than good intentions. All stakeholders need to go beyond their current roles to solve problems for the most important, yet disadvantaged stakeholder – the LMI end customer!

OUR RECOMMENDATIONS

We believe that the electrification of MD/HD vehicles has the potential to provide new opportunities for utilities and the private sector, while achieving the critical public policy goal of emission reductions and improved air quality. We recommend following actions:

1. End customers just need a vehicle for performing their core business, **do not burden the end customer to figure out the challenges of electrification.**
2. **Make reimagining fleets a requirement** of any fleet assessment initiatives.
3. **Make truck voucher and other rebate programs more flexible**, understand that vouchers are not enough to cover costs and most fleet owners are small businesses.
4. **Relax scrappage requirements** to allow more flexibility for small fleet owners/operators.
5. **Expand role of utilities upstream and downstream** in the vehicle electrification lifecycle. **Utilities and private providers have the same monopolistic aspirations!**
6. **Corporations** should identify LMI/EJ communities in which they currently operate and aim to **empower small businesses rather than taking subsidies** for themselves.
7. **Regulators should balance need for public good**, innovation and speed. Often, quick solutions are not perfect, but perfect can be enemy of the good sometimes!
8. **Education and outreach are a very important part** of the solution but make it targeted and meaningful. Do not make it a cottage industry for NGO's.
9. **Public and Private partnership is key to solving transportation electrification.** Insist on this requirement in every large publicly funded program.
10. For utilities, private investors, and policy makers **this is a once in lifetime opportunity** to deploy capital and help the most disadvantaged communities. Take an honest approach to help them.



It takes a village to change course of community, humanity... MD/HD Electrification is one such opportunity. We need to come together and take roles beyond our current comfort zones. The impact on disadvantaged communities and to our environment is too big to be sitting on the sidelines. We need all-hands-on-deck.

Transportation Electrification of MD/HD fleets is a game-changing opportunity which will have real and measurable impacts on the most disadvantaged communities as well as on climate goals.

UTILITY 2.0 – ABOUT THE AUTHORS



About Vrinda Inc.

• **Vrinda** Inc. is a New York-based business and technology firm. Vrinda Inc. creates success for your business through a focus on value creation by providing trusted, actionable advice, and practical solutions. We provide business and technology consulting services to the Energy, Utility, and Transportation sectors. Vrinda operates in the United States and Latin America and brings cutting edge expertise to the utility industry. www.vrindainc.com



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