

# DAIMLER TRUCK

## North America

January 23, 2022

Joseph L. Fiordaliso  
New Jersey Board of Public Utilities  
44 So. Clinton Avenue  
Trenton, NJ 08625

### **Re: Medium and Heavy Duty Electric Vehicle Charging Ecosystem Straw Proposal**

Daimler Truck North America (DTNA) submits the following comments in response to the New Jersey BPU's Medium and Heavy Duty Electric Vehicle Charging Ecosystem Straw Proposal.

DTNA is the largest producer of medium- and heavy-duty vehicles in North America. DTNA is fully committed to supporting the emerging zero-emission vehicle (ZEV) market; we expect these technologies to play a significant role in the future of commercial transportation, and know they are a vital contributor to lowering NOx and GHG emissions. DTNA is investing heavily in the development of electric vehicles. We currently offer battery electric school buses, walk-in van chassis (Class 5/6), as well as heavy-duty (Class 8) trucks for sale, and we are preparing for the market introduction of an all-electric medium-duty (Class 6/7) truck. DTNA – in partnership with Portland General Electric (PGE) – is proud to have built the first-of-its-kind public charging island for commercial ZEVs in Portland, Oregon. In addition, DTNA's expert eConsulting team is dedicated to supporting fleets with all aspects of the ZEV transition, including site design and interfacing with utilities. Therefore, DTNA is uniquely positioned to offer insights into Medium- and Heavy-duty (MHD) transportation electrification.

### **Medium- and Heavy-Duty Transportation Electrification Demand Forecast**

DTNA has calculated a 5-year average of annual new truck registrations in New Jersey, and used that volume to project the minimum number of Class 2b-8 ZEVs required by the ACT regulation for the first 10 years of the program. Based on these ACT volumes, typical vehicle miles traveled by application, days of operation, and an assumed efficiency for each vehicle class, DTNA has estimated the fully connected load for MHD. By 2030, DTNA estimates the ACT will drive more than 26,000 commercial ZEVs into operation in New Jersey, requiring a fully connected load of 900 MW. By 2035, the ZEV population will grow to more than 78,000, requiring a fully connected load of 1,600 MW. The BPU must address this long term planning, and take action on the more immediate need to make-ready for the 1,700 trucks expected in 2025, requiring 50 MW.

DTNA recommends the BPU collaborate with DTNA and other truck manufacturers to ensure that any underlying assumptions in transportation electrification forecasting are well aligned to generate the most accurate MHD demand forecast. DTNA is prepared to share further insights into our transportation electrification work with the BPU.

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### **Timing is Critical for Successful Transportation Electrification**

DTNA also encourages the BPU to consider the importance of timing, and evaluate processes to build out capacity ahead of receiving new service requests and expedite transportation electrification projects. Today, utilities do not begin adding capacity until they receive the request for new service from the fleet. Fleets are unlikely to submit their requests for new service until they have submitted their vehicle orders. New trucks are typically delivered to fleets 6-9 months from the date of order, but in our experience working with fleets, new utility service times are typically 18-24 months and often longer. This mismatch in truck/refueling timing has led fleets to cancel or delay their ZEV truck orders, and delays emissions-reducing fleet turnover.

DTNA is encouraging our customer fleets to more proactively submit their new service requests ahead of new truck orders. In turn, DTNA asks the BPU to consider processes to pull ahead transportation electrification projects to meet fleets part way. The BPU should consider the 5-10 year outlook and evaluate the time- and cost-effectiveness of adding the needed distribution capacity incrementally on a request-by-request basis vs. in “bulk”, especially in the concentrated freight areas where the ACT regulation will rapidly drive the demand for ZEVs.

### **Transportation Electrification Principles**

DTNA appreciates the BPU’s careful consideration of transportation electrification and commend their leadership in this space. As a critical piece of New Jersey’s climate policy, utility preparedness is a prerequisite for achieving a successful transition to ZEVs. DTNA recommends additional consideration of the guiding principles below:

- Medium- and heavy- duty transportation and its associated load is fundamentally different than light-duty vehicle (LDV) electrification, and must be treated as such. Unlike LDVs, most MHD vehicles cannot charge using existing AC infrastructure, and require dedicated DC infrastructure, installed at sites designed with MHD vehicles in mind. See Figures 1 and 2 below illustrating the grid to truck energy flow, and the importance of MHD site design.

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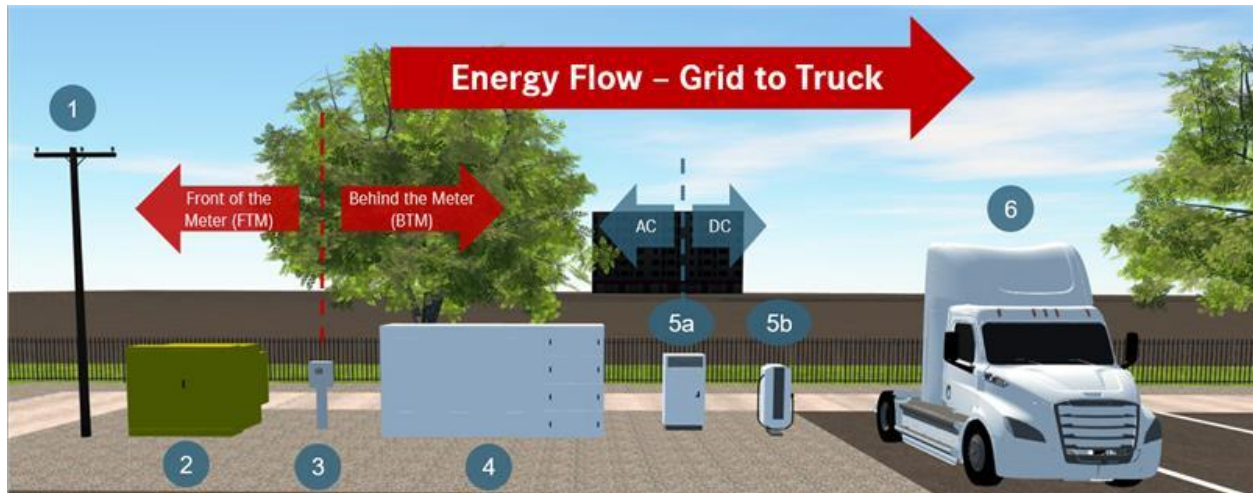


Figure 1. Illustration of Grid to Truck Energy Flow. (1) Power is pulled off primary voltage distribution lines, (2) voltage is stepped down over the transformer, (3) the meter measures how much energy is consumed, (4) the switchgear protects and isolates electrical equipment, (5a) the conversion unit (housed independently here) converts AC to DC and can sometimes be housed inside the dispenser, (5b) the dispenser connects to the vehicle (6) via a CCS connector.



Figure 2. Example of medium-duty vehicle attempting to utilize existing EV infrastructure catering only to light-duty passenger vehicles (left), resulting in traffic disruption and operator frustration. Portland's Electric Island (right) shows successful implementation of dual purpose pull-through charging infrastructure able to support all vehicle classes.

- The BPU's planning and forecasting must be in lock step with the New Jersey Department of Environmental Protection MHD vehicle regulations. The Advanced Clean Truck regulation generates significant commercial ZEV sales volumes **as early as 2025**. The required grid capacity to support the projected vehicle volumes must be available **before** these vehicles are delivered to fleets. Lacking supporting infrastructure, manufacturers will be unable to fulfill their compliance obligations under ACT, which will likely have far-reaching industry and economic implications and ultimately delay the transition to ZEVs. In addition, stranded ZEVs not engaged in commerce do not serve the ultimate goal of lowering transportation emissions.

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- The BPU must consider that MHD vehicles are disproportionately located in concentrated urban areas, creating highly localized grid capacity addition needs in constrained spaces. The charging loads for MHD depots and public en-route charging hubs will not be evenly distributed across a utility's service area.
- DTNA recommends the NJ BPU include both a system-wide transportation electrification electricity forecast and a utility distribution grid capacity requirement forecast as part of the Straw Proposal, to serve these MHD TE loads on a geographic basis, with which DTNA can assist given knowledge gleaned through telematics data from our vehicles.

### **Conclusion**

Because of the high reliance on medium- and heavy- duty vehicles to move over 70% of the nation's freight, electrifying the MHD sector is a critical step in New Jersey's climate plan. The variety of vehicle applications and diversity in fleet operations make for a unique challenge in MHD forecasting. DTNA recommends the New Jersey BPU reach out to all truck OEMs, who can provide valuable insights into their customer's transportation electrification needs, and leverage these insights to build out the long-term, necessary capacity to serve the growing MHD ZEV market.

DTNA thanks the BPU for the opportunity to provide feedback on this Straw Proposal, and looks forward to continuing collaboration with the agency to enable widespread transportation electrification.

Sincerely,



Alissa Recker  
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