

# **Discussion Points on CARB's Proposed Advanced Clean Truck Rule**

## **Advanced Clean Trucks Coalition - August 19, 2019**

### **Is our recommendation for 15% of trucks on the road by 2030 feasible?**

#### **The bulk of these vehicles can come from categories most suited for electrification.**

Based on CARB's assessment of vehicle's *current* suitability for electrification, 80% of vehicles needed to meet the 15% on-road target could come from categories of vehicles ranked most ready for electrification.<sup>1</sup> With conservatively forecasted improvements in electric trucks over the next 10 years, even more vehicle applications will be suited for electrification, making this goal even more achievable.

#### **Zero emission truck availability is increasing and this standard will increase it further.**

CARB has documented the rapid introduction of new zero-emission trucks, with more announcements coming in regularly. (See attached slides for zero-emission vehicle availability in 2016 vs 2019). Based on CARB's own assessment, there are more than 70 different models of zero-emission vans, trucks and buses that already are commercially available from several manufacturers.

#### **The Total Cost of Ownership is positive today for some classes of electric trucks and is becoming more favorable for many others.**

CARB completed a total cost of ownership (TCO) study recently for three examples of common types of trucks including a Class 3 passenger van, a Class 6 walk-in stepvan and a Class 8 day cab tractor used in regional operation. In all three cases, these electric trucks have a neutral to positive TCO by 2024 when the proposed rule would go into effect and the stepvan has a positive TCO today.

#### **Utilities are prepared to provide significant levels of charging infrastructure.**

The California Public Utilities commission has now approved proposals from SCE, PG&E and SDG&E to invest in "make ready" infrastructure and charging equipment. Through the CPUC infrastructure programs alone, there is approved funding to supply the charging needs for *at least* 18,000 electric trucks and buses on the road as the Advanced Clean Truck standard begins to take effect. This number of chargers would meet the needs of the number of zero emission trucks we are proposing for 2024 and far exceeds the charging needs for the much lower number of trucks that CARB's proposal calls for.

#### **Others are already electrifying faster than this proposal.**

A recent report from the Rocky Mountain Institute found that from the beginning of 2015 to the end of 2018, Shenzhen's fleet of electric logistics vehicles, vans, and light/medium trucks expanded from 300 to approximately 61,857, representing approximately 35% of the city's overall fleet of urban delivery vehicles (40% of these vehicles are light box trucks, 56% are light vans, and 4% are other). The rate of future adoption we recommend in order to achieve the target of 15% zero-emission trucks on the road by 2030 is much slower than rates already achieved in

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<sup>1</sup> Based on survey of truck sales in California by the Engine Manufacturers, CARB rated the suitability of vehicle types for electrification ("1" being most suitable, "10" least). In one example of a sales standard that would achieve electrification of 15% of on-road trucks, 220,000 of 280,000 vehicle sales needed to achieve this level of adoption (80%) could be met through electrification of just vehicles in the Score 1 and 2 categories today.

Shenzhen. For example, California could achieve a 15% target for electric trucks on the road by increasing from 18,000 truck sales in 2024 to 60,000 in 2030. In Shenzhen alone, 25,000 electric trucks were added to the fleet in 2018. CARB's current proposal doesn't reach this level of sales per year until 2030.

**Without a stronger rule, zero-emission truck deployment could be outpaced by absolute growth in combustion trucks.** Truck freight is projected to grow substantially—44% by 2045 across the nation.<sup>2</sup> For Californians living along freight hubs and corridors that see countless trucks pass by their communities each day, CARB's proposed targets likely mean things will get worse before they get better. CARB has recognized that protecting communities near freight facilities requires tightening its rules to transition to zero-emission freight,<sup>3</sup> and this is a critical opportunity to act on that recognition.

**Recent studies continue to underscore the enormous air quality and health benefits that come from transitioning to zero-emission technologies.** A high electrification scenario which includes significant electrification of heavy-duty vehicles, is estimated to provide health benefits valued at \$108 billion, or more than 12,000 avoided mortalities *annually*.<sup>4</sup> Substantial reductions in PM<sub>2.5</sub> and ozone come from high levels of electrification for trucks, the largest source of NO<sub>x</sub> in the State, and these reductions are highest in disadvantaged areas of the State.<sup>5</sup> Only a large-scale transition to zero-emission technologies can bring about this vision for clean air and a decarbonized economy. Yet the current proposal fails to demonstrate how it can hope to meet the magnitude of that transition.

**As climate impacts devastate communities and ecosystems across the state, global warming emissions from freight continue to increase.** While 2020 emissions targets are being met by progress toward an increasingly renewable grid, transportation emissions continue to increase, with freight movement emissions projected to grow among the fastest of any sector.<sup>6</sup> Unless we swiftly transition the expanding goods movement sector to be powered by renewable electricity, there is little hope of containing, much less eliminating, these emissions.

**The climate crisis requires urgent and strong action.** A recent United Nations Climate report<sup>7</sup> indicates that if we are to have a chance to avoid a climate catastrophe, we must limit global warming to 1.5 degrees.

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<sup>2</sup> United States Department of Transportation, Beyond Traffic 2045 National Freight Strategy Framework, at 6 <https://www.transportation.gov/sites/dot.gov/files/docs/Beyond%20Traffic%202045%20National%20Freight%20Strategy%20Framework.pdf>

<sup>3</sup> CARB, *Concepts to Reduce the Community Health Impacts from Large Freight Facilities*, at slide 22 (Accessed May 10, 2019)

[https://www.arb.ca.gov/gmp/sfti/freight\\_facility\\_concepts\\_20180322\\_staff\\_informational\\_update\\_english.pdf](https://www.arb.ca.gov/gmp/sfti/freight_facility_concepts_20180322_staff_informational_update_english.pdf).

<sup>4</sup> EPRI, Air Quality Implications of an Energy Scenario for California Using High Levels of Electrification (June 2019) at 27 <https://www2.energy.ca.gov/2019publications/CEC-500-2019-049/CEC-500-2019-049.pdf>

<sup>5</sup> EPRI, Air Quality Implications of an Energy Scenario for California Using High Levels of Electrification (June 2019) at 4 <https://www2.energy.ca.gov/2019publications/CEC-500-2019-049/CEC-500-2019-049.pdf>

<sup>6</sup> Andrew Goetz et al, *Urban Goods Movement and Local Climate Action, Assessing Strategies to Reduce Greenhouse Gas Emissions from Urban Freight Transport*, at 3 (April 2019)

[http://transweb.sjsu.edu/sites/default/files/1796\\_Goetz\\_Alexander\\_Urban-Goods-Movement-Greenhouse-Gas-Emissions.pdf](http://transweb.sjsu.edu/sites/default/files/1796_Goetz_Alexander_Urban-Goods-Movement-Greenhouse-Gas-Emissions.pdf).

<sup>7</sup> UN IPCC - Global Warming of 1.5 °C, <https://www.ipcc.ch/sr15/>

The UN Secretary General stated that to achieve this goal “...*will require urgent and far more ambitious action to cut emissions by half by 2030 and reach net zero emissions by 2050.*”<sup>8</sup>  
*[Emphasis added]*

California’s leadership on the national and international scene in mitigating climate change cannot be overstated. Our pathfinding example to show the rest of the world that we can transition quickly and successfully to zero-emission transportation and do it economically is essential in building the momentum the world needs to address the climate crisis. The economic risk of delayed action is far greater than the risk of not moving forward fast enough now. We must take action now that minimizes long term risk to our economy, water security, food security, national security and the habitability of our planet.

### **CARB needs to set long term objectives to meet Federal and State requirements.**

As CARB notes, California must meet several federal and state climate change and criteria pollutant reduction mandates including but not limited to:

- Federal health-based ambient air quality standards (key dates in 2023 and 2031)
- 40% reduction in greenhouse gases (GHG) by 2030;
- Carbon neutrality by 2045; and
- 80% reduction in GHGs by 2050

Currently, there are about 1.9 million trucks on California’s roads. Trucks and buses make up just 7 percent of vehicles on the road in California, but 20 percent of global warming emissions and 40 percent of smog-forming nitrogen oxide (NO<sub>x</sub>) emissions from the transportation sector, the largest sector for both types of emissions in California.<sup>9</sup> It is highly unlikely that the above goals can be met without a very significant contribution of emissions reductions from the medium- and heavy-duty truck transportation sector.

CARB’s current proposed rule is woefully inadequate and would only require about 4% of trucks to be zero-emission by 2030 with no plan of where it is seeking to go from there. Its needs a north star objective to guide it on a path that will make it successful in reaching its destination.

At a minimum, CARB needs to set objectives on what level of GHG reductions are needed by, e.g., 2040, 2045 and 2050 from the medium- and heavy-duty truck transportation sector. Once it has done this, then it can set further sales requirements (and subsequent fleet rule requirements) to ensure that these goals are met. For example, CARB could calculate that it needs 90% GHG reductions by 2040 and that in order to achieve that, it would need to set, e.g., a 100% zero-emissions sales target for Class 2b-3 and Class 4-8 vocational trucks for 2032, and 100% sales target for Class 7-8 tractors for 2034.

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<sup>8</sup> <https://www.un.org/sg/en/content/sg/statement/2018-10-08/statement-secretary-general-ipcc-special-report-global-warming-15-c>

<sup>9</sup> Chandler, S., J. Espino, and J. O’Dea. 2017. Delivering opportunity: How electric buses and trucks can create jobs and improve public health in California. Cambridge, MA, and Berkeley, CA: Union of Concerned Scientists and The Greenlining Institute. Online at [www.ucsusa.org/sites/default/files/attach/2016/10/UCS-Electric-Buses-Report.pdf](http://www.ucsusa.org/sites/default/files/attach/2016/10/UCS-Electric-Buses-Report.pdf).

# CARB's Comparison of Available Zero Emission Trucks Today vs in 2016

