

March 20<sup>th</sup>, 2014

Michael S. Waugh, Chief  
Transportation Fuels Branch  
California Air Resources Board  
1001 "I" Street  
Sacramento, CA 95814

Subject: Low Carbon Fuel Standard Energy Economy Ratio Update

Dear Michael Waugh and LCFS Staff,

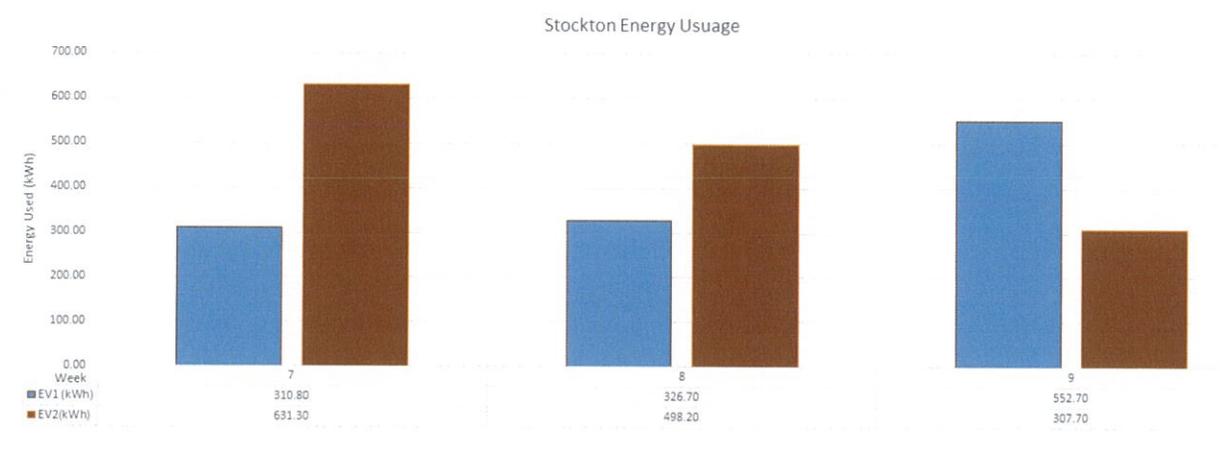
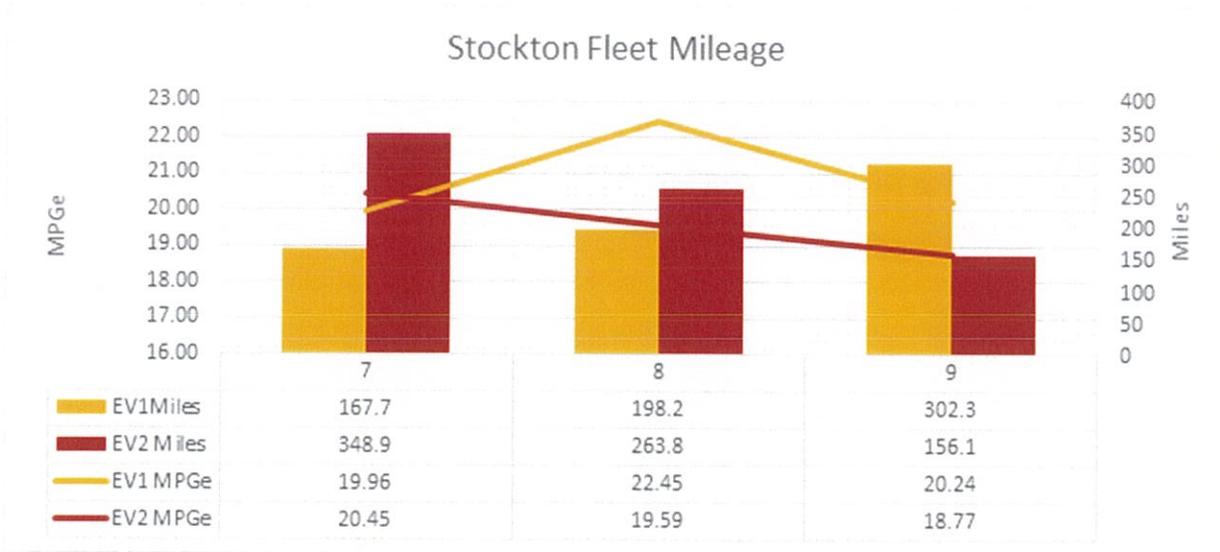
Thank you for the opportunity to provide comments on the Low Carbon Fuel Standard (LCFS) Program. We strongly support the goals of the LCFS program and applaud programs within the California Air Resources Board (ARB) that provide needed incentives to reduce the carbon intensity of fuels to help achieve California's health based air quality standards and aggressive greenhouse gas emission goals. We encourage ARB to update the Energy Economy Ratio (EER) for heavy-duty battery electric vehicles to accurately account for the miles per diesel equivalent of today's electric transit buses.

Proterra Inc. is the leading U.S. manufacturer of zero-emission commercial transit buses and makes the world's first all-electric fast-charge public transit bus, the EcoRide™. Our buses are in service in both northern and southern California and throughout the country. Operators can drive approximately 30+ miles between charges, charge along their routes in under 10 minutes by utilizing automated roof top charging and then continue on their routes, charging as needed. The EcoRide™ achieves 22+ miles per gallon diesel equivalent performance, 500%+ better than diesel, hybrid and CNG buses. In addition, this advanced technology avoids mobile smog-causing emissions from diesel and CNG buses, and it reduces carbon emissions by 70% or more compared to CNG or diesel buses.

The original EER of 2.7 for heavy-duty battery electric vehicles is no longer an accurate representation of the ratio between electric and diesel heavy-duty, transit buses. Proterra's zero-emission, fast-charge transit buses achieved 22.5 miles per gallon diesel equivalent during its Altoona performance testing and has been consistently achieving approximately 20 miles per gallon diesel equivalent while commercially operating at San Joaquin Regional Transit District – see data below. Using the more conservative 20 MPGe achieved at San Joaquin RTD and the average diesel transit bus mileage of 3.27 MPG, we strongly support updating the EER to 6.12 for heavy-duty, battery electric vehicles in order to fully recognize the significant fuel efficiency and air quality benefits of zero-emission transit buses.

The following graphs illustrate the efficiency of Proterra's battery electric buses in use at San Joaquin RTD. During the month of February 2014, for weeks 7-9 of the year, the buses were operating consistently at

nearly 20 MPGe. The second graph shows the raw energy used per week in kilowatt-hours for further reference and review.



We thank you for the opportunity to provide comments on the Low Carbon Fuel Standard and appreciate the efforts of the California Air Resources Board to reduce the carbon intensity of fuels in order to help clean the air and promote clean, low-carbon fuels to improve California’s energy security and energy independence.

Sincerely,  
  
 Eric McCarthy  
 VP Government Relations & General Counsel  
[emccarthy@proterra.com](mailto:emccarthy@proterra.com)