



The Honorable Mary Nichols
Chair, California Air Resources Board
Post Office Box 2815
Sacramento, CA 95812

February 15, 2019

RE: Zero-Emission Airport Shuttle Regulation

Dear Chair Nichols:

On behalf of Clean Energy, please accept for consideration the following comments concerning the proposed *Zero-Emission Airport Shuttle Regulation*.

We understand ARB's rationale to transition to a zero-emission future, but the proposed regulation is overly optimistic and underestimates the potential public health, societal and economic costs resulting from not supporting technologies that are ready and feasible now as part of the overall strategy. We remain concerned that this is yet another policy that will prove problematic and require the Board to revisit substantial revisions in the future.

Therefore we urge the Board to direct staff to perform an alternatives analysis before adoption to include off-ramps should specific benchmarks not be met. The Board should at a minimum provide authority to scale back the regulation if staff's projections on cost, operational reliability, and technology readiness fall short.

We remain concerned serious problems, outlined below, need to be addressed before this policy is adopted. Federal attainment requirements in 2023 and 2031 are in serious jeopardy of being met and the transportation sector must continue to be a priority as a remedy. This includes supporting zero emission vehicle development via a long-term strategy, but also via a short-term strategy the focus on technologies that are available for deployment today. Most notably, this includes heavy duty natural gas vehicles (NGVs) using renewable natural gas transportation fuel.

The low NOx engine has been certified at the optional .02 emission standard, providing greater than 90% reduction in NOx emissions. Based on research by UC Riverside CE-CERT, The 8.9L and 11.9L natural gas engines emitted lower NOx emissions than its EPA certification standard, as low as a 99% reduction at .002g NOx. Additionally, emissions decreased as the duty cycles decreased (i.e., slower speeds, idling, stop-and-go traffic) unlike diesel that increased 5-9 times above the 2010 certification. Furthermore, when you pair this technology with the biofuel, renewable natural gas, you also achieve substantial GHG emissions as well.

Please consider these critical points:

- Aggressive timeframe: our company works with many fleet owners who would be forced to comply with this regulation, and from their feedback it is clear they do not feel the implementation deadlines are feasible. One major off-airport parking company has expressed doubt they can acquire enough electric vehicle charging and supply at their airports, and have spatial concerns.

They expressed:

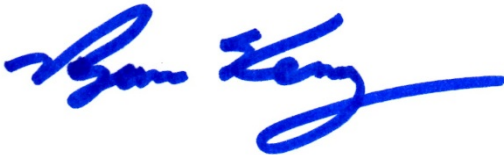
- One in five buses that were delivered had major problems with battery pack, software, transmission and drive train that has resulted in significant down time and continual trouble shooting;
- Difficulty in obtaining permission from the local government to put in charging stations. Of those installed, half have been broken and are out of warranty yet were not even two years old. Each service call costs at least \$1,000.

In addition, a major airport has expressed concern about the timeline for implementation. While the regulation would be onerous, low NOx vehicles using renewable natural gas are almost at zero emission – 99% cleaner than diesel – while the carbon intensity is much less, down to negative 303.

- Cost: the substantial burden of expense will be incurred by fleet owners, as an electric airport shuttle bus is almost double the cost of a low NOx shuttle bus: \$150,000 vs. \$80,000. This is in addition to high costs of infrastructure, regular maintenance, electricity and staff training.

Clean Energy shares ARB's goals to further reduce emissions throughout the state's airport shuttle properties. We diverge, however, in the approach on technology and believe this hybrid approach is warranted. Low NOx shuttle buses emit nearly the same emissions as what would be required under this regulation, albeit with a lower carbon intensity and half the cost. At a minimum incorporating effective off-ramps, should specific benchmarks not be reached, is prudent, sound and equitable policy.

Sincerely,



Ryan Kenny
Senior Public Policy & Regulatory Affairs Advisor – Western U.S.
Clean Energy