Old Values. New Ideas.

November 29, 2021
Clerks Office California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Proposed Amendments to the Small Off-Road Engine Regulations: Transition to Zero Emissions

California Air Resources Board:

We truly appreciate this opportunity to voice our position in writing as well as the public hearing on December, 09th 2021. Our team is anxiously waiting to see if we will have an in person hearing as well as an opening to set a future date aside to accommodate a face to face meeting with both our teams

In my entire 50 year career I have been part of the industrial/commercial manufacturing segment of producing an environmentally safe, high efficient, water & labor saving industrial/commercial cleaning systems with wastewater capture and reuse options. I am an active past president of the Cleaning Equipment Trade Association better known as CETA https://ceta.org/ that represents most major manufacturers, vendors, distributors/dealers and affiliate members such as contract cleaners that perform their services mobile or on site. I also currently continue to hold a senior executive position with a major manufacturer of the systems in question dealing with every industry category from manufacturing said product to delivering and educating the end user.

With this comment I am as simply attempting to shed some light on a subject very dear to tens of thousands of operators and operator owners in the state of California using industrial/commercial cleaning systems or better known as pressure washers. I have not read the entire list of comments that have been submitted electronically but it seems fair to say that the majority seem to be in favor of the elimination of gasoline powered lawn care or hand held devices such as the noisy leaf blower. A person would have to really search to find a negative comment on a pressure washer industrial/commercial or even referencing the consumer products.

The information I am referencing below is found on this link produced by CARB (May 15, 2019) https://ww3.arb.ca.gov/msprog/offroad/sore/AbstractExecutiveSummary.pdf

This survey as gathered by CARB is an in-depth analysis of what we would classify as the consumer based product well under 9.7KW and not a clear pictorial view of the industrial applications we serve. Below is the final outline used to categorize all pressure washers.

- The last page of the report states a total of “2,398,713 pressure washers” (1,048,803 for engine powered).

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- If you take into consideration that residential products on average are owned for 5 years with an estimated annual usage of 30 hours and the industrial/commercial gas engine driven (GED) pressure washers 1 to 2 years.
  - A single cylinder 9.7KW style engine's estimated usage is 1,800 to 2,000 hours and V-Twins @ 18.6KW 4,000 hours annually.
    - CARB estimates 250,000 total pressure washers sold each year in which <50,000 or 20% are industrial commercial units sold into the CA market place annually between the 13 HP (9.7 KW) to 25 HP (18.6 KW).
    - Life expectancy of 2 years equals a total <**100,000** industrial/commercial pressure washers utilizing 9.7 KW – 18.6 KW engines in service at any given time or **9.5% of the 1,048,803** assessed.

We would like to suggest segmenting our industry into a separate category with a phase in approach to zero emissions due to the health and wellbeing of the infrastructure support our industry offers vs. tools under 2.5KW that we are currently partnered with. The benefits are not just limited to agriculture, transportation, schools, construction, municipalities, counties and state facilities that use our products to clean, sanitize and maintain everything that moves from public transportation, over the road delivery vehicles such as FedEx and UPS to the US Postal service every seaport dock and port of entry that uses commercial freight carrier semi-trucks who's safety is controlled by the Department of Transportation as well as airports, tarmac and aircraft maintenance facilities. Even things that can't move require inspections and regular maintenance such as bridges, public and private buildings, grocery stores, city streets, state and Federal highways, walkways & sidewalks, shopping malls inside and out, homeless encampments, removing graffiti as well as sanitizing, tractors and conveyer belts used in agriculture, fruit, produce and wine production operations, as well as in poultry, beef and pork raising & process facilities. You name it and it is probably washed and or sanitized with a system similar to what we produce.

We feel as an industry leader a great responsibility to be a good steward of the environment and agree that a cleaner source of power with zero emissions should be the desired outcome and are currently designing alternative battery pack sources. This project will take at least 2-3 years to get the initial design and cost down as well as the safety and training protocols of storing and transporting multiple 10-20 KW lithium ion batteries as well as maintaining and disposing of them properly.

- The current zero emission initial investment is not practical due to the continual high level of energy required and financial limitation boundaries of current technologies available.

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- The current unit purchased today at $2,450.00 end user price equipped with a 13HP (9.7KW) gas engine drive (GED) that operates @ 4 GPM @ 3000 PSI or 12,000 units of cleaning power (GPM x PSI= UCP). Unit is a water saver (the average public utility garden hose is approximately 10 GPM @ 60-80 PSI) The equivalent electrical operated system would be a 10HP unit that would operate for approximately 1 hour 15 minutes on a 10 KW battery pack with a full charge at a consumer cost of approximately $21,750.00. The average operator utilizes a single cylinder unit such as the 9.7 KW GED approximately 5 hours a day or a total investment of 4 additional 10KW batteries @ $17,500.00 consumer price each for a total investment cost of $91,750.00 vs $2,450.00 or 37.5 times the cost of the current 9.7KW gas engine drive unit.

The good news is that we may have a potential alternate conversion that could be reviewed immediately as part of a phase in approach while our engineering teams ramp up R&D on battery pack options for our newly segmented industrial/commercial category.

- First of all we could immediately start the process to retrofit most engines currently in use as well as all new production units moving forward once the approval is given and all tests are performed to established criteria. With the assistance and guidance of the California Air Resource Board we could establish a realistic and fair date to implement as we gear up research and development for the electric 10-20KW battery power source.
- We could acquire great results just not zero emissions, but we could accomplish zero evap and eliminate up to >95% of NOx, >98% Carbon Monoxide, >95% Hydro Carbons using **LP (liquid propane) conversion kits**.

We are here to be part of the solution not the problem. We are looking forward to your response.

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