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TRANSFER FLOW, INC.
Fuel Tank Systems

January 23, 2010

Clerk of the Board
Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments on Adoption of Proposed Amendments to the Regulations Applicable to Portable Diesel Engines and Diesel Engines Used in Off-Road and On-Road Vehicles.

Dear Board Members:

Thank you for the opportunity to provide comments for your consideration regarding the above regulation.

Transfer Flow Inc. is an Engineering and Manufacturing Company located in Chico, California. We have been in business for 27 years. Over these many years we have written both EPA and CARB Certificates of Conformity for such companies as John Deere, Oshkosh, Bluebird, Fleetwood, Gillig and Roadmaster. Our company owns over 160 CARB Executive Orders. We have received CARB Executive Orders for New Vehicles, Aftermarket and SORE. We are currently working with your Refueling Tank group to help draft future emission regulations for those particular systems.

Needless to say, we have extensive experience with reading a variety of CARB regulations, following their emission test procedures, supervising the emission testing, assembling the test data, writing the emission applications, and submitting them to CARB for review. Emissions systems have become more advanced and their applications have become significantly more difficult to complete over these 27 years.

In 2000, as part of its charter to reduce public exposure to air contaminants produced by diesel engines, the California Air Resources Board (CARB) approved the "Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel Fuelled Engines and Vehicles." The plan requires mandatory retrofit or replacement of the nearly 1.3 million diesel engines operating in the state California. The plan divides diesel engines into two types, "mobile" and "stationary" and established for each different standards of remedy.

1444 Fortress Street, Chico, CA 95973
530.893.5209 | 1.800.442.0056 | Fax 530.893.0204
WWW.TRANSFERFLOW.COM

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Essentially, the plan allows for the cost-effective retrofitting of stationary engines, but because at the time of plan adoption there were no known retrofit solutions available, the program effectively mandates the costly replacement of mobile and stationary portable engines. As a result of the high cost of replacement, engine owners have been either slow to comply or have found it more cost-effective to merely accept fines for noncompliance.

Today, technology has caught up and we believe there is a viable way to retrofit portable diesel engines that both serves the public good and helps the California economy. We would like to see the Risk Reduction Plan to Reduce Particulate Emissions from Diesel Fueled Engines and Vehicles modified to support the latest breakthroughs in Diesel Particulate Filters.

The relevant CARB regulations, emissions standards, retrofitting options, verification and reporting requirements are complex. They vary by both engine classification and usage model. At the highest level, CARB classifies diesel engines as either Mobile or Stationary. The engines are further sub-classified into Tiers. The dirtiest or "uncontrolled" engines are classified as Tier 0, while higher tier engines (Tier 1 through Tier 4) are cleaner.

There are a number of technologies that are available to reduce particulate matter from diesel-fueled engines. These technologies can be categorized as engine design changes, exhaust treatments, or fuel additives. One of the leading cost-effective technologies for reducing harmful diesel emissions is the diesel particulate filter, or DPF. These devices generally consist of a wall-flow type filter positioned in the exhaust stream of a diesel engine. As the exhaust gases pass through the system, particulate emissions are collected and stored. As the pressure differential across the DPF increases, a regen operation is triggered and the PM is transformed into a white ash. The effectiveness of diesel particulate filters is proven and well documented. Both CARB and the U. S. Environmental Protection Agency have reported emission reductions of 85 to 97 percent for various types of catalyzed diesel particulate filters.

Today, active and serviceable DPF technology provides the most economically viable approach for reducing harmful diesel particulate matter emissions. Unfortunately, current CARB regulations do not allow for DPF retrofits on TIER 0 portable engines.

In California, approximately half of the engines that are used on agricultural lands for the purpose of growing crops or raising animals are diesel engines. On most farms, it is not unusual to have two identical engines, one used to power a pump mounted on a mobile piece of equipment (a portable engine) and the other powering a similar pump but fixed in one space (a stationary engine). CARB regulations result in two different classifications, despite the fact that both diesel engines are identical (with identical emissions). Herein lies one of the problems.

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According to the Butte County Air Quality Management District (BCAQMD), 49% of their registered portable agricultural engines are Tier 0 diesel engines. Because current CARB regulations do not allow for DPF retrofits on Portable Tier 0 engines, 49% of Butte county agricultural portable equipment owners must replace a perfectly good engine to meet regulatory requirements. CARB estimates that the cost to replace a diesel engine can range from $11,000 to $43,000 (depending on the size and horsepower). In contrast, the average cost to purchase and install an active and serviceable DPF retrofit system is estimated to be approximately $5,000 to $7,000.

Owners or operators of portable engines have been able to register their units under the CARB Statewide Portable Equipment Registration Program (PERP) in order to operate their equipment throughout California without having to obtain individual permits from the numerous local air districts. Today, there are approximately 38,000 portable engines registered in PERP. Data was not available for the per cent of Tier 0 portable engine owners throughout the entire state. Applying the 49% Butte County Tier 0 quantity, it results in 18,620 owners in the state who could fall into this category. Based on current CARB regulations, Tier 0 engines are not eligible for DPF retrofits. Hence the only recourse available to these owners, in order to meet emission requirements, is to replace the entire engine.

According to a recently released CARB report, the average Tier 0 engine replacement cost is $175/Hp. That equals $16,000 per equipment for the Tier 0 engines in Butte County. If 49% of registered California Portable Equipment is comprised of Tier 0 engines, the estimated cost to replace nearly 18,620 engines will exceed $290,000,000.

Farmers and small business owners are ultimately responsible for making sure their Portable engines are compliant with CARB emission regulations – thus leaving them on the hook for the majority of the engine upgrade costs and potentially thousands of dollars in fines should they fail to meet compliance testing.

The estimated cost to retrofit 18,620 Tier 0 Portable engines with DPF filters would be only $93,000,000 – representing a savings to California farmers and small business owners of approximately $200 million dollars. This level of savings could very well make the difference in whether or not a small business can remain a growing concern. Additionally, the market associated with manufacturing, installing, certifying and maintaining DPF equipment for portable engines would create scores of additional jobs.

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Since the adoption of the Portable Regulation and PERP in 1997, there have been significant advances in DPF and computer technology. The DPFs used for 2007 and later on-road vehicles have been driven literally millions of miles. Over these last 3 years, fine tuning of on-road DPF systems have occurred, and as a result, today's DPF systems are a proven technology.

After reading the Off-Road, Portable and Stationary Regulations, we believe there are several changes to these regulations that the CARB Board should address.

- Alter the procedure to obtain an Off-Road, Portable or Stationary Executive Order. The DPF is only one part of an emission control system. To obtain an Executive Order, CARB should review the system drawings, instruction sheets and testing data. If the supplied DPF is currently used on on-road applications, PM testing and durability testing have already been accomplished and should be acceptable to CARB.

- On-road emission control systems already have the ability to record and store regen operations, pressure differentials, temperature at DPF, diagnostic trouble codes, etc. Incorporate that technology in your Off-Road, Portable and Stationary Regulations.

- Allow any Portable diesel engine, including Tier 0, to be retrofitted with an active and serviceable DPF. Currently Tier 0 Stationary diesel engines are allowed to be retrofit with DPFs. Why shouldn't Tier 0 Portable diesel engines be allowed to be retrofitted?

- Current Off-Road, Portable and Stationary Regulations have not been modified to utilize today's technology. The major components to produce a functioning and highly reliable active and serviceable DPF system are readily available by Tier 1 automotive suppliers. With our 27 year association with OEM manufacturers (Ford, GM and Chrysler) and their Tier 1 and 2 supplier base, we have the capability and knowledge to integrate these components and provide reliable DPF systems for Off-Road, Portable and Stationary equipment at substantially lower costs.

The particulate matter produced by diesel engines is a toxic air contaminant with the potential to cause health problems. Given CARB's mission to promote and protect public health through the effective and efficient reduction of air pollutants while recognizing and considering the effects on the economy of the state, the current regulations regarding Off-road, Portable and Stationary Diesel Engines need to be revisited.

It would serve CARB well to consider transitioning its relationship with the community from the current model of "classifying and regulating" diesel emissions to "partnering" with the community to reduce diesel emissions. The very word "partner" implies that there are two sides.

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If the desired outcome is cleaner air via lower diesel emissions – and if both parties are authentically committed to that outcome - does it matter how the outcome is achieved? Why should it matter if a particular diesel engine is classified as Stationary or Portable if the same diesel engine can be made to run cleaner by retrofitting it with a commercial active and serviceable DPF?

Revisiting the existing regulations with a rigorous focus on achieving the desired outcomes as opposed to focusing on "the only possible implementation" can determine whether 2010 is the best of times or the worst of times for thousands of California's farmers and small business owners.

Sincerely yours,

Bill Gaines
Chairman
Transfer Flow Inc.

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