

28 February 2008

Mary Nichols
Chair of the ARB
1001 I Street
Sacramento, CA 95814

Dear Mary,

I am the CEO of a software company in Menlo Park, CA called KonaWare. We develop and market commercial fleet tracking and monitoring software with an emphasis on fuel and emissions monitoring and control. We support and advocate for the Guidelines of Proposition 1B: *Goods Movement Emission Reduction Program*. The Guidelines specifically call for use of GPS tracking devices, RFID, and vehicle data that may include vehicle identification number (VIN); date, time, and distance traveled for each trip; GPS locational information; emissions or fuel usage rates; and other information collected from gauges, sensors, and other sources. This is the core of our business. In this letter, I want to point out some new, inexpensive technologies that can be easily adopted to perform these critical tasks thereby reducing the emissions from California's trucking (and eventually all commercial) fleets, and improving fuel economy.

Our fleet tracking and monitoring software, and associated electronics systems, offer substantial benefits to users, and to our environment and communities, including:

- A substantial reduction of emissions and improvement of fuel economy by almost 50%
- GPS tracking and identification of the vehicles
- Monitoring and control of driver behavior (speeding, lead footing, exceeding idle time limits, etc.)

These benefits are accomplished by:

- Monitoring driver behavior. Examples include elimination/reduction of excessive idling, rapid accelerations and decelerations. Environmentally friendly driving is called "Eco-Driving". If commercial fleet drivers behave in an eco-friendly manner, up to 25% fuel savings and emissions reduction can be obtained.
- Monitoring vehicle maintenance both scheduled and unscheduled. Examples: cylinder mis-firings, low tire pressure, malfunctioning catalytic converters, dirty fuel filter, etc. Drivers may not realize their engine is malfunctioning and polluting more than it should. A real-time monitoring system will alert them and their fleet managers.

An article in the Drive Section of last Friday's Mercury News stated that studies in Germany show a **25% boost** in fuel efficiency and reduction of emissions from the practice of eco-driving. Proper maintenance results in a **10-20 percent boost** in efficiency and emissions reduction. (See: http://www.mercurynews.com/ci_8337500?IADID=Search-www.mercurynews.com-www.mercurynews.com&nclck_check=1).

How does it work? We have designed a very simple and inexpensive electronic device (pictured below) that plugs into the vehicle diagnostics port which is standard equipment on every vehicle sold in the world, from passenger cars to Class 8 tractor-trailer rigs. The device is manufactured in China by our partner CC Yamei Electronics. There are no wires, no batteries, no configuration... anyone can install this in less than a minute. The cost is only \$40 retail. Our software does most of the magic. The device extracts vehicle diagnostics data

and forwards via wireless internet to a smartphone and/or central computer where the data can be reported and analyzed.



We make the following calls to action:

1. We advocate CARB to modify its recommendations to develop more precise specifications for emissions tracking and monitoring.
2. We ask CARB to initiate a pilot project to monitor a sample of the state's fleet. This break-through technology is not a closed, proprietary system. There are multiple vendors in the market, so competition will drive prices down.
3. We recommend that CARB develop a **Green Fleet Certification** program similar to the Energy Star concept. Our outline of such a program is included as Addendum A to this letter. This pioneering program will become a model for other states and federal government to follow.

We would be pleased to address any questions or provide any additional information on these topics. Please don't hesitate to contact me at the address above or the numbers below. We thank you for your consideration of our advocacy and our recommendations.

Very Respectfully,

Jim DiSanto
CEO
KonaWare, Inc.
650-859-6021 O
650-283-4402 M
jimd@konaware.com

Addendum A



More than twenty percent of the world's green house gasses come from the automobile. Reducing carbon emissions from vehicles is necessary in order to decelerate global warming trends and preserve our environment for future generations. As such, KonaWare proposes a **Green Fleet Certification** to be administered and awarded by the State of California to public and private fleets which adopt technology and practices that ensure maximum conservation of fuel and minimal engine emissions. This Certification would be awarded to operators of commercial fleets and owner operator truck drivers provided they submit to a vehicle monitoring program and meet or exceed the minimum standards of the Certification. Compliance would indicate that the vehicle is operated efficiently and cleanly and is helping to keep carbon emissions and fuel consumption to a minimum. A vehicle that complies would be issued a California **Green Fleet** sticker which can be proudly and prominently displayed on the vehicle, and would be reported on the Governors' web site (and other prominent California web sites). In the future, various incentives such as tax and license fee credits could be issued to the vehicle owner to encourage participation.

Independent vendors would provide the monitoring systems as well as aggregation of the data for each commercial vehicle, and report the data to the vehicle owner. An example is the KonaWare OBD (On-Board Diagnostics) Vehicle Manager which consists of an electronic device (pictured below) that plugs into the diagnostics port of the vehicle (below the steering wheel). The device extracts information from the vehicle's engine and forwards it wirelessly to a server operated by KonaWare. The vehicle owner is afforded a personal web portal where they login and check on the data gathered from their vehicle whenever they so desire. If a vehicle goes out of compliance, the owner is alerted and given a certain period of time to correct the deviation. If corrections are not made, the problem is reported to the state agency and the owners Certificate is revoked.

Monitoring and compliance would be overseen by an audit committee that assigns one or more private auditors to audit the monitoring programs to ensure that they are genuine, devoid of fraud, and successfully reducing emissions and increasing fuel efficiency as per the goal of the program.

Vehicle operational parameters monitored and reported includes:

- Emissions: does the vehicle meet minimum Federal emissions standards (i.e. would it pass a smog check)?
- Fuel usage (MPG). Is the vehicle operated at near optimal fuel efficiency compared to industry averages for the make/model/year of the vehicle.
- Is the engine tuned and running properly? Is timing and firing proper so that fuel consumption and emissions are minimized for every mile traveled?
- Idle Time: does the vehicle comply with idle time restrictions (e.g. 5 min for CA) thereby minimizing emissions made by parked vehicles?
- Is the exhaust system (catalytic converter) operating properly in order to minimize emissions?
- Is tire pressure kept at the proper level to increase mileage?
- Rough Riding: does the driver use excessive acceleration/deceleration (thereby increasing emissions and reducing MPG), especially when compared to the profiles determined by the manufacturer to operate the vehicle at the optimal fuel efficiency?
- Is the manufacturer's recommended maintenance schedule followed? Are all scheduled maintenance items completed on time?

The following advice was recently published in the Drive Section of the San Jose Mercury News, Sunday Feb 24, 2008, under the headline "How to Save Gas" (and thereby reduce emissions):

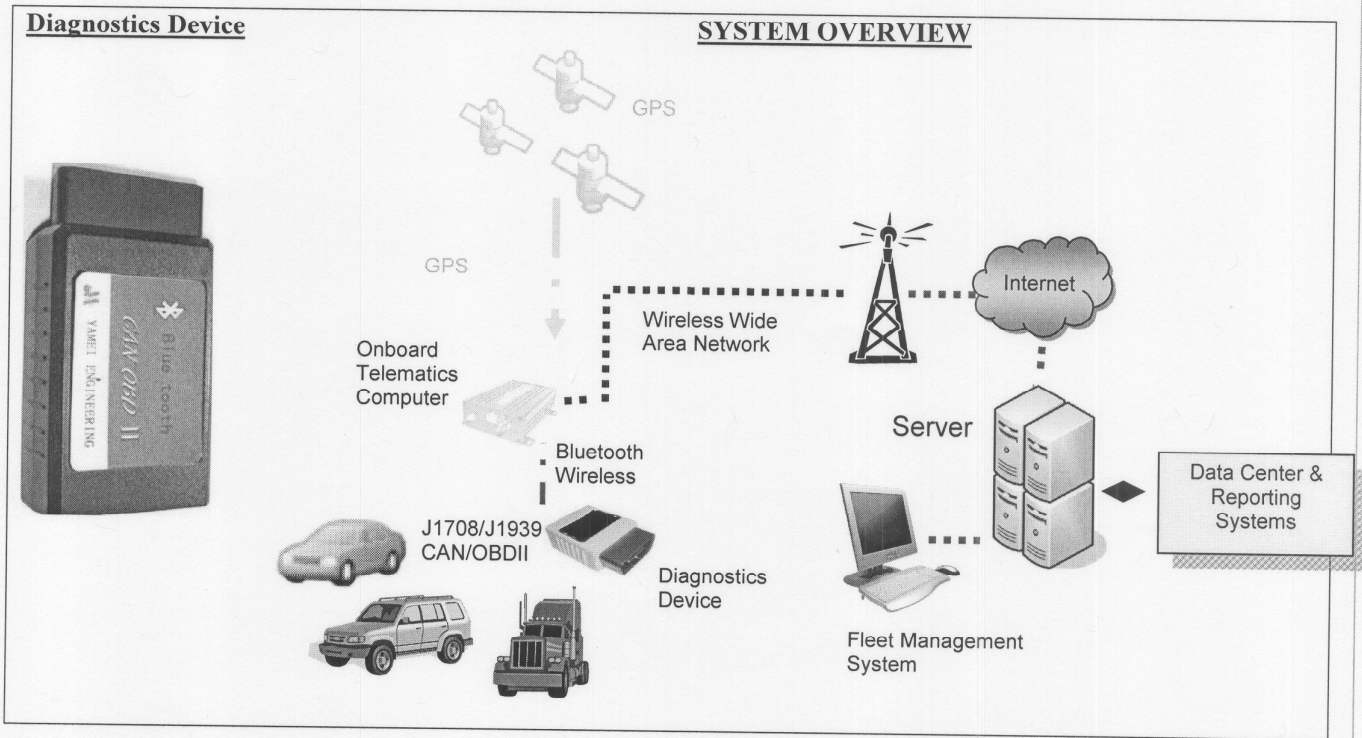
Eco-Driving. Be a kinder, gentler driver. Gentle, steady acceleration (and deceleration, too), and following the speed limit, will give you the most bang for your fuel buck. Studies in Germany show that people who practice eco-driving can boost efficiency by as much as 25 percent.

Maintenance. A poorly tuned engine can increase fuel consumption by as much as 10-20 percent. Keep your car in shape with clean oil, a clean air filter, regular tune-ups and proper maintenance according to the manufacturer's recommendations. Proper tire inflation is vitally important also.

Idle Time. If you're going to be sitting for more than 30-45 seconds, it's worthwhile to turn off the engine. In fact, the same goes for turning the engine on: modern cars don't need to sit and warm up before you drive them. As well, California has a 5 minute idle time law in place, 7 x 24.

Overall, driving habits can have a dramatic effect on fuel savings and emissions reduction. Technology can be employed to modify and improve driving habits.

KonaWare uses the On-Board Diagnostics device pictured below. It is manufactured by CC Yamei Electronics of Beijing, China for less than \$20 per unit. The device is powered by the vehicle bus and does not require battery power or any wiring. As such, anyone can install it in less than a minute.



In his recent book *Six Degrees* author Mark Lynas points out that an expected 50% increase in global energy demand by 2030 will result in CO2 emissions increasing by a frightening 52 percent in the same period, leading to a future which is not sustainable. It is clear we must take immediate action to reduce carbon emissions. The California Green Fleet Certification initiative is an important and much needed step in the right direction.

