

EPA and CARB Regulations for Alt Fuels

In the United States, under the Clean Air Act all vehicle emissions are regulated by the US EPA. California has its own more stringent standards which are regulated by the California Air Resources Board ("CARB"). A dozen or so states have also adopted the CARB standards for vehicle emissions, including most of the North East and the West Coast.

Over the years, the auto manufacturers have done a great job in placing emissions monitoring and control devices on vehicles to constantly monitor the vehicle, providing on-the-fly fuel calibrations to the engine for maximum MPG with minimum pollution. The vehicle's computer will also turn on a Check Engine Light and set diagnostic codes for technicians to rely on should any problems arise such as engine misfire, component failure, etc. These sophisticated monitoring schemes are known as the second generation of On-Board Diagnostics or "OBD II" and has been a godsend for reducing air quality problems around the country. Auto makers must prove out in their OBD II systems in the laboratory for EPA and/or CARB annually.

Now, here is where we come in. We change the fuel the engine is running on and suddenly all of the calibrations the automaker performed for his fuel no longer apply to our fuel. So we have to recalibrate the monitors to work on our fuel in the same way the used to work on the original fuel. Otherwise our customers would end up with faulty Check Engine Light illumination, improper codes being set, and of course possibly dirtier emissions as compared to before we started. When properly calibrated, natural gas vehicles can provide significantly cleaner emissions vs. gasoline or diesel. It is the painstaking calibrations for the alternative fuel which is critical in ensuring compliance with air quality regulations.

By changing the fuel we tamper with the original emissions control design of the vehicle, so EPA and CARB require alternative fuel converters to comply with the OBD II and tailpipe requirements in essentially the same way the large automakers comply -- via laboratory demonstrations. This is an expensive and time-consuming process. It also requires us to certify one specific engine family or test group at a time, thus the variety of vehicles we can convert is extremely narrow.

Some have suggested that the certifications are unnecessary given the small volume of vehicles actually converted. Others feel that states other than California should also be able to directly regulate alternative fuel conversion activity. In any event, the certification requirement is a significant hurdle which has no doubt been a primary factor in the United States lagging other countries in the adoption of alternative vehicle fuels. Oklahoma Senator Inhofe has sponsored legislation in an attempt to address these issues. Illinois Representative (and President-elect Obama's Chief of Staff) Rahm Emanuel has also introduced legislation to address the need to accelerate use of natural gas in the transportation sector.

[Click here for the relevant EPA web site pages](#)
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