

Why Can't EPA Rules Allow Pre-Post Emissions Tests to Verify Emissions Performance?

A frequent comment in blogs and other communication mediums is that U.S. EPA rules for certification impose too high a standard for natural gas aftermarket conversions, lead to costs that are not warranted and impede the market for NGVs. Another popular comment is that the only thing EPA should require is verification that motor vehicles continue to operate as clean after conversion as before conversion, and that a pre-conversion followed by post-conversion emissions test should be sufficient to demonstrate emissions integrity.

Cost

NGVAmerica agrees that demonstrating compliance with EPA certification rules is complex, time-consuming and expensive.

EPA & Flexibility

In 2011, EPA issued streamlining rules that were intended to assist the aftermarket industry and make it less difficult to obtain certification or approval for NGV systems. These rules appear to be working for older vehicles. Most of the additional flexibility was provided for aftermarket systems intended to be used on motor vehicles that are more than two years old. For newer vehicles, EPA provided some additional flexibility, but it still imposes high expectations on aftermarket conversions. EPA reasoned that it did not want to create an incentive for OEMs to by-pass the development of OEM NGVs in order to facilitate aftermarket conversions. The agency apparently believed that if it lowered the bar too much for newer vehicles, this would encourage OEMs to forgo the cost and expense of developing their own NGVs in-house, and it also would create an unlevel playing field between OEMs and the aftermarket suppliers. NGVAmerica argued that EPA should define "newer" vehicles as being one year or less, but EPA did not agree to this.

Before and After Emission Tests

There are a number of problems with this assertion, including:

- The assertion is not supported by a detailed explanation of the type of emissions testing that should be conducted. Would it be conducted in a laboratory, would someone verify the fuel specifications used, or would an

independent authority/business conduct the tests? The assumption is that most persons asserting this argument mean a simple IM 240 tailpipe test.

- A before and after IM 240 test will not test for hot-soak or evaporative or running loss emissions—it will show performance for certain key pollutants and whether the emissions on that particular day are cleaner or dirtier post-conversion. It can also be used to reveal whether vehicles still meet federal tailpipe standards on that day.
- A before and after emissions test also will not provide an indication of how vehicles will operate the next day, six months later or longer-term. It will not reveal whether the operation on natural gas is causing damage to a vehicle's catalyts or other hardware. EPA's rigorous requirements are intended to demonstrate compliance over the life-time of a vehicle. It is true that natural gas is an inherently cleaner-burning fuel than gasoline, but to take advantage of its cleaner-burning properties, a vehicle must be engineered to operate on natural gas or have hardware changes made to the engines in certain cases. OEM's like Ford and GM do not recommend conversions for their vehicles unless the vehicle is one of their "gaseous-prep" models that has hardened seats and valves.
- A before and after IM 240 test will not reveal whether a vehicle's onboard diagnostic system is continuing to operate properly on gasoline, or whether it is able to read and store fault codes associated with operation on natural gas. EPA requires that the engine retrofit system meets all emission requirements, which includes the ability to self-diagnose problems during the life of the vehicle (typically up to 120,000 miles), and inform the driver (via the check engine light) and assist the mechanic (via the OBD II codes in computer so that the technician can pinpoint the problem and fix it). Some non-certified systems can actually allow the vehicle to operate well on natural gas, but not necessarily communicate with the OBD II system.