GM Powertrain

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To: California Environmental Protection Agency Air Resources Board

From: Shaleen Clark
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Subject: Specification for Compressed Natural Gas

Thank you for the opportunity to comment on this important Californian fuel quality rule making regarding specification of CNG fuel, for use in both automotive and stationary power applications.

It's our understanding that the Air Resources Board (ARB) will propose revising the current California CNG specification (Title 13 CCR, 2292.5) later this year, and is currently soliciting initial directional information and comments from stakeholders. With this as a background, GM provides the following general information and looks forward to following up with more detailed information over the next few months.

The current California CNG gas specification is primarily a compositional based specification, in other words it specifically limits the concentration of several hydrocarbon and non-hydrocarbon gas species governing its chemical composition. Additionally it includes important language advising CNG users on the need to monitor and avoid contaminants such as water, dust and residues. During the ARB webcast discussion on May 19, 2010, it was proposed to change the specification to more of a performance based one, primarily based on methane number and energy content in order to focus it towards the mobile source market. GM appreciates the attention ARB is giving to ensure the future California CNG specification meets the performance needs of both the stationary power and mobile source applications.

However, GM believes the focus of the future CNG fuel specification should continue to be compositionally controlled. Knowing the specific composition allows important combustion parameters such as Methane Number, MON, Lower Heating Value, and Vapor Pressure to be calculated. The specific formulas for calculating these parameters should be listed or referenced within the CNG specification document, to assure all the fuel customers are using the same equations. From a practical standpoint, and additional benefit of a composition specification would be for example if there was a tanker of LNG waiting in port for results of confirmatory testing prior to off-loading, it's my understanding that the chemical compositional analysis is a much faster and more readily available test to conduct than waiting for time consuming octane engine test results. Additionally, the control of fuel contaminants is another important aspect of the fuel specification that GM would like to see expanded. Non-volatile residues from compressor oils for example can contribute to fuel system residues. Minimizing these would be beneficial for both mobile and stationary applications. The particulate matter that is listed in the current CNG specification should contain numerical limits, as opposed to the general statement that is currently described. Other important contaminants that should be controlled are water (water dew point and water vapor), and reactive sulfur. A good reference to mimic would be the India CNG spec (BIS 15320:2003).

Thank you,

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