September 22, 2014

Via E-mail

Mr. Michael S. Waugh
Chief, Transportation Fuels Branch
1001 I Street
California Air Resources Board
Sacramento, CA 95814

RE: Low Carbon Fuel Standard Reconsideration– Proposed Updates to the GREET 2.0 Model

Dear Mr. Waugh and Members of the Air Resources Board Staff:

Westport would like to thank the ARB for the ability to provide comments on the recent workshop held August 22, 2014 related to changes to the California GREET 2.0 model.

Westport is a global leader in the development and commercialization of natural gas engines, fuel systems and storage technologies. Westport and its joint venture Cummins Westport have deployed thousands of natural gas engines in California, across the United States and around the world.

Fleets across California including UPS and Waste Management have invested heavily in the acquisition of vehicles and build out of natural gas fueling infrastructure in an effort to utilize domestic fuels and reduce dependency on diesel and gasoline fuels, criteria air pollutants and GHG. Significant changes to the GREET model may have profound effects on the continuing growth and development of the natural gas vehicle market in California.

The ARB recently released a document on August 22, 2014 that suggested that significant changes to the California GREET Model are underway that would see large increases in the calculation of carbon intensity (CI) factors used for several fuels including all forms of natural gas.

Westport has a number of concerns on the information presented namely that it was not provided with any accompanying documentation outlining methodology or data sets for stakeholders to review. Without adequate information it is difficult to either corroborate or arrive at fair and defensible numbers to be used in the new LCFS.

Some specific concerns are:

- The values assigned to the CIs of LNG, CNG and Bio-methane. The information provided was not sufficient to understand how those figures were calculated.

- Rates of methane venting are now being modelled with current information and given that more data will be forthcoming in studies in early 2015, it seems prudent to wait until new data is available before setting a fixed value. There is much work underway to determine rates of upstream methane venting with a greater degree of precision.

- Further clarity on the evaluation of CNG and LNG truck tailpipe emission factors is needed. The current iteration of GREET does not account for different technologies within the natural gas engine space. Westport's High Pressure Direct Injection (HPDI) technology, which features thermal efficiency on par with diesel engines, is not represented. An update to the model must include a distinction between compression-ignition and spark-ignited natural gas engine technologies.

- It is also unclear if different duty cycles are considered in the model, for example, there are differences in performance between an over-the-road truck and a vocational refuse vehicle.

- Changes to the assessment of hydrogen and electricity which use natural gas as a feedstock were not mentioned in the staff presentation. Will the new model account for changes to other fuels based on the changes in CIs for feedstocks?

- There are also questions about variations in fuel processing and feedstock variations and how they will be addressed in the update of GREET. At an earlier CA-LCFS consultation session it was understood that different petroleum feedstock sources would incur different carbon intensities
    - Is this still the case?
    - Will feedstock variation be considered for other fuels (NG – conventional, shale, co-production wells)
    - Will alternative fuel processing pathways be available (e.g. if a variety of liquefaction techniques exist, will a more efficient process have the opportunity to press home their advantage in the standard, encouraging inefficient produces to upgrade their facilities.

As a result of these concerns we request that further dialogue and disclosure on methodologies and data sets are shared with all stakeholders to allow for a comprehensive consultation to help establish fair and vetted values for all fuels.

We strongly suggest that the ARB reviews its timeline and process in this issue and urge a more comprehensive consultation process with the public, industry and other stakeholders. Full disclosure and presentation of data and analysis on which the changes are based is necessary for stakeholders to provide informed comments and suggestions to create a more robust model. These changes have the effect of creating uncertainty in the market in addition to mixed messages about the value of alternative fuels which in turn affect investment in advancing natural gas vehicles and fueling technologies.

We acknowledge the value of a strong LCFS and the benefits such a system will have on the ability of California to lower the carbon intensity of fuels in order to reach its carbon reduction goals. Natural gas vehicles have the potential to help meet current and future LCFS targets. At this time we respectfully urge the ARB to ensure that any proposed changes to the GREET model are based on the latest and most comprehensive data available, with full disclosure and public review of data sources, analysis, and conclusions. We would like to thank the ARB for the ability to comment on the proposed changes and would like to request the opportunity to meet in-person with ARB staff to discuss these issues in greater detail.

Sincerely,

Karen Hamberg
Vice President, Strategy
Westport Innovations Inc.