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International Association for Natural Gas Vehicles (IANGV)
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Submitted to the GRPE Informal Group on Gaseous Fuelled Vehicles

A. PROPOSAL FOR AFTERMARKET NGV CONVERSIONS

Addition to Amendment applicable for Aftermarket NGV Conversions only.

- Provided that a natural gas vehicle is certified to the same emissions standards as the base petrol vehicle, aftermarket NGV converters shall be permitted to use the petrol OBD calibration when the vehicle is running on natural gas. The readiness code shall be set for one of the fuel types, and be indicative that readiness is complete for both fuel types.
- No emissions data will be required in support of fault thresholds set by the petrol calibration when the vehicle is running on natural gas.

B. JUSTIFICATION

It is not economically feasible for aftermarket NGV converters to comply with all requirements of OBD regulatory requirements. The costs of developing full compliance are not in alignment with the volumes of vehicles converted, and the converter does not have access to the OEM computer or OBD calibration, in order to make any changes which may be required to OBD thresholds, when the vehicle is running on natural gas instead of petrol. Such costs may also not be warranted if the petrol OBD calibration is sufficiently adequate for an aftermarket bi-fuel NGV conversion to meet most diagnostic requirements.

As evidence of this, we refer to a study carried out in Canada, for the California South Coast Air Quality Management District, (SQUAMD), the New York State Energy R & D Authority (NYSERDA), and Natural Resources Canada. The objective of the study was to develop an understanding of the OBD II performance of typical aftermarket NGV conversions. A test program was designed so that a fault was progressively induced in the system, during natural gas operation, for each monitor, until the MIL was illuminated, as determined by the gasoline threshold settings. At that point the emissions were measured to compare them against the required malfunction criteria. For bi-fuel vehicles, threshold performance could be compared directly between CNG and gasoline. The participants included a number of representative aftermarket NGV converters, and two recognized test laboratories. Tests were run on bi-fuel vehicles certified on CNG to the same emissions standards as gasoline, and on dedicated CNG vehicles certified on CNG

to much lower emissions standards than on gasoline. The study therefore covered different CNG conversion technologies, different OEM vehicles, bi-fuel and dedicated CNG conversions, and different levels of certification stringency.

The following general conclusions were reached by the study:

- Provided that the certification level remains the same as the base gasoline vehicle, the gasoline monitors will generally detect faults with an NGV, at emissions levels below the malfunction criteria set by the OBD regulations.
- When the certification level on CNG is more stringent than the base gasoline vehicle, then the threshold levels will have to be reset from the gasoline settings.

We believe that this evidence will support the amendment for aftermarket NGV conversions as described above, and allow converters to continue to provide services which meet the spirit of OBD but remain economically viable.