

**WORK ITEMS**  
**INFORMAL GROUP ON GASEOUS FUEL VEHICLES**  
Within the UN GRPE (WP29)

**DUAL FUEL HEAVY DUTY ENGINES**  
NGVA Europe

**Name of Organisation submitting Amendment/Work Item**  
NGVA Europe

**Person submitting Item**  
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**Regulation name and reference number**

**Name of Amendment/Work Item**  
Certification of engine output, CO<sub>2</sub> emissions, fuel consumption, and regulated emissions from road vehicles powered by dual fuel engines mainly burning natural gas/biomethane, but with pilot injection of diesel

**Specific language for Amendment/Work Item**  
As far as I could judge the only item really requiring new testing procedures is the establishment of fuel consumption values. Since the actual percentage mix of gas and diesel may vary from vehicle to vehicle it is not possible to calculate fuel consumption on the basis of measured HC, CO and CO<sub>2</sub> emissions. It would be necessary to introduce actual measurements of consumed diesel and gas respectively – either to directly provide the consumption of each fuel, or to provide a share which is then used to calculate fuel consumption based upon measured HC, CO and CO<sub>2</sub> emissions.  
Power output, CO<sub>2</sub> emissions and regulated emissions can be measured using existing testing rules, but it would be necessary to include the dual fuel option in the text.

**Rationale: (Why is it important/required?)**

**Conversion of diesel vehicles to dual fuel vehicles, or the introduction of OEM produced dual fuel vehicles, offers the opportunity to radically reduce CO<sub>2</sub> emissions in comparison with similar diesel fuelled vehicles. With 80 % diesel substitution via natural gas CO<sub>2</sub> emissions will fall by 20 % (if the diesel fuel is replaced by biomethane the CO<sub>2</sub> savings will be far higher). Although the option has so far mainly been suggested for use in HD vehicles there are no principle reasons why it could not also be used in light duty vehicles.**

**OEM manufacturers (e.g. AB Volvo) have indicated a potential to reach above 90 % diesel substitution which would correspond with a 25 % CO<sub>2</sub> reduction already when replacing diesel with natural gas.**

**Apart from the large CO<sub>2</sub> reduction potential, an increased use of dual fuel technology would reduce the diesel demand, and thus help to correct the present European imbalance between diesel demand and diesel supply. Every barrel of diesel avoided roughly means a barrel less of crude oil imports.**

**Analysis/testing or data requirements to support the Amendment/Work item**  
(could be anticipated or existing supporting documentation)  
**Will be supplied upon request**