Informal Working Group on Gaseous Fuelled Vehicles (GFV)

Background and Accomplishments
January 2008 to June 2016
GFV Background

• First Organizational Meeting September 2007 (Brussels)
• Mandate creating informal Working Group on Gaseous Fuelled Vehicles (GFV) 55th GRPE January 2008, Geneva
• Two times extended in 2011 and 2014
• Expire June 2016
Scope of Work

• Fuels to be dealt with include the gaseous fuels in internal combustion engines
  - Natural gas & LPG
• Other possible fuels
  - $\text{H}_2+\text{CH}_4$ combinations
  - Biomethane
  - Natural gas/diesel dual fuel systems also could be part of the mandate of this group.
Regulations Involved

• Regulation No. 49 - Emissions of C.I., NG, and P.I. (LPG) engines
• Regulation No. 83 - Emissions of M₁ and N₁ categories of vehicles
• Regulation No. 101 - Measurement of fuel consumption/CO₂ emissions of M₁ and N₁ categories of vehicles
• Regulation No. 115 - Specific LPG and CNG retrofit systems (emissions provisions),
• Other topics dealing with gaseous fuelled vehicles that are addressed by the GRPE.
GFV Leadership

• Chairman, André Rijnders (RDW-Netherlands)
• Secretariat(s): NGV Global (Jeffrey Seisler) & AEGPL (Arnaud Duvielguerbigny [to June 2011], replaced by Salvatore Piccolo)
• Other Task Force chairpeople as new work items created
Special Task Forces

• **Task Force on On-Board Diagnostics** (2009) Chairman: Henk Dekker (TNO) and Jean-Francois Renaudin (OICA)

• **LNG Task Force** (for R.110) (June 2011 – April 2013)
  Chairman: Paul Dijkhof (KIWA). Secretariat: NGV Global
  - Worked under the umbrella of GFV due to its expertise to deal specifically with LNG. Input provided to GRSG

• **Heavy Duty Dual-Fuel Task Force** (June 2010-June 2013)
  Chairman: Henk Dekker (TNO)

• **Heavy Duty Dual-Fuel Task Force Retrofit** (June 2013 – June 2016) Chairman: Henk Dekker (TNO)
Accomplishments

*Regulation 49 (Emissions Heavy Duty Engines)*

- Extend Euro VI pollutant emission requirements to dual-fuel heavy duty engines and vehicles; amending the 06 series of UN Regulation No. 49 (June 2012)
- Extend the Euro V pollutant emission requirements to dual-fuel heavy duty engines and vehicles; amending the 05 series of UN Regulation No. 49 (June 2013)
Accomplishments

Regulation 83 (Emissions Light Duty Engines)

• OBD systems for mono-fuel vehicles also to apply to bi-fuel vehicles (2008)
• Amendment regarding the simultaneous use of gas and petrol under certain conditions on some bi-fuel vehicles equipped with petrol direct injection systems (2012)
Accomplishments

*Regulation 85 (Measurement of net power)*

• Extend its scope to dual-fuel heavy duty engines and vehicles, enabling their type approval.
Accomplishments
*R.115 Emissions of Gaseous Fuels*  
*LPG & natural gas*

- Limit in using petrol in test cycle when measuring gas emissions and switch-over time limit from petrol-to-gaseous fuel (90/60 sec) (2009)
- Alignment of Regulation No. 115 with respect to the new provisions on the Euro 5/6 emission levels (2009)
- Clarifying the provisions of Regulation No. 115 with regard to the definitions of retrofit systems as well as at correcting some errors (2009)
Accomplishments

*R.115 Emissions of Gaseous Fuels (LPG & natural gas)*

- Redefining the class of bi-fuel vehicles regarding the simultaneous use of gas and petrol in gas mode under certain conditions. This is similar to the amendment in UN Regulation No. 83 (2012)
- Introduced the use of $G_{20}$ and $G_{25}$ reference fuels. Similar proposals concerned UN Regulation No. 83. (2012)
- Aligning R115 with R.85 provisions to reduce various errors (2013)
Accomplishments

Miscellaneous

• Input to the European Commission on the development of a non-methane hydrocarbon (NMHC) limit value in European Regulation 715/2007 (2008)

• Input to Vehicle Propulsion System Definitions (VPSD) informal working group (2015)
Accomplishments

The final effort of the GFV