LDV CO$_2$ regulation

Looking beyond 2020
Overview

- Current situation
- 2050 roadmap
- 2030 non-ETS
- Relevant studies
- Conference 'Driving road decarbonisation forwards'
Current legislative framework

EU Regulations set new fleet average targets of:

- 95g/km in 2021 for passenger cars
- 147g/km in 2020 for light commercial vehicles

Both Regulations request the Commission to review the targets and modalities for the period beyond 2020
PRIMES-TREMOVE modelling to achieve 80% GHG reduction by 2050 compared to 1990: http://ec.europa.eu/clima/policies/roadmap/index_en.htm
European Council October 2014 conclusions on the 2030 Climate and Energy framework.

• 30% non-ETS reductions compared to 2005.

• Invites the Commission to:

"further examine instruments and measures for a comprehensive and technology neutral approach for the promotion of emissions reduction and energy efficiency in transport, for electric transportation and for renewable energy sources in transport also after 2020".
Energy union Communication adopted by the European Commission in February 2015:

- "...necessary to fundamentally rethink energy efficiency and treat it as an energy source in its own right"
- "...a continued focus on tightening CO₂ emission standards for passenger cars and vans post-2020"

| Review of Regulations setting emission performance standards to establish post-2020 targets for cars and vans | Commission | 2016 - 2017 |
Studies feeding into preparation of the post 2020 regime

- WTW
- Regulatory approaches
- Regulatory metrics
- Mileage
- Downweighting and utility parameter
- Deviation test-real world
- Technologies and costs
- Modalities
Simulated fuel cycle performance of different 2010 fuel-vehicle technology combinations

Source: JEC - Joint Research Centre-EUCAR-CONCAWE collaboration, WTW study, version 4, 2013
Simulated fuel cycle performance of different 2020 fuel-vehicle technology combinations

Source: JEC - Joint Research Centre-EUCAR-CONCAWE collaboration, WTW study, version 4, 2013
TTW or WTW CO₂?

Share of BEV / PHEV less risky
FCEV unattractive

BEV/FCEV manufacturer cost similar - abatement costs very different
User and manufacturer interests better aligned?

Study still underway – ends June.
Considers the full range of possible technologies to reduce light road vehicle CO$_2$ for the period beyond 2020 up to 2030. Covers:

- Internal combustion engines
- Hybridised internal combustion engines
- Plug-in technologies
- Fuel Cell vehicles
- Off-cycle technologies
Previous studies have demonstrated that there is substantial potential for ICE improvement after 2020. Provisional findings from the current analysis do not differ from this.
When published the study will contain a full list of the technologies that have been considered and their potential for reducing CO\textsubscript{2} emissions over the period up to 2030.

The study only looks at estimated CO\textsubscript{2} savings and costs, it does not address other factors affecting market take-up.

The expectation is that technology to reduce ICE emissions would continue to be deployed until a point at which other technologies can be deployed to meet the desired objectives more cheaply.
• Objective of the study is to explore the range of options for post 2020 LDV regulation.
• No presumption of any particular technology mix.
• The impact of design options on technology choice is one question to be considered.
• Design options also likely to affect overall costs of CO₂ reduction.
• Robustness of options to changing technology take-ups will be important.
Extreme scenarios exploration

**BEV Extreme**

- FCEV / REEV: 0.43%, 1.8%, 7.7%, 15%, 25%
- BEV: 0.10%, 0.14%, 0.2%, 0.5%
- PHEV / REEV: 0.5%
- Hybrid ICE: 4%
- ICEV: 8%
- Adv. xEV: 0%

**FCEV Extreme**

- 2013: 100%, 2015: 99%, 2020: 96%, 2025: 90%, 2030: 78%
- FCEV / REEV: 3.0%, 4%, 5%, 7%, 4%
- BEV: 1.00%, 0.43%, 2.0%, 6.0%, 15%
- PHEV / REEV: 7%
- Hybrid ICE: 7%
- ICEV: 25%
- Adv. xEV: 10%

**PHEV/REEV Extreme**

- 2013: 99%, 2015: 95%, 2020: 81%, 2025: 69%, 2030: 45%
- FCEV / REEV: 0.43%, 2.5%, 11.1%, 22%, 45%
- BEV: 0.10%, 0.2%, 0.5%
- PHEV / REEV: 10%
- Hybrid ICE: 9%
- ICEV: 42%
- Adv. xEV: 0%

**Ultra Efficient ICEV**

- 2013: 100%, 2015: 99%, 2020: 96%, 2025: 82%, 2030: 70%
- FCEV / REEV: 0.10%, 0.7%, 2.3%, 5%
- BEV: 0.3%, 0.0%, 0.3%, 0.3%
- PHEV / REEV: 16%
- Hybrid ICE: 55%
- ICEV: 10%
- Adv. xEV: 20%
'Driving road decarbonisation forwards'

- Conference with participation of Commissioners Bulc, Bienkowska and Arias Cañete
- Takes stock of where we are and what is needed to decarbonise road transport in line with objectives
- Website and registration: http://www.euconf.eu/driving-road-decarbonisation-forwards
- 18th June in Brussels
Thank you