The Power of Innovation and Regulation
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MAHLE is among the 20 largest automotive suppliers worldwide and belongs to the charitable MAHLE Foundation, Sales: EUR 12.8 billion (2017)

More than 170 production locations in 34 countries and on five continents

16 major development locations with around 6,000 development engineers and technicians in Germany, Great Britain, Luxembourg, Slovenia, Spain, the USA, Brazil, Japan, China and India

Employees: 78,000 (2017)
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General Approach to HDV CO₂ Regulation

- Strategy of the Commission is to reduce CO₂ emission from HDV and drive innovation
  - Assessment of CO₂ emissions of new heavy-duty vehicles via VECTO under the EU type approval starting 2019
  - Monitoring and reporting of CO₂ emissions of new heavy-duty vehicles
  - Mandatory standards to reduce CO₂ emissions

- The HDV CO₂ regulation has to be based upon a sound baseline

- The to be expected CO₂ reduction potential is lower than in passenger cars, as the HDV are already very efficient

- Freight transport by road is a key element for GDP growth and has to remain affordable

MAHLE International GmbH, Dr. Otmar Scharrer, 11-April-2018
The target of WHR is to use waste heat from exhaust to generate mech. or el. power

WHR can achieve 3…5% fuel consumption reduction

WHR is not yet available in VECTO

VECTO has to cover all available technologies and needs frequent updates new technologies

An effective CO₂ bonus system is required for technologies not (yet) implemented in VECTO
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Key Points

- The upcoming HDV CO₂ regulation can incentivize CO₂ reduction technologies for highly efficient diesel and gas engines

- Technology-neutrality is an important principle of emission legislation

- Alternative/synthetic fuels can help to achieve a CO₂ neutral combustion engine in combination with further optimization of the engine

- BEV, HEV or FCV are promising upcoming technologies in addition to conventional diesel and gas powered trucks

- Any evaluation of future powertrains needs to include infrastructure and TCO