



# **Green vehicles: regulatory and policy developments in Europe**

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- **Global and EU Background**
- **Main elements of the EU strategy on green vehicles**
- **Global co-operation**

- **Major initiatives around the world for green vehicles**
- **Shared global agenda to decrease oil dependency, climate change, competitiveness**
- **Electric vehicles under the spotlight but significant improvements happening for conventional powertrains and engines**

- **Air Quality Directives**
  - **Persisting NO<sub>2</sub> exceedances in urban areas despite more stringent emissions standards**
  - **Main contributor is road transport, significant deviations between actual and expected NO<sub>x</sub> emissions**
- **Strategy for climate and GHG emissions**
- **Long term vision for transport in Europe - 2011 Transport White Paper**

# Elements of EU strategy



- **Cleaner and more efficient road vehicles (Regulatory framework for CO2 and pollutants)**
- **Market**
- **Long-term strategy - Research and Innovation**
- **Specific actions for electric vehicles**
- **Global dimension**

- Road transport contributes about one-fifth of the EU's total emissions of carbon dioxide (CO<sub>2</sub>)
- CO<sub>2</sub> emissions from road transport increased by nearly 23% between 1990 and 2010
- Light-duty vehicles (cars and vans) responsible for 15% of the EU's emissions of CO<sub>2</sub>
- Regulation (EC) No 443/2009: Light vehicles manufacturers have to ensure that their new car fleets do not emit more than an average of 130 grams of CO<sub>2</sub> per kilometre (g CO<sub>2</sub>/Km) by 2015 and 95g by 2020
- Procedures under preparation for heavy-duty vehicles

- **EURO 6 (light-duty) and EURO VI (heavy-duty) standards**
- **Unprecedented effort in the reduction of emissions and strengthening of procedures**
- **New test cycles for type approval (WHTC, soon WLTP)**
- **New test methods (e.g. PN for diesel vehicles and engines)**
- **New advanced requirements for real driving emissions based on portable emissions measurement systems (PEMS)**

- **Directive 2009/33/EC on the Promotion of Clean and Energy Efficient Road Transport Vehicles**
- **Aims at a broad market introduction of environmentally-friendly vehicles**
- **Requires that energy and environmental impacts linked to the operation of vehicles over their whole lifetime are taken into account in all purchases of road transport vehicles, as covered by the public procurement Directives and the public service Regulation**



# Long term strategy on transport



- The 2011 White Paper on Transport is proposing to move towards *"a competitive and resource efficient transport system"*
- Key 2050 goals
  - 60% CO2 reduction over the 1990 levels by 2050
  - Halve the use of 'conventionally fuelled' cars in urban transport by 2030; phase them out in cities by 2050
- *New technologies for vehicles and traffic management will be key to lower transport emissions in the EU as in the rest of the world*

- **EU Framework Programme for Research and Innovation: Horizon 2020**
- **European strategic transport-technology plan (STTP), White Paper's research and innovation pillar**
- **Will outline the priority fields of greatest relevance to research and innovation**

- **Range of technologies: hybrid electric vehicles (HEV) and rechargeable technologies such as plug-in hybrids (PHEV), extended range (EREV), and battery (BEV)**
- **EVs will be rather a gradual evolution**
  - **2011 sales of hybrid vehicles worldwide amount to a little below 1 million units (2% of the global sales, expected to grow to 5.5% of the world market)**
  - **Rechargeable vehicles: 11.000 units sold in 2011**
  - **Estimates by car industry currently 3 to 10% of sales in 2020-2025 in the EU**
- **Public support required to overcome barriers (infrastructure, technology limitations, consumer acceptance,...)**

# Electric vehicles - Efforts



- **Placing on the market: Safety requirements**
- **Standardisation: Charging interface, global standards**
- **Charging and refuelling Infrastructure: Build-up**
- **Recycling and transportation of batteries**
  
- **Link to energy market for power generation, distribution and sustainability**

- **International standardisation activities, regulatory dialogues**
- **Important role of the UNECE harmonized regulations, under the 1998 agreement**
  - **World Light Duty Test Procedure (WLTP)**
  - **World harmonized set of rules for CO2 emissions measurement**
  - **Electric vehicles and fuel cells included**
  - **Heavy-duty hybrids (HILS)**

# Global cooperation (EVs)



- **UNECE Informal working groups on EVs**
- **GTR on safety of EVs by 2014**
- **Participation of many global partners**

- **Many thanks for your attention !!!**
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