

EU energy policy 2030: Perspectives for alternative fuels

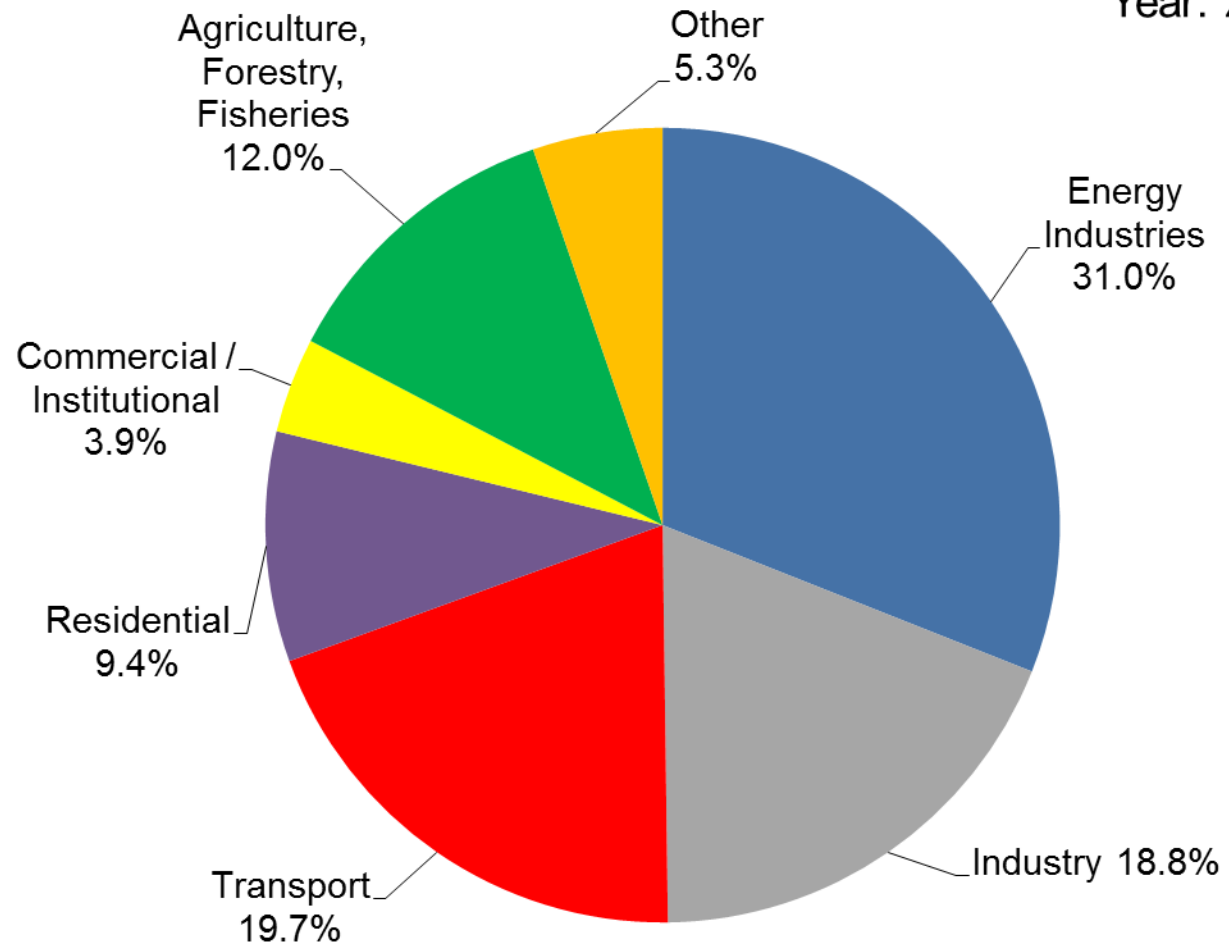
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Prague, 2014

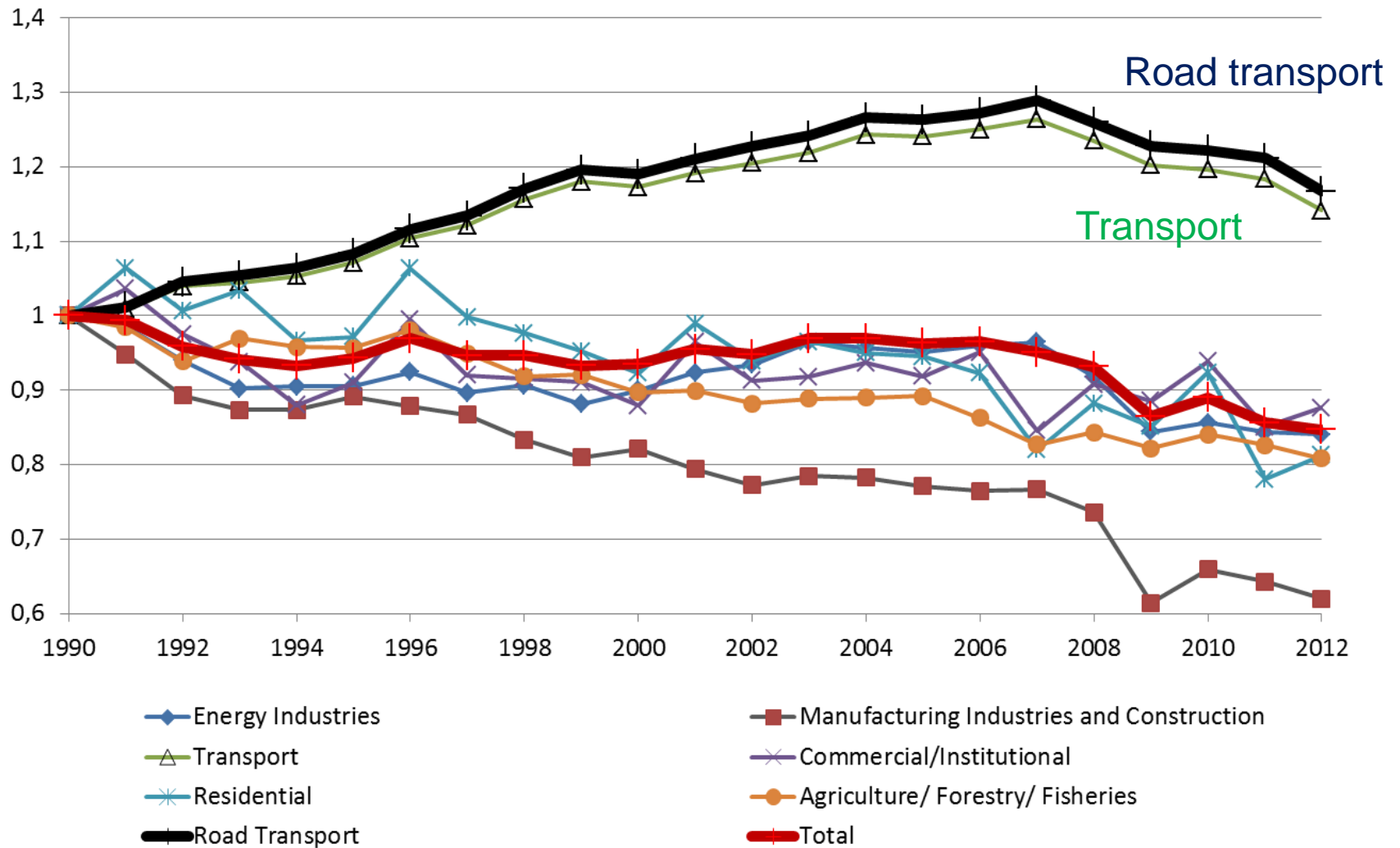
1. Introduction
2. Impact factors on CO₂ emissions
3. Current policies
4. Alternative automotive technologies and fuels
5. Policy targets and roadmap
6. Conclusions

GHG emissions by sectors: EU-28

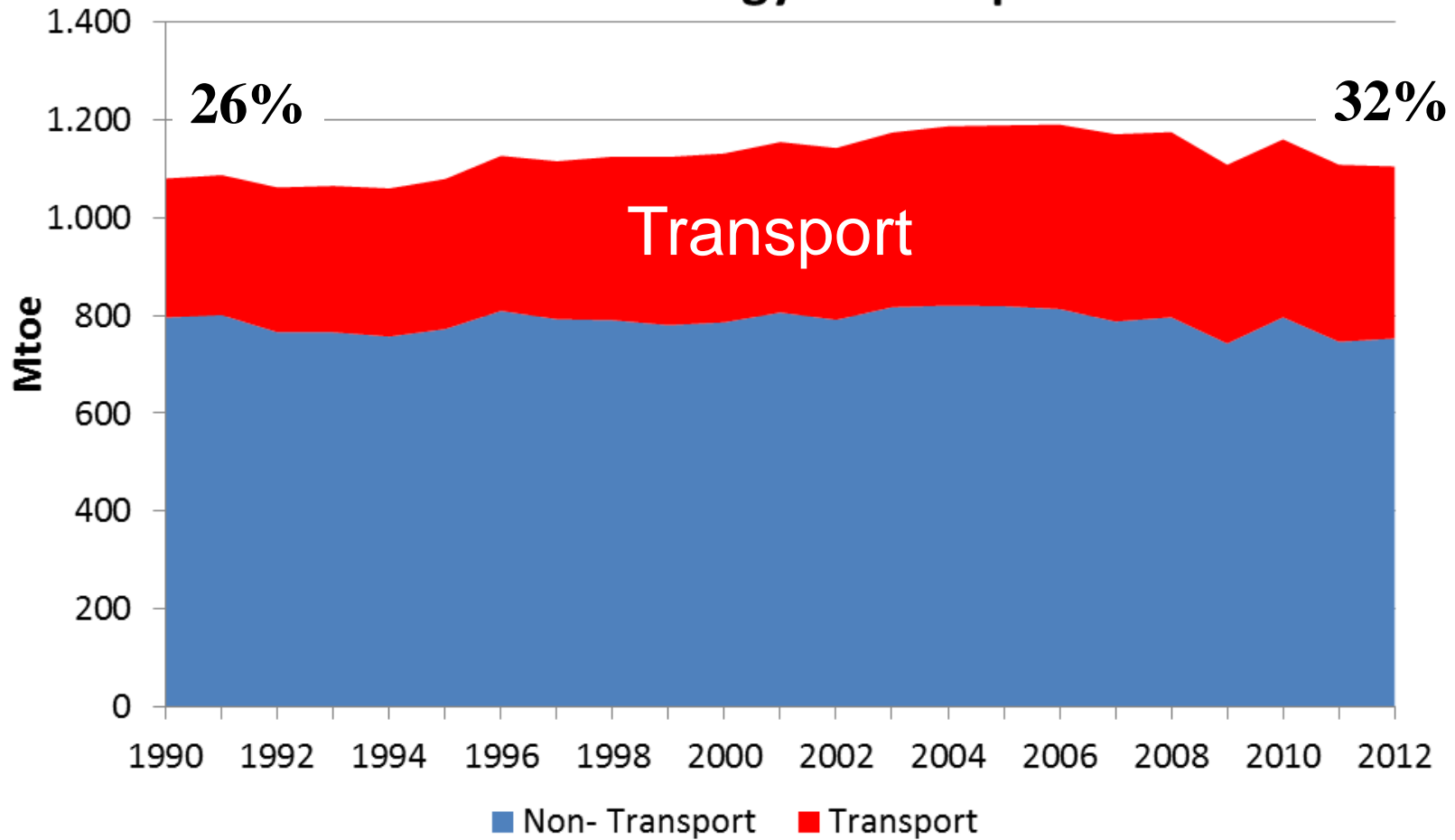
Year: 2012

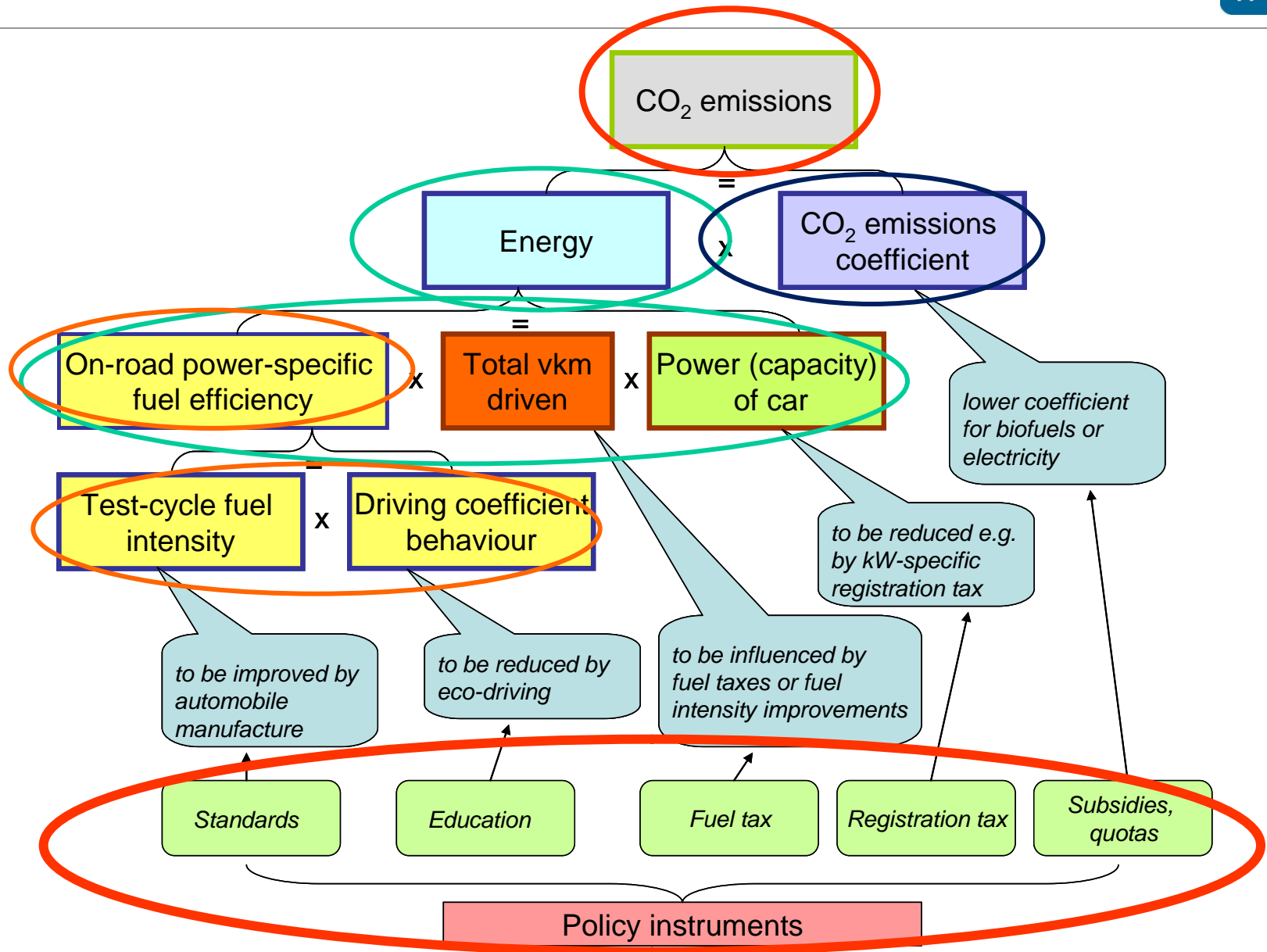


GHG emissions by sector



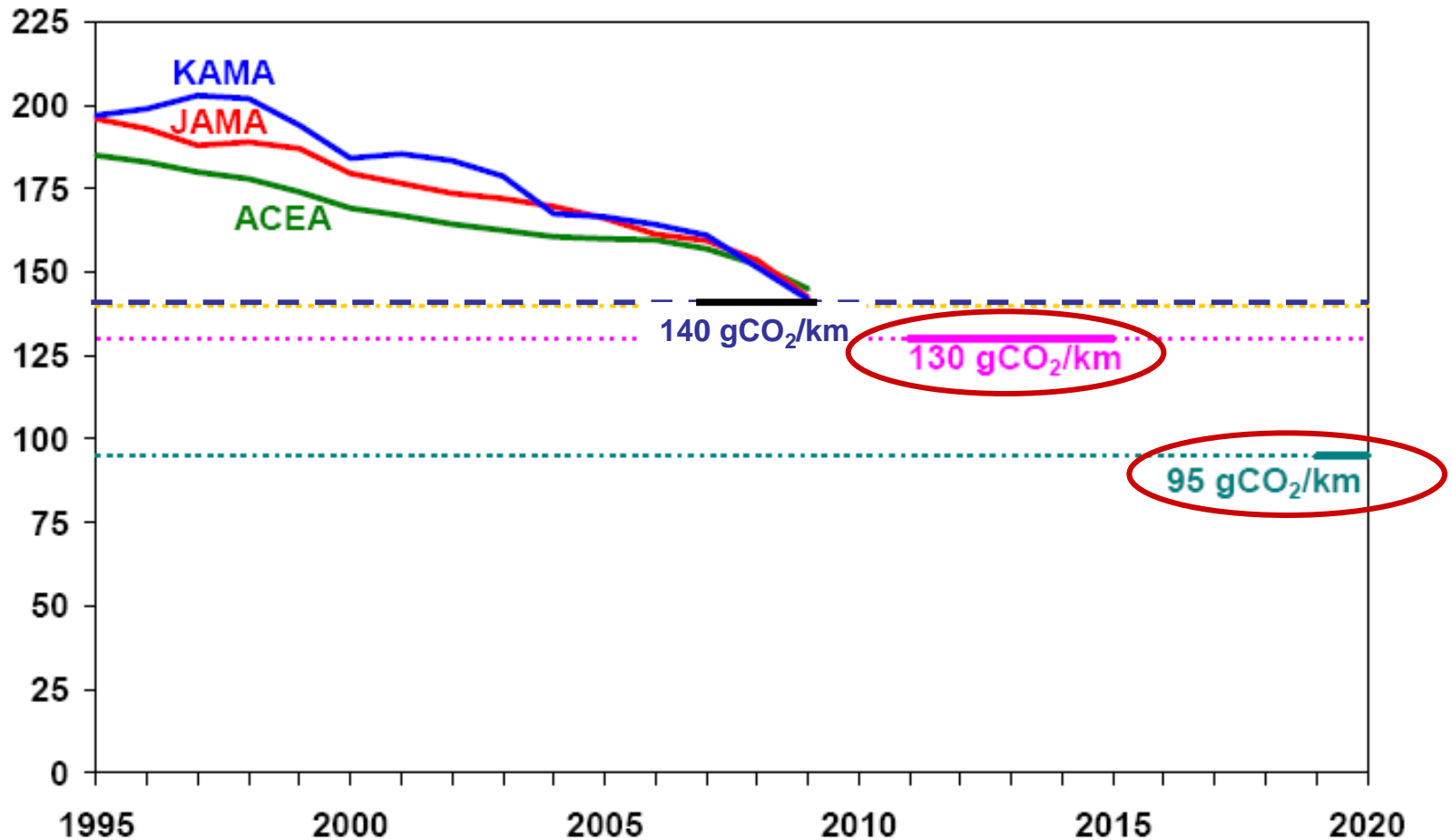
EU-28: Final energy consumption



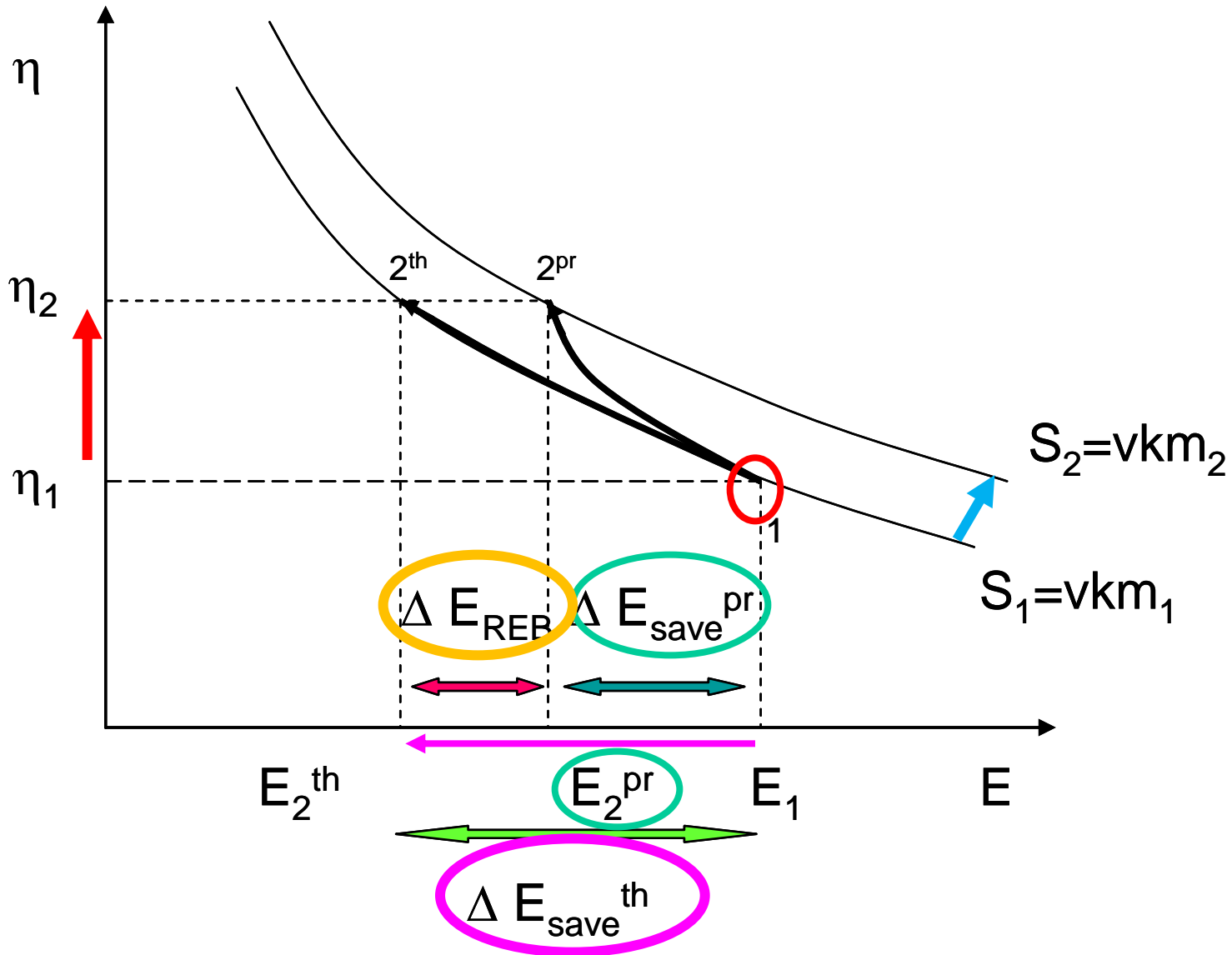


Standards for CO₂ emissions from new passenger cars

Evolution of CO₂ emissions from new passenger cars by the European (ACEA), Japanese (JAMA) and Korean (KAMA) car manufacturer associations

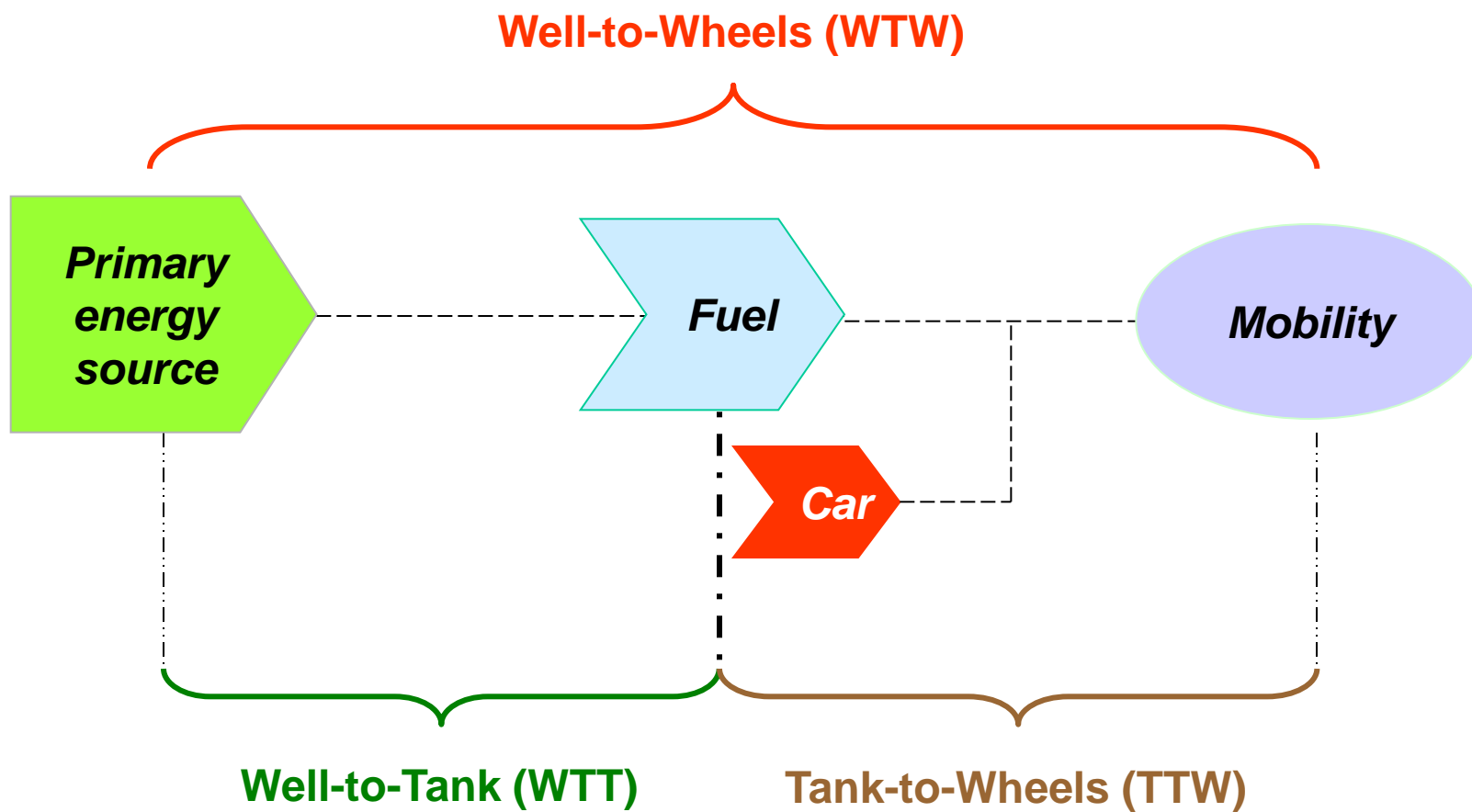


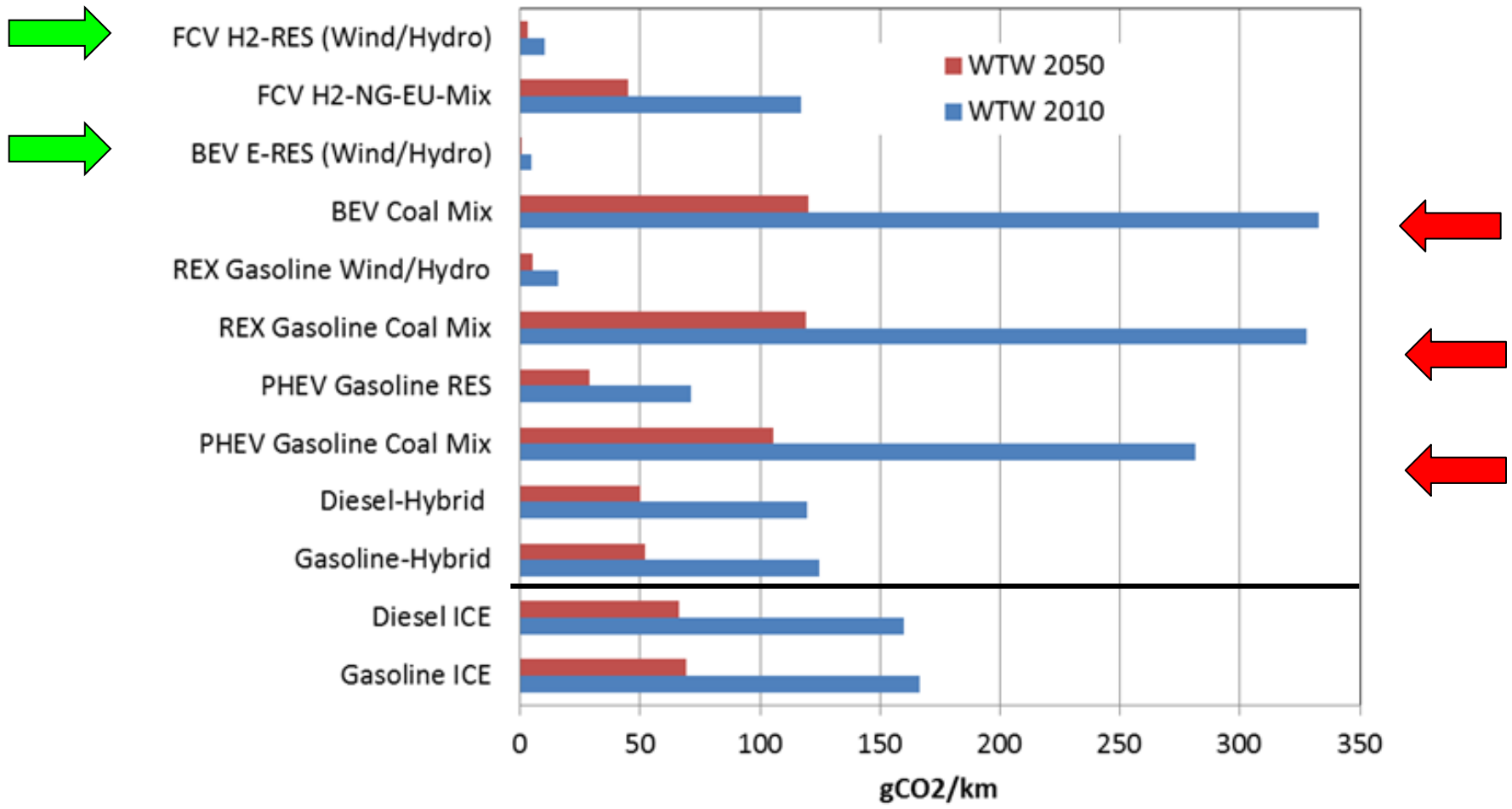
Rebound effect



Different types of electric vehicles:

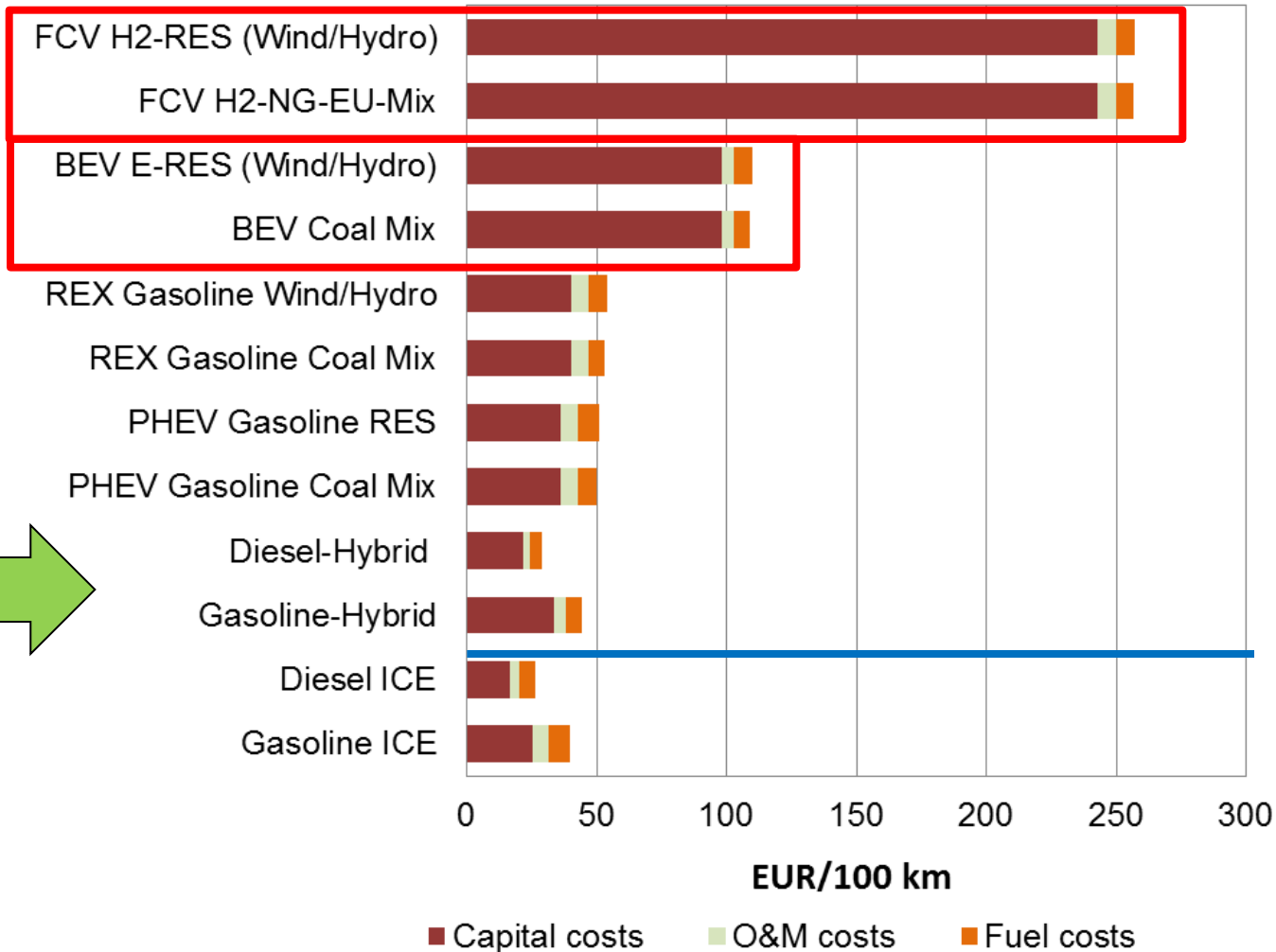
- **Full battery electric vehicles** (BEV): these vehicles have only an electric engine
- **Hybrid electric vehicles** (HEV): it is an ICE vehicles with an electric engine (battery is charged by regenerated energy during braking)
- **Plug-in-hybrid electric vehicles** (PHEV): these vehicles have an ICE and an electric engine (battery can be charged externally)
- **Range extender vehicles** (REX): these vehicles have a full size electric engine and a small ICE which can be used to charge battery. Battery can be also charged on the grid.
- **Fuel cell vehicles** (FCV): these vehicles have a fuel cell and an electric engine. Battery is charged by energy from hydrogen.

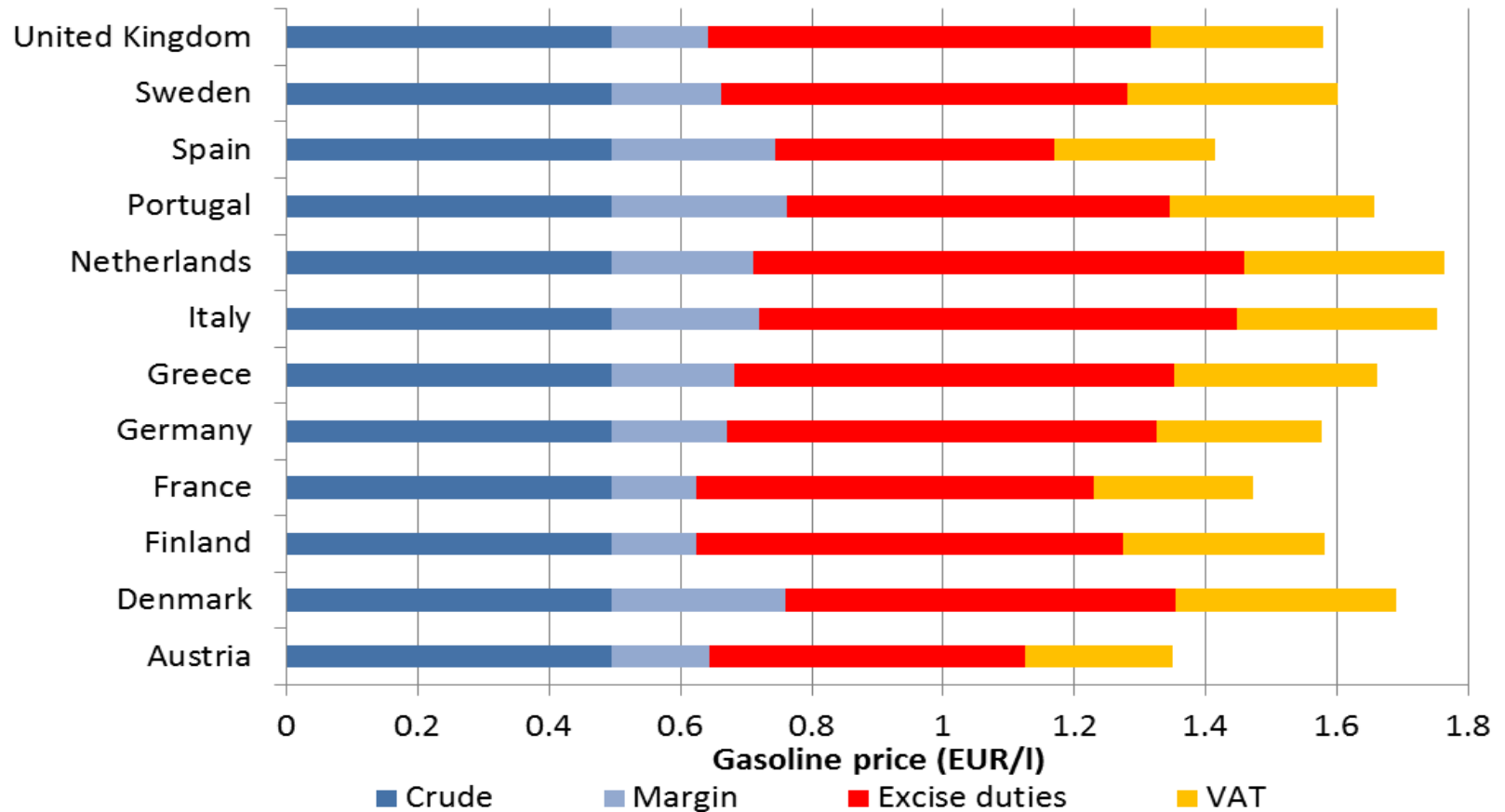




WTW-balance of CO₂ emissions per km driven for various types of EVs in comparison to gasoline and diesel cars, 2010 vs. 2050 (Power of car: 80 kW)

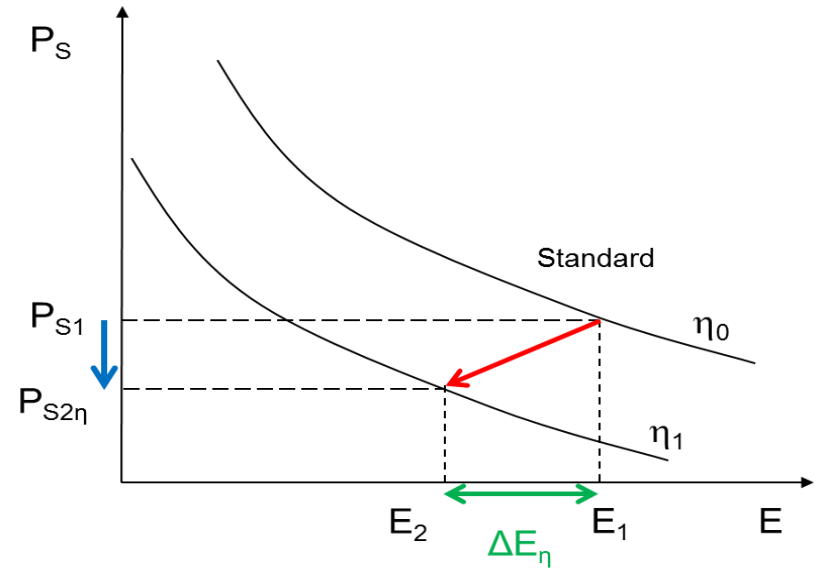
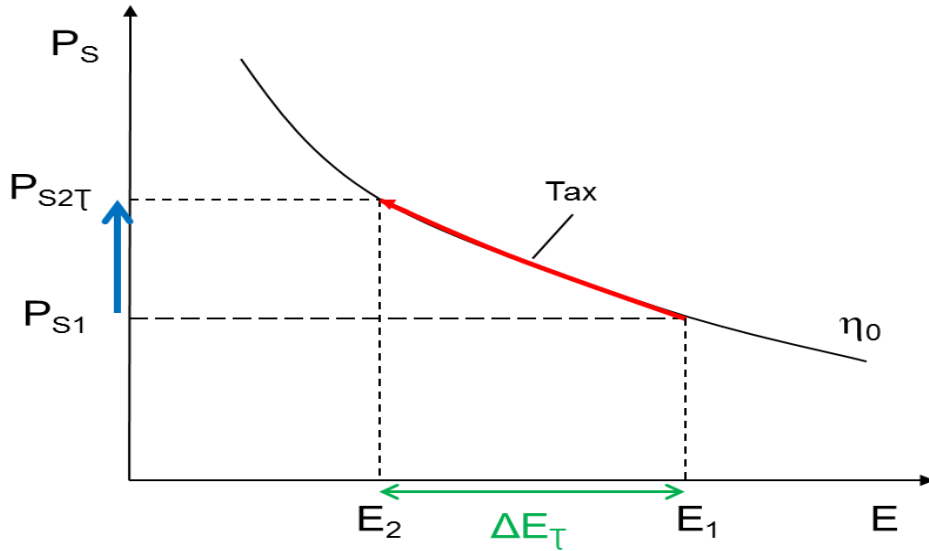
Total costs of service mobility



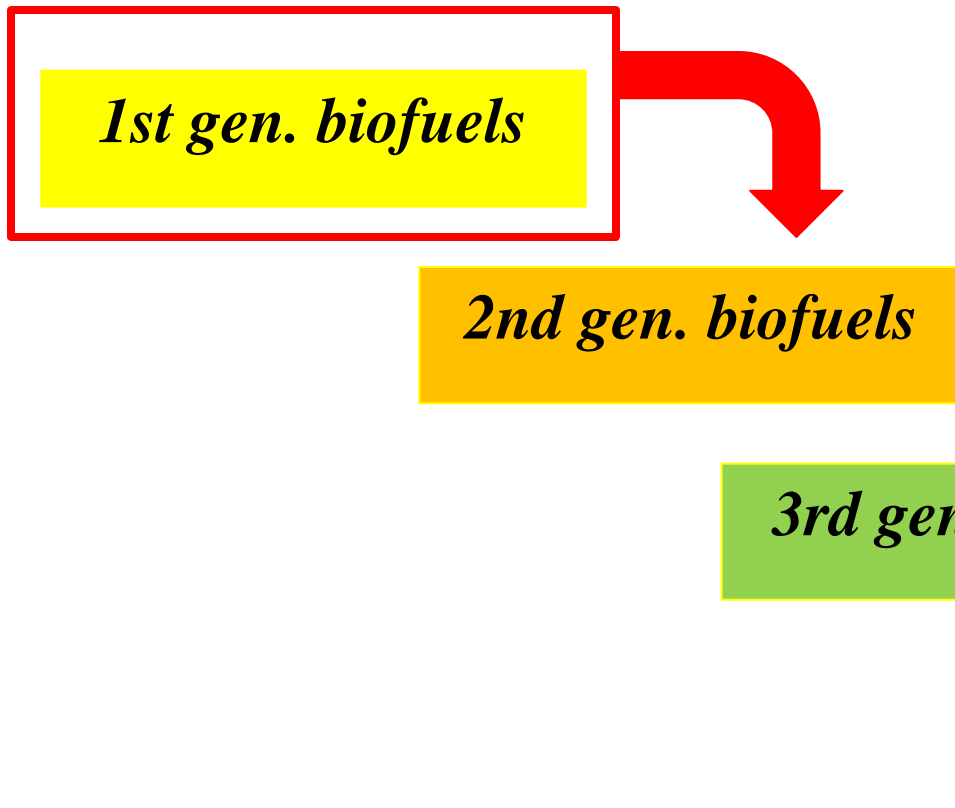


Composition of gasoline prices including taxes in 2013

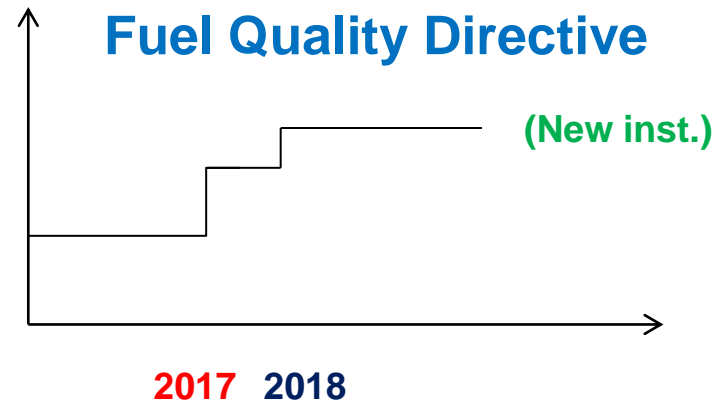
(EEP, 2013)

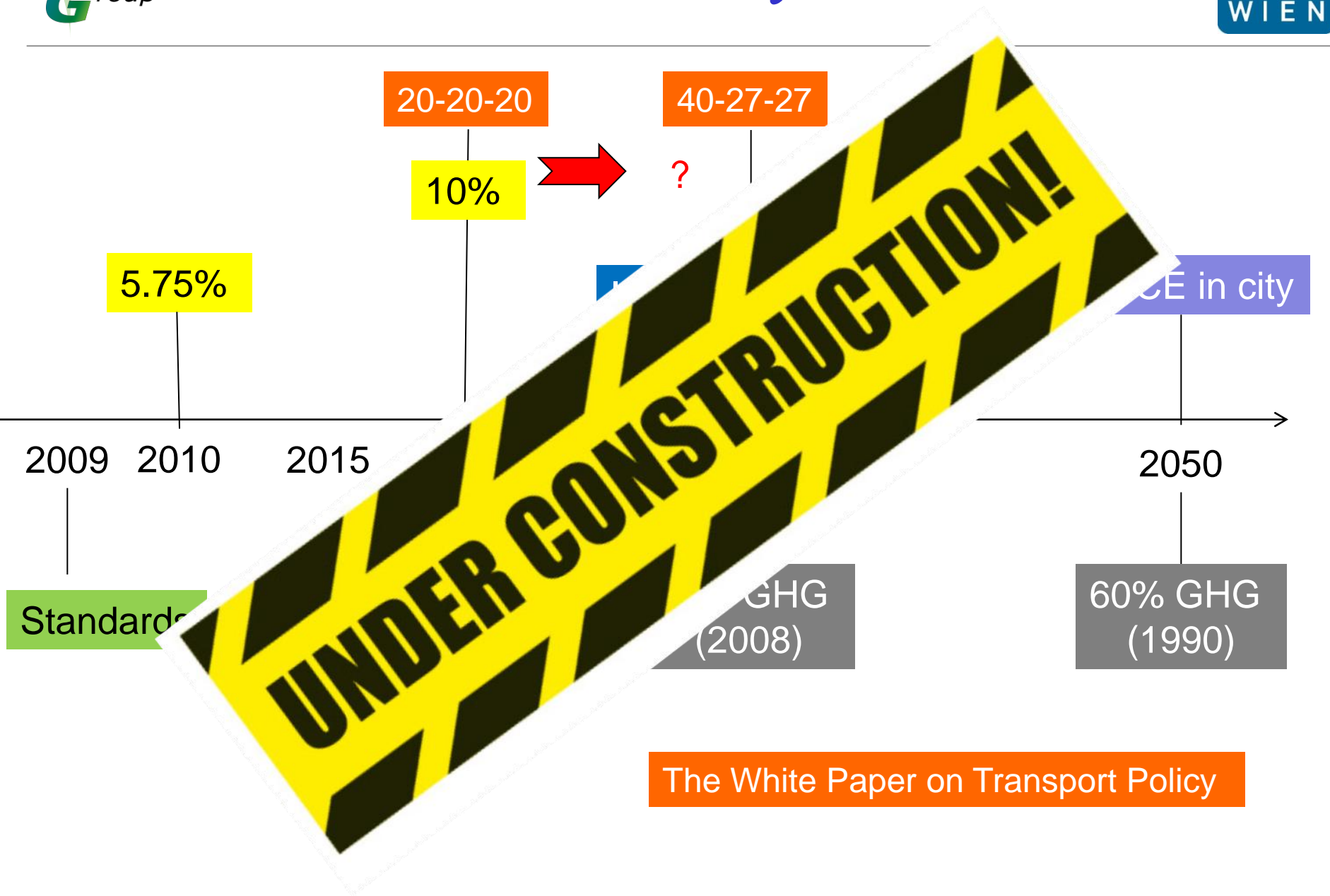


How taxes and standards interact and how they can be implemented in a combined optimal way for society



60%
50%
35%





The White Paper on Transport Policy

- The 2020 climate and energy package (20-20-20)
- The 2030 climate and energy targets (40-27-27)
- BEV and FCV: the major barrier → high investments cost
- Hybrids → bridging technology
- BEV and FCV → RES
- The major uncertainty → technological learning

- Expansion in the use of biofuels – controversy regarding the environmental and social consequences
- No more public support for biofuels from food crops
- Promote the highest carbon saving biofuels
- Post 2020 a new policies for biofuels and the lowering of overall emissions from the transport sector in the EU are needed.

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