

Impacts of EU CO₂ Regulation

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Agenda

- Drivers for EU CO₂ regulation
- Current regulatory framework
- What the future might look like
- Impacts on the automotive sector



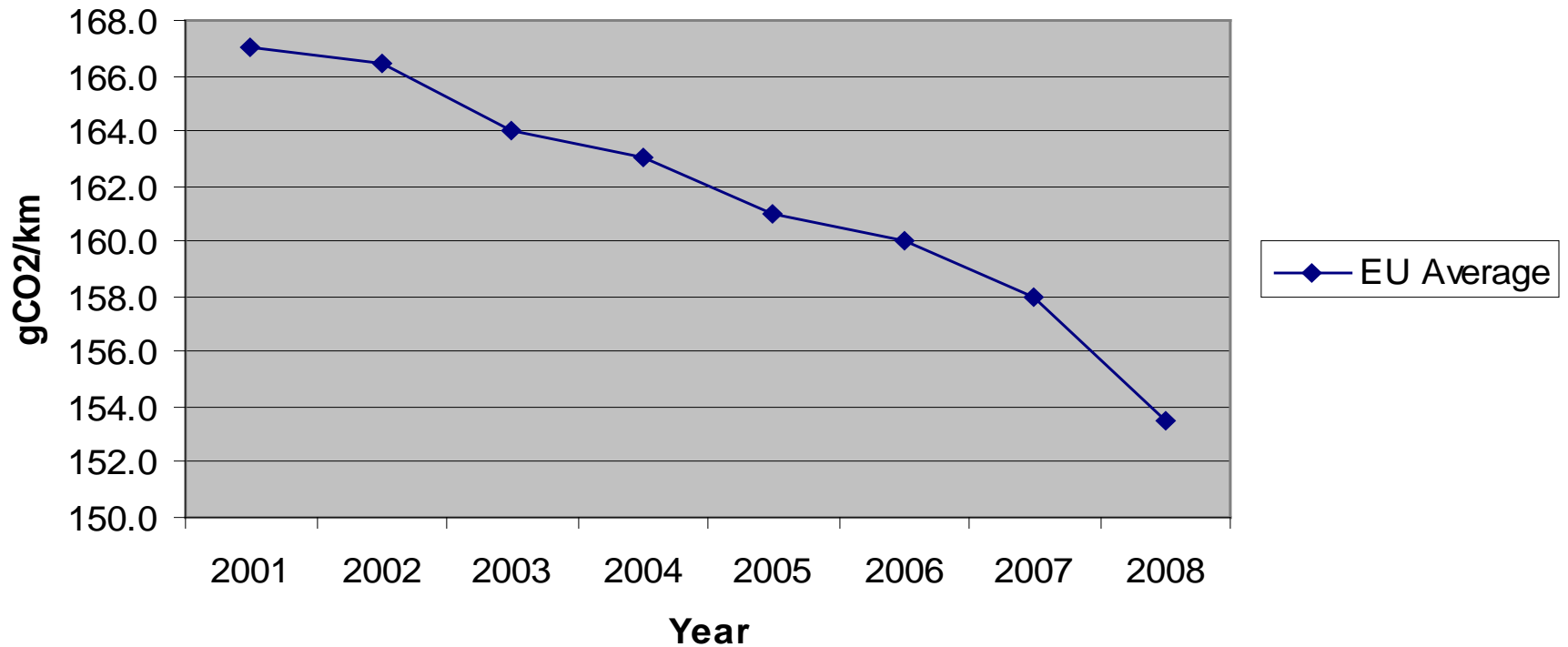
Why did the EU regulate?

- Kyoto
- 2020 Climate and Energy package
- Other factors were not delivering:
 - Pull from customers
 - National taxation
 - Voluntary agreements



Industry was not moving quickly enough

EU Average New Car CO2 Emissions



Regulatory structure

- Currently only covers cars
- Based on tail-pipe emissions
- Near-term target (130g/km by 2015)
- Long-term target (95g/km by 2020)



Regulatory structure (2)

- Gives manufacturers flexibility to decide how to comply,
 - Fleet averages
 - Larger cars “allowed” to emit more,
 - Pooling,
- Provides incentives for alternative technologies:
 - Supercredits
 - CNG / LPG
 - E85 (to a lesser extent)
 - Eco-innovations



What the future might look like

- Regulation of all modes:
 - Van proposal being negotiated, HGVs being considered
- There will be ever lower targets post 2020
- 0g/km?
- Alternative approaches to targets:
 - Tank to Wheel
 - Well to Wheel
 - Whole Lifecycle



Impacts on the automotive sector

- Long term certainty – the agenda is not going to go away
- Increased diversification in technologies
- Up to 2020:
 - Diesalisation
 - ICE improvement
 - Aerodynamics
 - Light-weighting
 - Mild hybridisation



Impacts on the automotive sector (2)

- Post 2020, increasing need for “game changing” technologies:
 - Plug-in hybrids
 - Full electric vehicles
 - Fuel cell vehicles
- Need to invest / demonstrate these technologies now
- EU is not going alone – US, China, South Korea, Japan all moving in the same direction.



Conclusion

- EU regulation driven by environmental imperatives but creates huge industrial opportunities.
- These will only grow in the future.

