The fast-track transition towards electro-mobility... and its blind spots

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The EU driven fast-track to electro-mobility

EVs market share (EU, China, US)

- EU Diesel [%]
- EU EVs [%]
- China EVs [%]
- Japan EVs [%]
- US EVs [%]
1) The regulatory / technical blind spot

The bad seed in
The 1998-2008 CO2 regulation for cars and vans →

Figure 1. Average historical CO₂ emission values and adopted CO₂ standards for new passenger cars in the EU. All CO₂ values refer to New European Driving Cycle (NEDC) measurements.
“Danger ahead
Why weight-based CO2 standards will make Europe’s car fleet dirtier and less safe”

“But ironically, defining CO2 standards by vehicle weight would eliminate weight reduction as a method of generating efficiency improvements, as car makers would not be rewarded for making cars lighter. Lighter cars would be 'punished' with a tougher CO2 target. [...] 

Conclusion: Weight-based CO2 standards eliminate one of the most important paths to CO2 reduction”

(T&E 2007, p. 5).

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<th>Year</th>
<th>Price [EUR incl, tax]</th>
<th>Mass in running order [kg]</th>
<th>Engine power [KW]</th>
<th>CO2 (NEDC) [g/km]</th>
<th>CO2 (RD) [g/km]</th>
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The upmarket drift of the average EU car

Extra weight and power have resulted in +29% of CO2 emissions between 2001 and 2018 ICCT 2017a, 2017b, EEA 2018).
**Av. Premium car**
(Mercedes, Audi, BMW, Volvo)
- 2001: 1525 kg, NEDC 198 CO₂, RDE 214 CO₂
- 2018: 1679 kg (+154), NEDC 131 CO₂ (-34%), RDE 191 CO₂ (-11%), +40% Sales
- 2020 ->: BEVs +600 kg (90 Kw), PHEVs +450 Kg

**Av. Generalist car**
(PSA, Renault, Opel, Ford, Fiat)
- 2001: 1191 kg, NEDC 159 CO₂, RDE 171 CO₂
- 2018: 1291 kg (+100), NEDC 115 CO₂ (-27,6%), RDE 157 CO₂ (-8%), -30% Sales
- 2020 ->: BEVs +300kg (41-61 Kw), PHEV +250 Kg

*Source: EEA*

**EU market share**

**In China:**

Best sold EV in 2020 → **GM Wuling Hongguang MINI**
- 9,2 kwh /
- 13,8 kwh
- $4000-6000
Extra EU 28 trade balance in motor vehicles

2) The single market blind spot
A) Trade liberalization

30% to China
28% to the US
72% of EU 28
95% without UK

Source: Eurostat

EU Custom Union
Free Trade Agreement
EU Enlargement
A race to the bottom:
The growing divide between personnel cost and gross value added in the European automotive sector (EU 27 without Germany)

See also Fana & Villani, JRC, (1) 2021

2) The Single Market blind spot:
B) Internal competition

Source: Eurostat (Annual detailed enterprise statistics for industry - Manufacture of motor vehicles, trailers and semi-trailers)
3) The Single Market blind spot: a polarized stagnating domestic market for new cars

**Southern Europe**
- 25% EU population
- From 28% (2001) to 23% (2018) of EU new cars registration
- 9% of EU EVs registrations (2020)

**Northern Europe**
- 55% EU population
- From 65% (2001) to 71% (2018) of EU new cars registration
- 91% of EU EVs registrations (2020)

**EU13**
- 20% EU population
- From 6 (2001) to 8% (2018) of EU new cars registration
- >1% EU of EVs registrations

**European Union**
- Member States
- Recent Members (May 2004)
- European Continental

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