

Assessment of competitiveness impacts of post-2020 LDV CO₂ regulation

Conference "Driving road decarbonisation forward"

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Introduction

Scope and objective

Objective:

- › Assess possible impacts of **post 2020 EU LDV CO₂ legislation** on competitiveness of affected sectors in Europe

Three elements of competitiveness:

- › Cost competitiveness
 - micro-economic perspective based on costs of compliance
- › Innovation
 - impact of R&D resources on meeting targets
 - impact of legislation on R&D resources
- › International competitiveness
 - macro-economic perspective
 - impacts on trade flows and cross-border investments

Introduction

Post-2020 LDV CO₂ legislation

- › No Commission proposal yet
 - identify possible competitiveness impact pathways
 - dependence on choices with respect to target and modalities
- › Relevant elements of the legislation:
 - **Metric: TTW CO₂ vs. WTW CO₂ / TTW energy / WTW energy**
 - **Target level**
 - › relative stringency compared to legislation in other regions
 - **Target function**
 - › utility parameter: mass vs. footprint
 - › shape and slope of target function
 - **Modalities**
 - › phase-in, pooling, super credits, eco-innovations, trading / banking and borrowing, combining passenger cars and (part of) LCVs in a single target, including mileage weighting and/or embedded emissions (vehicle life cycle), excess emission premiums

Methodology

Focus

- › Explore in a detailed way:
 - mechanisms through which Regulations impact on business
 - whether differential impacts on EU or non-EU industry
- › Focus on main affected sectors
 - automotive manufacturers
 - automotive suppliers
 - energy industry
 - (professional) end users
- › Focus on EU vs. other regions
 - NOT on competition between EU manufacturers
- › Industry stakeholders involved through:
 - questionnaires (all 4 sectors)
 - workshop with OEMs and automotive suppliers

Methodology Perspective

- › Assessment approached through two cases:
 - EU manufacturers vs. competing manufacturers from other regions
 - EU manufacturing vs. manufacturing in other regions

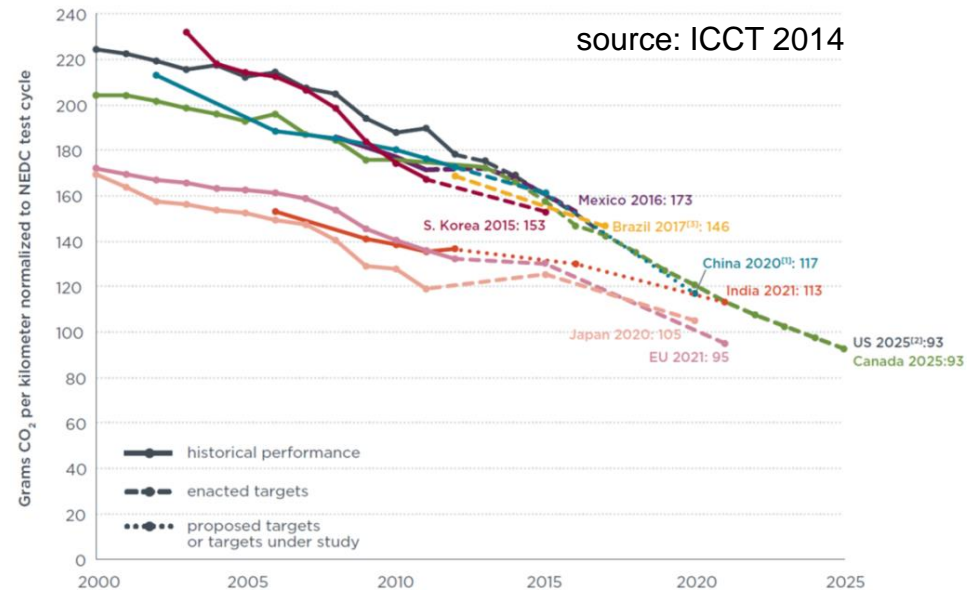
- › EU manufacturing
 - EU = production locations for vehicles, components and materials in the EU

- › EU manufacturers
 - Different definitions possible
 - Attempt made to draw conclusions that are robust under different definitions

Cost competitiveness

Important factors

- › Effective stringency of targets on EU and non-EU manufacturers
- › Cost of similar compliance mechanisms for EU and non-EU manufacturers / industry
- › Stringency of EU regulation compared to other regions
 - affects costs through economies-of-scale



[1] China's target reflects gasoline vehicles only. The target may be higher after new energy vehicles are considered.
 [2] US standards: GHG standards set by EPA, which is slightly different from fuel economy standards due to low-GWP refrigerant credits.
 [3] Gasoline in Brazil contains 22% of ethanol (E22), all data in the chart have been converted to gasoline (E00) equivalent
 [4] Supporting data can be found at: <http://www.theicct.org/info-tools/global-passenger-vehicle-standards>

Cost competitiveness

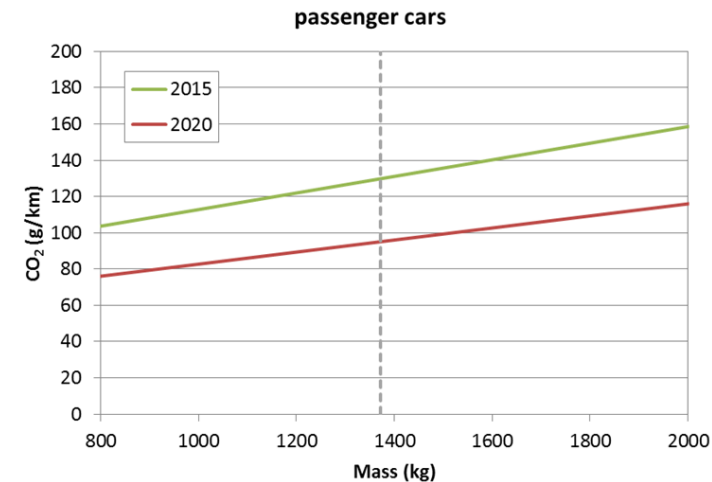
Targets and compliance mechanisms

› Manufacturer target and reduction effort defined by:

- target function
- sales portfolio / average utility of OEM
- additional modalities
 - › pooling, banking & borrowing, ...
 - › eco-innovations, super-credits

› Main compliance mechanisms:

- technical options
 - › improve ICEV efficiency
 - › increase AFV share (NGVs, BEVs, PHEVs, FCEVs)
 - › eco-innovations
- non-technical options
 - › change vehicle design (affecting utility) or portfolio (affecting average utility)
 - › use test flexibilities, pay excess premiums, ...



} + distribution over models / segments

General conclusions

All affected sectors



- › Legislation **will not directly affect competitiveness** of EU car manufacturing, component manufacturing and fuel or energy supply industry

- › direct meaning: through direct impact on the costs factors of production



- › For professional end-users some possible direct competitiveness impact but small

- › legislation affects vehicle operating costs, which are part of the cost of doing business



Cost competitiveness

Vehicle manufacturer & supplier perspective

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- › Many **indirect pathways** that could impact cost competitiveness for **OEMs and component suppliers**
 - access to and costs of materials
 - › could be different for EU and non-EU OEMs
 - possible regional advanced powertrain component cost differences
 - › depend on relative stringency of legislation and if they are mainly made outside EU
 - regional labour cost differences - impact of unknown sign
 - differences in tariffs, cost of capital goods and transport, and sales volume to recoup R&D costs

Cost competitiveness





Vehicle manufacturer & supplier perspective

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- › Likelihood and size of indirect impacts depend on:
 - › Design of the legislation
 - › stringency of target, target function
 - › Differences in resources and capabilities of EU companies and sectors from non-EU competitors
 - › ability to manufacture vehicles with CO₂-reducing technologies at competitive cost
 - › Detailed decomposition of possible pathways in report helps identify concrete impacts for post 2020 legislation
 - › Large net impacts unlikely due to many compliance mechanisms, resources and capabilities

Cost competitiveness

Vehicle manufacturer & supplier perspective

Possible **cost competitiveness** impact on EU OEMs and component suppliers relate to:

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 - › economic / financial situation of EU automotive industry
 - appears more strongly affected by economic crisis than in other regions
 - will that remain the case to 2030?
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 - › EU OEMs have larger share in premium market
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 - › Technology position:
 - Non-EU OEMs and suppliers stronger position in electric powertrains
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 - › Economies of scale
 - If EU legislation more stringent than other regions
- 
 - › Lead time between announcement and target year affects impacts

Innovation competitiveness

Vehicle manufacturers & suppliers

Innovation competitiveness impacts on EU OEMs and component suppliers may relate to:



› R&D on efficient ICEVs and AFVs at the expense of other innovations



› Innovation readiness: non-EU OEMs and suppliers benefit from “first mover” advantage in electric powertrains



› Possible EU shortage of R&D personnel skilled in new technologies



› Enhanced trend of OEM RDI externalisation to Tier 1 suppliers and joint R&D with other OEMs

International competitiveness

Vehicle manufacturers & suppliers



- › **International competitiveness** impacts partly depend on cost competitiveness impacts



- › Strong EU position in cars and components but not LCVs



- › Little change in trade competitiveness



- › Many positive or negative second-order effects possible

- Impacts possible in narrow defined markets
- EU may lose competitiveness in petrol but gain in diesel
- Asian suppliers may benefit for electric components









- › Possible extra inward FDI flows of unclear magnitude



- › Likely to be trade-neutral as stringency will be broadly similar in the EU and main competing regions



General conclusions


Fuel supply industry

-  / 
 - › Reduced profitability of EU refineries (if capacity is not adjusted)
 - › due to declining demand for petroleum fuels putting pressure on the prices of fuels, and
 - › reduced refinery utilisation rates, leading to an increase in costs per unit production
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 - › EU legislation may exacerbate already increasing competition between EU refineries and new refineries in other regions
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 - › No competitiveness impacts on fuel / energy distribution sector
 - › as these operate and compete within EU only
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 - › Ability of EU companies to deal with changes in the EU market depends on their position in international markets
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 - › Reduced demand for petroleum-based fuels could lead to negative economic impacts on EU fuel production and supply sector, including a significant loss of jobs and value added
 - › not competitiveness impacts

General conclusions

Professional end users

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- › Direct impacts in principle possible as result of Δ TCO
 - › Only for EU companies providing products or services competing in markets with products or services from non-EU companies
 - › If different regions have LDV CO₂ regulations with similar stringency, EU companies will benefit more as EU fuel prices are higher
 - › None for EU-based SMEs, which extensively use LDVs, as they mostly don't compete with non-EU companies

 - › Overall no significant competitiveness impacts expected
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