



Initial Consulting

Exploring future technology strategies to profit from CO₂ challenges

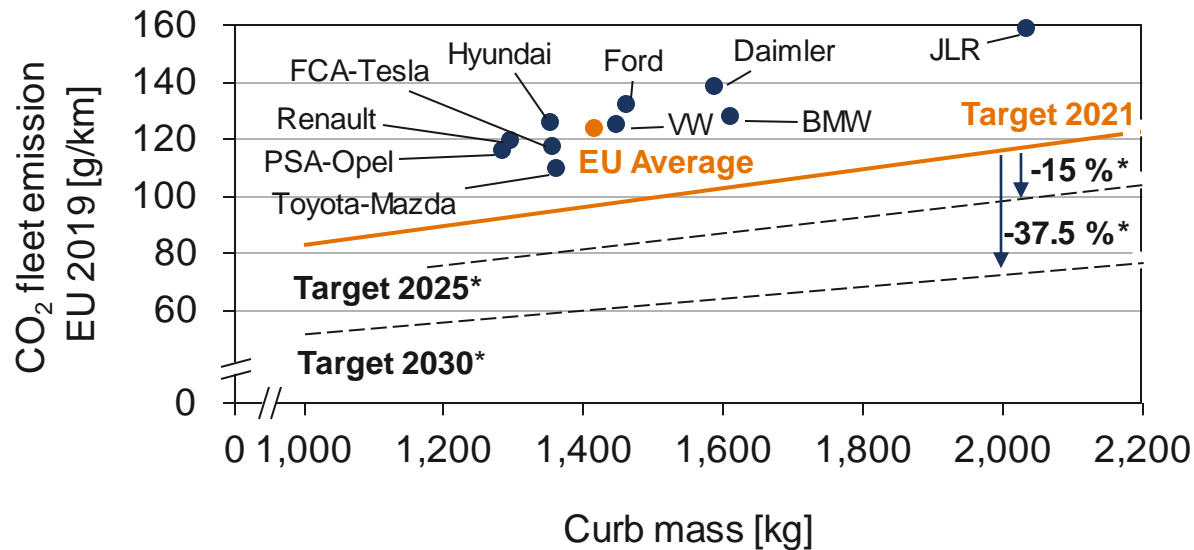
Author: Christian Harter, Ingo Olschewski

The CO₂ challenge for cars technologically narrows to hybrids and BEV, whereas it is an open field for heavy-duty trucks.



Cars

- » Very high ambition levels have been set for the target years 2025 and 2030.
- » Target compliance 2021 is within reach.



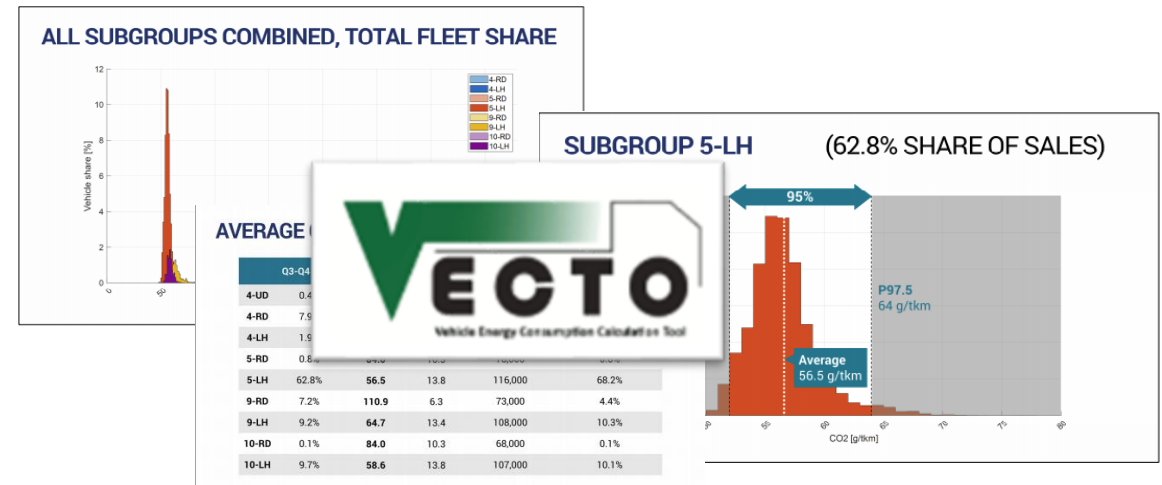
*Targets 2025 and 2030 are indicative, due to changed target definition approach

- » **Technology strategies of OEM indicate a strong focus on battery-electric drivetrains.**
- » **Opportunities for suppliers to contribute in finding optimum solutions for (P)HEV and BEV.**



Heavy-duty trucks

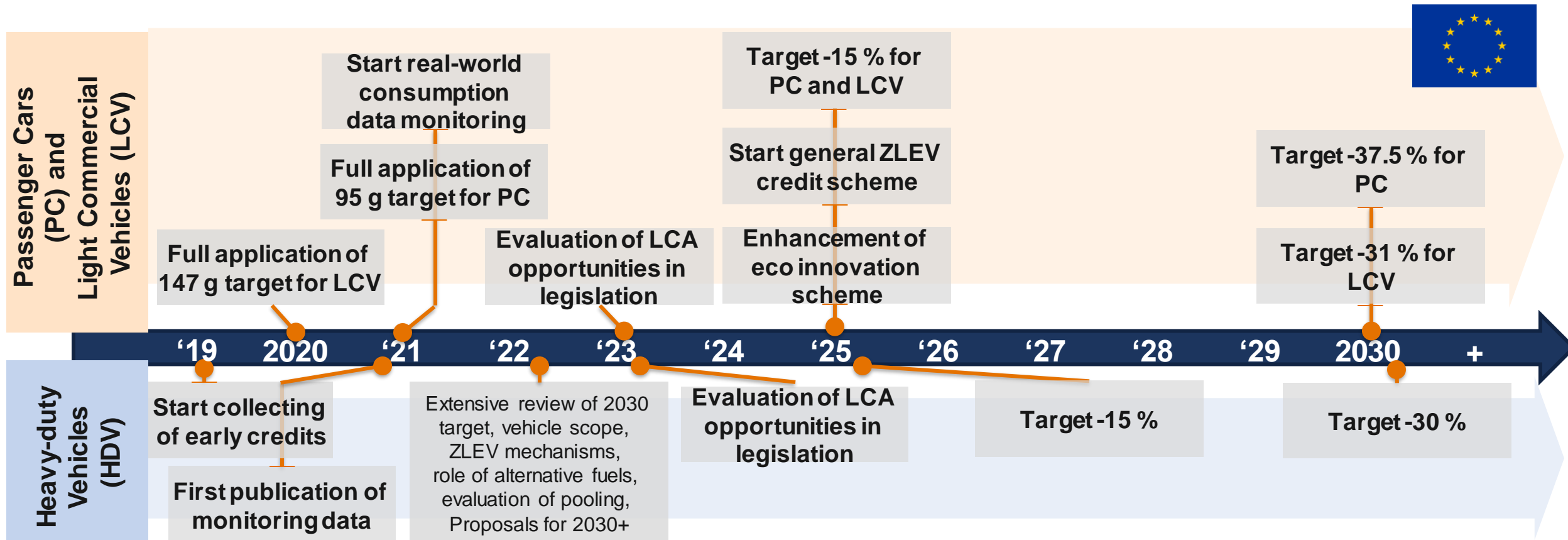
- » Initiation of first legislative CO₂ standards for trucks ever.
- » Currently, the baseline is set by monitoring current CO₂ emissions.



- » **Legislative CO₂ standards are new to the truck industry: No predominant strategy**
- » **Larger diversity of drivetrain types expected: Synfuels, Hybrids, PHEV, BEV, FCEV, etc.**

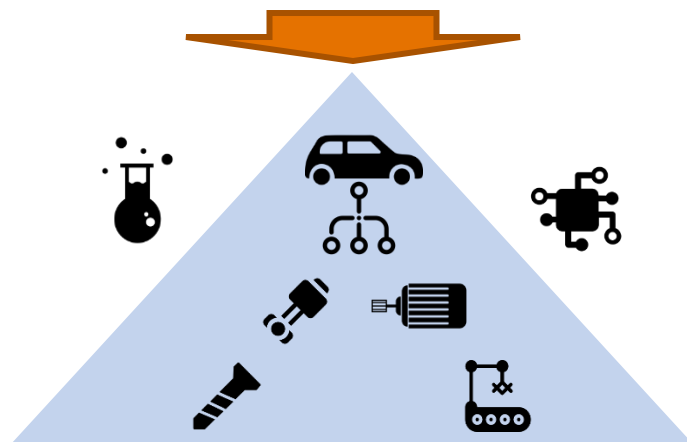
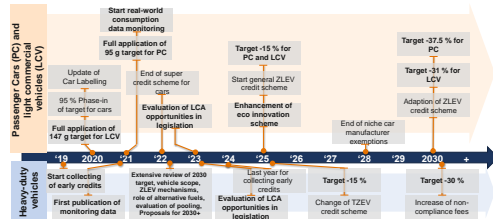
Source for HDV emissions: ACEA

CO₂ regulation proceeds on a high pace for cars and trucks and creates a complex set of requirements



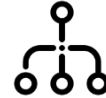
Several challenges and opportunities exist along the value chain for relevant players in the automotive industry

- » Regulation path places direct responsibility on OEM
- » However, all members and partners of the automotive value chain are affected



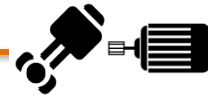
Vehicle manufacturers (OEM)

- » Use of strategic elements and flexibilities in CO₂ legislation
- » Cost-efficient target compliance strategies



System suppliers

- » Methodologies to anticipate OEM strategies / customer demand
- » New product fields fostered by legislation



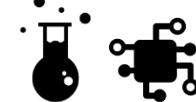
Component specialists

- » Conversion of existing automotive competences in new product fields
- » Adaption of existing competences to automotive business



TierX – Parts and production specialists

- » Own contribution to solve CO₂ challenge
- » Opportunities to address technological bottlenecks of system suppliers and OEM in their CO₂ strategies



Industry externals and partners

- » Exploration of approaches to benefit from CO₂ challenge.

A consistent set of proven fka methodologies and tools supports our clients in solving their future challenges



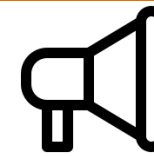
From idea to market...



*Analysis /
Ideation*



*Concept /
Development*



*Marketing
/ Communication*

In-depth CO₂ technology radar

Market foresight using
CO₂ modeling

Competition analysis / SWOT

Product Portfolio Analysis

Experience in management
of complex innovation projects

Flexible access to fka full vehicle
engineering expertise

Early CO₂ / LCA evaluation
of designs (E2P approach)

Transparent deduction of
customer benefits
(CO₂, costs, performance)

Aggregation of component
CO₂ effects using fleet modeling

- » **Mastering the full process from ideation to marketing is indispensable to benefit from CO₂ challenge.**
- » **Proven fka methodologies and tools are available on each stage and may be individually customized.**
- » **The unique fka full vehicle expertise is the reliable backbone for each consulting project.**

Within our initial consulting on the CO₂ challenge, we can support you in defining strategic options for action

Content (exemplary, depending on customer requirements)



- » **Introductory presentation by fka on CO₂ challenge (external perspective)**
 - » Regulation of various vehicle classes
 - » EU vs. global markets
 - » Highlighting of elements that can potentially influence specific business
 - » Technological bottlenecks in dominant technology paths.

Interactive workshop



- » **Joint discussion and definition of project initiatives (internal perspective)**
 - » Customer presentation: Status quo of exploitation of CO₂ / efficiency technologies
 - » Joint exploration of new perspectives of legislation vs. internal competences
 - » Development of a first technology/business approaches to maximize participation in CO₂ challenge

Approach



- » **Virtual meeting** (with tools for interactive and collaborative working)
 - » fka participants: 2 consultants, further fka technology experts can participate on demand
 - » Customer participants: Ideally 5 – 7 participants from different BUs
 - » Scope: Appx. 4 hours



- » **Benefit from a comprehensive expertise in the field of CO₂ and emission – fka has been accompanying legal and technological developments from the start.**



- » **Identify opportunities for product portfolio expansion and growth areas**



- » **Challenge and discuss your current perspective on the CO₂ challenging**



- » **Definition of starting points for internal projects and strategic initiatives**

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fka 
CREATING IDEAS &
DRIVING INNOVATIONS

Thank you for your attention.

