Low hanging fruits: Lightweight Hang-on parts

- Market penetration of lightweight hang on parts is below 20%
- Changing from conventional design to lightweight design does not need a full re-engineering of the car
- Lightweighting potential of ~50 kg per car [1]
Low hanging fruits:
Lightweight Hang-on parts

• 50 kg on a car reduces the CO₂ emissions by ~4g CO₂/km [2,3]

• Reduces the CO₂ emissions during the lifetime of the car (200 000 km) with 800kg

• If all new cars registered in Europe during a year (15 million) would reduce the weight by 50 kg, it would reduce the total CO₂ emissions by 12 million tons over their full life span.
Low hanging fruits: Lightweight Hang-on parts

References:


3. CO2-potential of lightweight designed cars, Rohde-Brandenburger, Obernolte, Volkswagen AG. PowerPoint submitted to WP29 as document WLTP-DTP-LabProclICE-065

Calculations:
Diesel: 1l/100km => 26.5 g CO2/km. [3]
Weight reduction of 100 kg => 0.29 l/100km if gear ratio is adapted to achieve equal performance. [2] (Table 2)
50 kg of weight reduction then corresponds to 0.145 l/100km which corresponds to 3.84 g CO2/km