

EURO 7

How should vehicle manufacturers adapt their braking systems?

A comprehensive research study for BASt.



What's EURO 7?

With the EURO 7 regulation, the European Commission aims to reduce the emission of fine particles generated by vehicle braking systems.

By 2018, dust from brakes and tyres reached 70% of traffic-related PM10 particles.

Timeline

-Until 2035: limit of 7 mg/km PM10 for combustion vehicles and 3 mg/km for electric vehicles.

-After 2035: limit of 3 mg/km PM10 for all vehicles.

Our Two-Phase Study



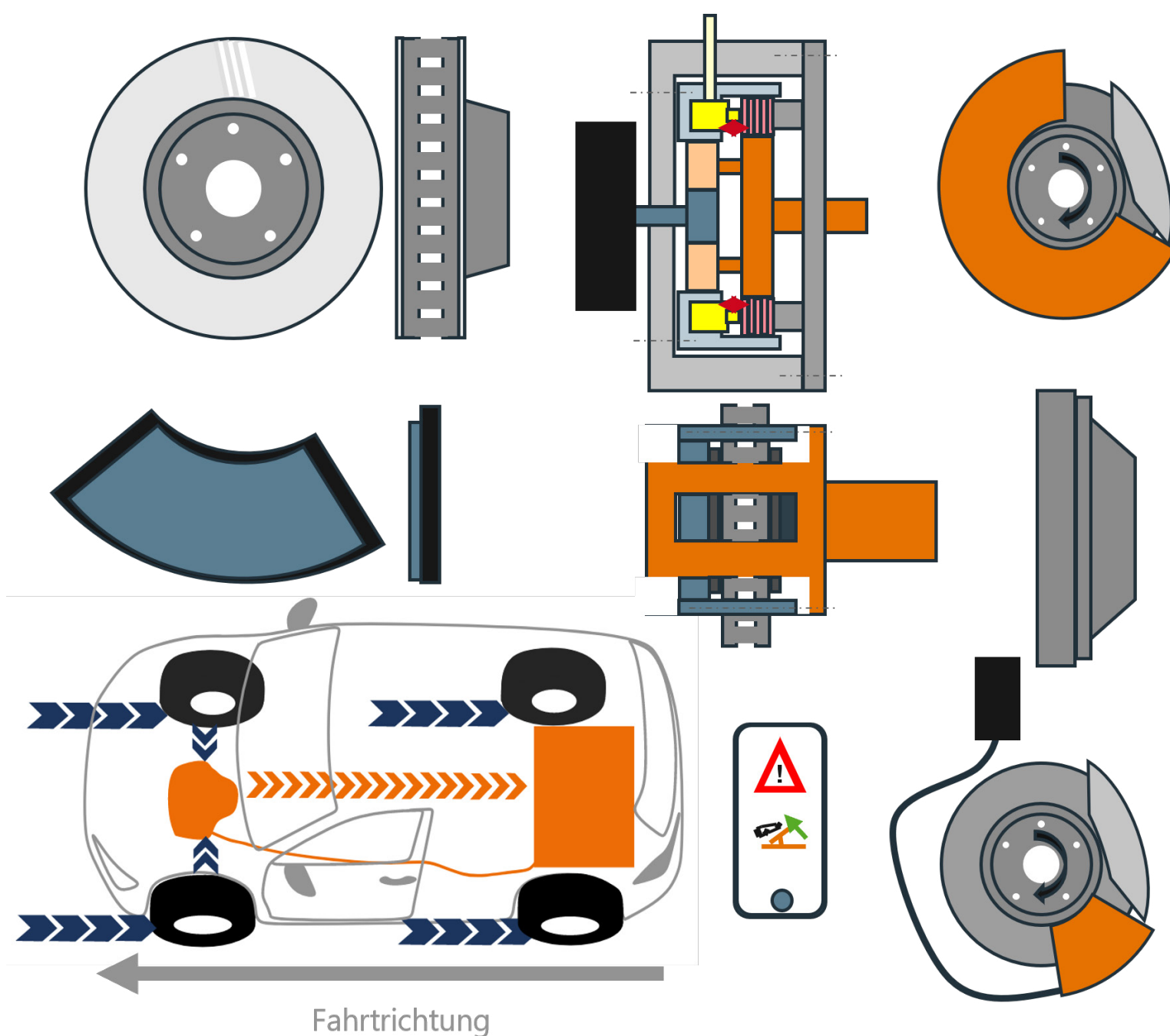
Analysis: Collecting and assessing current and future braking technologies.

Evaluation: Comparing systems using a realistic matrix based on vehicle segments and powertrains.

6 Technologies Evaluated

Out of 16 initial concepts, 6 were selected for final evaluation (TRL ≥ 8)

- Hard-metal coated (HMC) brake discs
- Carbon-ceramic (CC) discs
- Alternative brake pads (NAO)
- Drum brakes (Rear axle)
- Filtration systems (Passive and Active)
- Regeneration and Electromechanical Braking (EMB)



Key Conclusions

Combustion: The most cost-efficient path is combining Alternative Pads (NAO) + Hard-Metal Coated (HMC) discs (complies without major architecture changes).

Electric (EV/HEV): Energy recuperation alone might suffice for some segments. Heavier segments will require HMC discs or modified pads.





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