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Climate Neutral

Whether passenger cars, commercial vans or heavy trucks: in 2030 the European Union will probably have the strictest CO₂ limits for vehicles in the world. And that's not all: by 2050, we must succeed in both massively reducing greenhouse gas emissions from the transport and mobility sectors and creating carbon neutral processes using renewable energy sources. Only in this way will we achieve the climate targets set out in the Paris Agreement. No doubt that this concerns emissions along the entire energy chain. From the extraction of the necessary raw materials over the production of the energy stores and carriers to their end use or recycling – all levels must be included. A recently completed study by the Research Association for Internal Combustion Engines (FVV) analyzes the three main technology paths along which this goal can be achieved: firstly, by using regeneratively generated electricity in battery electric powertrains; secondly, by using hydrogen as an energy carrier in fuel cells; and thirdly, by using climate-neutral electric fuels in the internal combustion engine.

The more than 40 experts involved from the mobility, transport and energy sectors have come to some surprising conclusions. A detailed examination of all investments reveals that the mobility costs before taxes and insurance can be roughly identical in all three energy paths – provided that technically and economically wise decisions are made. However, each

path has different investment priorities and risks. The total investment requirements range from 300 to 1,700 billion euros. By way of comparison, Germany's Gross Domestic Product (GDP) stood at 3,263 billion euros in 2017. In reality, however, we are talking about much more money, because without an efficient and top-performing automotive and engine industry our country would be significantly less wealthy, and the necessary investment would therefore be much less favorable to GDP.

Based on this scenario, I urgently call for cross-sectoral and holistic thinking and for all three energy paths to be pursued. It would be presumptuous to predict the technical evolution and thus the costs of specific technologies over a period of more than 30 years. The same also applies to customer behavior and market acceptance. Because no matter how much money we invest in infrastructure and the development of advanced powertrains: If these technologies fail to take over the market, we will definitely fail to meet our climate goals.

My request to you as an engine developer: Stand up for a path of reason, even if, as I know from my own experience, it sometimes takes effort to assert yourself in the political discourse with technical and economic arguments. Nevertheless, it is worth it. Because if we do it right, climate-neutral mobility can be achieved with reasonable investments.