

FVV Newsletter | December 2020

We all from the FVV Team would like to take this opportunity to thank all members, partners and friends for the exciting challenges in our joint work on industrial collective research projects, your continued trust in us and the good cooperation in this memorable year. Within the framework of the meta analysis on [LCA studies on alternative powertrain technologies](#), the FVV Board put forward four propositions for discussion, which show: There is not one single solution for the climate neutrality in the mobility sector:
What really matters is an intelligent mix of alternative powertrains and fuels!

With this in mind, we will continue to "pull together" next year and research a wide range of future topics in all our [research areas](#), such as efficiency & performance, hybrid and fuel cell powertrains, zero-impact emissions, new combustion processes and hydrogen. We are also pleased to contribute to making the public debate more factual and to providing further orientation with both the results of a smaller study on possible CO2 effects of an additional demand for electricity through electromobility, which frontier economics is currently conducting for us together with ifw Kiel, and the FVV Fuel Study IV.

The FVV is keen for companies to get involved. In this context, we are looking forward to the next year and would like to invite you to continuously contribute pioneering ideas to the FVV Research Community.
We wish you and your loved ones a Merry Christmas and good luck, health and success for 2021!
Dietmar Goericke - Martin Nitsche - Matthias Zelinger
and all of the FVV Team



Hybrid powertrains | Ultimate efficiency engine: FVV Researchers significantly increase fuel efficiency in the real world of road transport

Four research institutes in Aachen, Braunschweig, Darmstadt and Stuttgart have investigated in the project «ICE 2025+» Ultimate System Efficiency» (PG2 «Combustion SI+ I 1307) how close we can come to the ultimate system efficiency of combustion engines in hybrid powertrains. **Their conclusion: if available prime mover SI engine technologies are optimally matched to each other, more than 40 percent of the energy bound in the fuel can be used in real road transport. Synthetic fuels (e-fuels) can lead to even higher energy efficiency rates due to their better combustion properties.** The results of the research project are particularly relevant to the discussion on the benefits of synthetic fuels (e-fuels), emphasises Professor Michael Bargende, holder of the Chair of Vehicle Drives at the Institute of Automotive Engineering at the University of Stuttgart: "Many analyses assume a maximum efficiency of the combustion engine of 25 percent. Research now shows that, with a suitable design of engine, transmission and hybrid components, more than 40 percent can be achieved in real driving operation. When powered by synthetic fuels, hybrid powertrains are thus not only carbon-neutral, but hardly differ in their overall efficiency from alternative powertrain systems if the synthetic fuels are produced at locations with significantly more hours of sunshine or wind loads than would otherwise be possible in Germany."

The project is close to completion and will be presented at the 2021 Spring Conference. Meanwhile, the FVV is already planning a follow-up project. The project «ICE 2030+» (PG2 «Combustion SI+ I M2820) focuses on the use of hydrogen to increase energy efficiency. Other high-efficiency technologies such as extremely lean combustion will also be investigated.

[Learn More](#)



THEMIS News

Save the date:
FVV Spring Conference & Partner Events 2021

THEMIS calendar:
FVV meetings in January

[Learn More](#)

NATIONAL PLATFORM FUTURE OF MOBILITY



NPM expert committee publishes recommendations regarding the use of plug-in hybrid electric vehicles (PHEV)

At the request of the Federal Government, a task force of the National Platform Future of Mobility drew up a report with recommendations for optimised electrical efficiency of plug-in hybrid vehicles (PHEV) and presented it in October: PHEVs could be trailblazers for electromobility and – by using alternative fuels – part of the drive portfolio of the future. Thanks to PHEVs, the transformation of the existing value networks could take place in a more socially acceptable way. Customers can be introduced to electromobility gradually and without concerns about short ranges. Based on 3.3 million PHEVs in use in Germany, savings of approx. 2.5 to 2.9 million tons of CO2 equivalent can be achieved in 2030.

[Learn More](#)

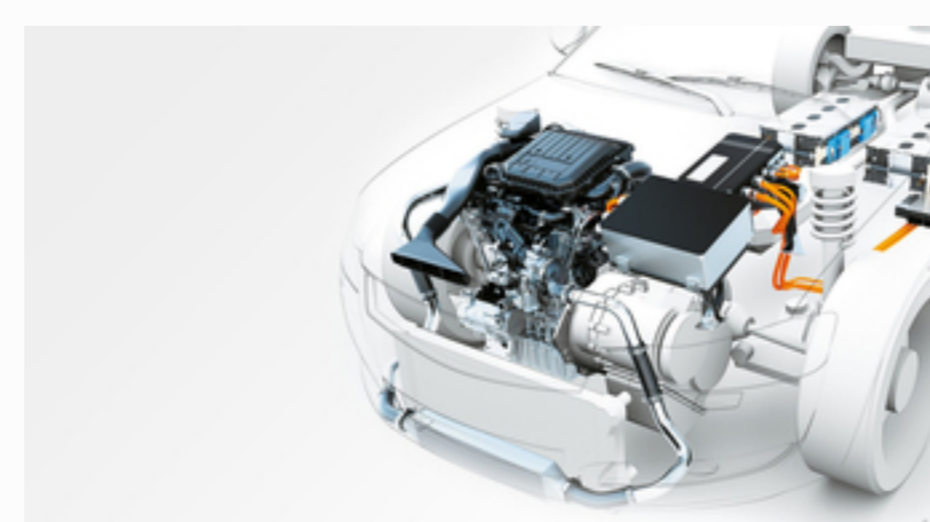
Achieving climate objectives in transport: Ways to electrify heavy-duty commercial vehicles and to use alternative fuels

Road freight transport is responsible for almost one third of domestic greenhouse gas emissions. In order to make its contribution to achieving climate change targets, further measures are needed for this sector. In particular, there is clear pressure for action in the electrification of heavy goods transport and the development of the potential of advanced biogenic and electricity-based fuels. Two new reports by the NPM's Working Group 1 Climate Protection in Transport identify ways of promoting the market ramp-up of electrified heavy-duty commercial vehicles and advancing the controversial discussion on the use of alternative fuels.

[Learn More](#)

RECOMMENDED EVENTS

27.-28.01.2021 | Hanau or Live-Stream
THE POWERTRAIN OF TOMORROW 2021 | ATZ live



Increasingly stringent international legislation on CO2 emissions is causing a paradigm shift in the powertrain. Electrification is advancing, and powertrains need to be considered more strongly as part of an integrated network of internal combustion engines, transmissions, and electrification. The focus of this international conference is on powertrain synthesis, with components and vehicle integration forming the basis. The complexity of the cause-and-effect relationships can be mastered only through digitization. System thinking, intelligent management, and new development methods play decisive roles in the race for the drive system of the future.

International MTZ Conference on Future Powertrains | Thinking in Systems

[Learn More](#)

23.-24.02.2021 | Baden-Baden or Live-Stream
INTERNATIONAL ENGINE CONGRESS 2021 | MTZ



Main topics: Sustainable mobility: complete LCA // Internal combustion engines and fuels as a complete system: CO2 reduction, emissions control, electrification // Climate-friendly internal combustion engines // Increasing efficiency in products and processes // Use of hydrogen and synthetic fuels

Panel discussion: «CO2 budget – the role of engines and fuels in sustainable mobility» with Prof. Dr. Uwe Lahl (Ministry of Transport Baden-Württemberg)

[Learn More](#)

You will find further online information on our websites: [Events](#) | [THEMIS Calendar](#)

For questions regarding your newsletter subscription, please contact Petra Tutsch or Stephanie Smieja at newsletter@fvv-net.de