

P5 TECHNICAL TRENDS IN HD TRUCK BUSINESS AFFECTING REQUIREMENTS ON FILTRATION

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The presentation will give an overview and interpretation of the upcoming technical developments and trends of trucks and engines. It is based on discussions with truck manufacturers all over the world, literature research and own experience.

All prognoses show a further growth of the transportation business for the next decade and beyond. This raise in transportation volume will take place in all regions, Europe, Americas and Asia. The production number of trucks > 6 tons will increase from ca. 2.6 Mio./a in 2015 to estimated 3.2 Mio./a in 2022. Despite a different trend in the passenger car business, the main power source for middle and heavy trucks will remain the internal combustion engine, as liquid fuels have the highest volumetric energy density compared to all other energy sources. Driven by expected further increasing fuel prices, energy efficiency is and will stay the main driver for all developments. As trucks are investment goods, this demand for energy efficiency is not only driven by environmental legislation, 1 % fuel efficiency improvement of a heavy duty truck results in about 500 €/a lower cost based on today's fuel prices in Europe.

One of the main areas to lower energy consumption is the thermal management of the engine including technologies as e.g. waste heat recovery systems or turbo compounds. Besides this, technologies to lower all kinds of pressure losses will be implemented. From the exterior, aerodynamic optimized trucks and trailers will become standard. High sophisticated and more efficient filtration products will have to support and enable these developments that are already in preparation for serial use. The challenging requirements to the filter elements and filter systems are derived out of these changing system environments on the trucks. So e.g. all kind of losses in the filter systems have to be minimized in smaller available volumes of the future trucks. Demands for increasing service intervals are driven by the annual mileage of the trucks will require higher absolute and specific dust holding capacities of the filter elements. The worldwide roll out of engine platforms demands filtration and service solutions that are able to work under all conditions in the different markets.