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Expertise for the Future

One of the major tasks in the automotive industry is to use energy sources in the best way possible. Converting these sources into kinetic energy in vehicles in a highly efficient manner is not new, but is one of our core businesses. We have been improving drives and vehicles and reducing fuel consumption as well as exhaust-gas emissions for decades. This expertise remains essential – because the careful handling of energy will remain a key factor.

Today, however, it means more than that. The necessary transition away from fossil fuels means that we must choose the ideal climate-neutral options in a focused way with a high degree of understanding of the global markets and the variety of vehicle categories along with their type of usage. The path leads inevitably to technological diversity. Battery electric drives will dominate in lighter vehicle classes: accompanied by hydrogen and hydrogen-based fuels as essential energy sources for decarbonization, especially in the heavy-duty transport and off-highway sectors and as important leverage for reducing CO₂ emissions in the existing fleet. Biofuels also play an important role regionally – here, we must pay particular attention to a sustainable production. The techni-

cal/scientific discussion of this diversity is the core of the task of achieving global sustainability on the roads.

At the same time, more than ever, it is important to use raw materials carefully. Here, too, we can remind ourselves of our core businesses – such as structural lightweight design, materials research, and production processes. Mahle has just achieved a technological leap in battery cooling plates using nature as an example. The bionic structure of the cooling channels significantly improves not only thermodynamic performance but the structural-mechanical characteristics of the cooling plates as well. The amount of material used for the plates is reduced by up to 15 %.

For difficult to obtain and only regionally occurring raw materials a complete renunciation is particularly desirable. Mahle achieved this over two years ago with the MCT traction electric motor, which does not use any rare earths.

These are examples of how we can use engineering expertise to achieve technological benchmarks in future fields. And they reassure us that we will be able to design the mobility of the future actively and sustainably.