The Bigger Picture

Dear Reader,

MTZ is a magazine on the subject of powertrains, both combustion engines and electric drives, which is unlike almost any other publication. In the light of this, the editorial team here at MTZ has been constantly calling for technology neutrality. A systemic approach is equally important in relation to emissions as it is in relation to development. Which powertrain is currently in the lead? In our view, all of them are. If enough renewable energy is available, all powertrains have the potential to be carbon-neutral if not zero-carbon.

However, the huge program of subsidies for battery electric vehicles falls short of what is needed. At least in the medium term, the construction of the infrastructure and the introduction of a new fleet of vehicles will more than eclipse the zero local emissions and will even increase levels of CO₂. In the short term, the only way of achieving our CO₂ targets seems to be to restrict personal mobility, as it happened during the Covid-19 lockdowns, with the corresponding impact on the economy and our social lives. Do we really have to choose between individual freedom of movement and climate change? Or are there other solutions that offer effective possibilities for reducing emissions without restricting mobility?

For any of these solutions, it is important that we do not lose sight of the maximum carbon budget, which is the maximum amount of fossil CO₂ that can be emitted while meeting the target of a maximum rise of 1.5 °C in the global temperature. According to the Intergovernmental Panel on Climate Change, it currently amounts to between 420 and 580 billion t.

We need to remember that the use of hydrogen requires a new infrastructure at least in the last mile. All the related technologies are hugely expensive and need to be critically evaluated against the background of the carbon budget. In the case of synthetic fuels, it is possible to use the available infrastructure, from tankers and refineries through to filling stations and the existing fleet of vehicles. However, the production of these fuels is much more energy-intensive than the direct use of electrical energy.

How can we bring about an environmentally and economically viable technology transition in the field of transport involving as few restrictions as possible for citizens and industry? Ultimately, the measures must always be judged according to their impact on the freedom of the individual. A ban on personal mobility is as unreasonable in this respect as a technological one-way street.

I hope you enjoy this issue of MTZ.

Marc Ziegler
Deputy Editor in Chief

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