
HIGH TECH

Dear Reader,

Volkswagen's Director of Electronics, Dr. Volkmar Tanneberger, expressed his surprise: it was not so much the engineering issues but rather the economic aspects of electric vehicles that dominated this year's VDI Electronics Congress in Baden-Baden. There were plenty of opportunities, for example in the technical presentation of the i3 electric car by BMW's i division. In spite of being positioned in the premium class, the market success of the € 35,000 car is continuously being put into question.

High tech has its price, and the car industry is well known for its endless lists of expensive optional extras in the premium segment. But how much high tech with real customer benefit is there in such a BMW electric car? I had the opportunity to test the i3 in October. The road test report at www.springerprofessional.de describes the advantages that a car designed consistently for an electric drive system has over converted conventional vehicles. A spacious interior is possible because there is no need to build around drive components. For example, the installation space gained at the front end allows a turning circle of only 9.8 metres to be achieved – exceptionally small for a vehicle of this size.

Even more impressive is the driving experience, which differs in many respects from that of conventional cars. Over a distance of 200 kilometres, I pressed the brake pedal only three times, and in other respects too, it was possible to control the i3 so sensitively using just the accelerator pedal that there is no need, for example, for actively adjustable energy recuperation and the deceleration it provides.

Simplicity – that is a term that can also be used to describe some of the other

genes of this and other electric cars. In my view, the development potentials of electric cars get a raw deal in many discussions. Even current achievements are hardly perceived. For example, there is widespread belief that the vehicle's driving range is halved in extreme temperatures. But if heat pump technology is used, the loss is only 20 percent, and this can be further optimised by preconditioning during the charging process. BMW allays any fears of limited driving range in an exemplary manner by applying, among other things, precise energy monitoring and predictive navigation.

BMW takes its concept of Efficient Dynamics very seriously. How does the OEM succeed in being more energy-efficient with a car that has a peak output of 125 kW and more weight compared to a VW eUp with 60 kW? The research article on page 54 may give you some ideas. It describes the electric motor of the i3, disguised in the Active E, with further efficiency potentials. That too is premium, because it has high tech inside.



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