

Dirk Biermann (50Hertz Transmission GmbH) in an interview with the VDE: 40 million electric cars are feasible—but only with the expansion of renewable energy

50Hertz Transmission COO Dr. Dirk Biermann believes that having more than 40 million electric cars in Germany by 2045 is technically and energetically feasible. However, this would require the continued expansion of renewable energy, he says in an interview with the VDE. Bidirectional charging is an important lever in this regard—but it is not without challenges.

(Frankfurt am Main, October 29, 2026) Dr. Dirk Biermann believes the further electrification of road traffic in Germany is technically feasible—on one condition. “By 2045, we expect there to be over 40 million electric passenger cars in Germany. From an energy perspective, this is feasible,” says the COO of Operations at 50Hertz Transmission GmbH in an interview with Ralf Petri of the VDE Association for Electrical, Electronic & Information Technologies. However, this would require the continued expansion of renewable energy sources.

The challenge extends far beyond electric mobility. “The additional demand for electricity stems not only from electric mobility but also from the decarbonization of heating and industry,” says Biermann. “The greater challenge, therefore, is not the electric car itself, but the overall electrification of the economy and society.”

Bidirectional Charging “Technically Promising”

According to Biermann, electric cars could contribute to grid flexibility in the future and create new opportunities for market participants. “Technically, I consider bidirectional charging to be promising,” says the experienced manager, who has been with 50Hertz for more than 15 years. “Interesting applications are already emerging, particularly in the home environment.” When it comes to public charging— —however, he still sees room for development, for example in

terms of dynamic rates and market incentives. In the interview, he also calls for the requirements on distribution grids to be taken into account: “Charging of electric vehicles often occurs simultaneously and can cause local load peaks. That’s why distribution system operators need suitable control options to avoid unnecessary grid expansion.”

[In September, the VDE highlighted the relevance of electric vehicles as a key component of the energy transition](#) and is currently researching bidirectional charging in two funded research projects.

Smart Meter Rollout Is a Crucial Factor

Even beyond bidirectional charging, Biermann emphasizes digitalization and automation as levers for a high-performance grid: “The interfaces between transmission and distribution grids will be particularly important in the future. There is still a considerable need for development in this area,” he says. Another crucial factor, he notes, is the smart meter rollout. “Without this meter data, the interaction between consumers, generation facilities, and battery storage systems cannot be efficiently orchestrated.”

The conversation between Dirk Biermann and Ralf Petri is part of a series of interviews in which Petri—Head of the Mobility Division at the VDE and Managing Director of the VDE Energy Technology Society (VDE ETG)—regularly meets with executives from the mobility industry and related sectors. The interviews also highlight the people behind the scenes and are published on the VDE website.

[You can find the full interview at this link](#) (in German).

These challenges are also a topic at the VDE E-MOBILITY CONFERENCE

Discussions on the challenges of electrifying mobility and the energy system will also be the focus of the [VDE E-MOBILITY CONFERENCE 2026](#) (in German). This year, the annual industry event will take place on November 4 and 5 at the Coreum in Stockstadt am Rhein. The official patron of the event is Christian Hirte, Member of the German Bundestag and Parliamentary State Secretary to the Federal Minister of Transport. The focus is on the development of Germany as a business location, as well as new products and services that can be explored at an accompanying corporate exhibition.

About the Power Engineering Society within VDE (VDE ETG):

The Power Engineering Society within VDE (VDE ETG) promotes the development of energy systems in Germany. It combines expertise in the generation, storage, transmission and distribution of electrical energy and the relevant interdisciplinary technologies, as well as the many different ways in which this energy is used. Integrated into the VDE interdisciplinary network, ETG is a widely recognized and respected technical and scientific association. The volunteer experts create a common platform for knowledge exchange in science and industry, contribute to accelerating the energy transition and to promoting an understanding of sustainable energy technology in society, and identify areas of action for policymakers. ETG connects people, different generations, start-ups and established institutions, science, business and society with performance and energy.

For more information, visit www.vde.com/etg

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Our passion is the advancement of technology, the next generation of engineers and technologists, and lifelong learning and career development “on the job”. Within the VDE network more than 2,000 employees at over 60 locations worldwide, more than 100,000 honorary experts, and around 1,500 companies are dedicated to ensuring a future worth living: networked, digital, electrical. Shaping the e-dialistic future.

The VDE (VDE Association for Electrical, Electronic & Information Technologies) is headquartered in Frankfurt am Main. For more information, visit www.vde.com

Press contact: Matthias Schmidt-Stein, Phone +49 69 6308-398, presse@vde.com