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**Christian Hochfeld**  
Executive Director of Agora  
Verkehrswende. Smart Energy  
for Europe (SEFEP) gGmbH

## Twin Transformations

Public debates surrounding the decarbonization of the transport sector invariably pin great hopes on electric vehicles. While this is understandable, it risks losing sight of the big picture. To be sure, it is difficult to envision a scenario in which the transport sector becomes clean and climate-friendly in the absence of electric vehicles and green electricity. Yet the challenge at hand involves much more than merely adopting new propulsion technologies. Indeed, the so-called *Verkehrswende* (transport transformation) is not only a technological project, but also – and perhaps most crucially – a social and political one. In contrast to the power sector’s decarbonization, the success of this transformation depends upon millions of people changing their day-to-day behavior. For clearly, in addition to decarbonizing the transport sector, we also need to transform the way people use transport on a daily basis.

If ambitious efforts are taken to meet climate protection targets, demand for renewable electricity is set to rise considerably in all three energy demand sectors (transport, buildings, industry). However, due in part to local resistance to new development, Germany has a limited number of favorable sites for the expansion of renewables. As a consequence, we not only need to use electricity more efficiently; we also need to reduce overall energy consumption in the transport sector (which,

at an equivalent of 750 TWh per annum, currently exceeds that of the manufacturing sector).

But how do we reduce energy consumption in the transport sector without restricting the mobility of people and goods? To accomplish this, drastic change is needed. Motorized private transport currently accounts for approximately one-fifth of passenger transport. Yet goods are also predominantly transported by road – that is, in a comparatively inefficient manner. Experts thus emphasize the need for a “modal shift” – or change between modes of transport – particularly in favor of rail traffic. Yet such a shift can only occur if railways are expanded and made considerably more attractive to passengers and shippers. This alone will not be enough, however. The greatest reductions in energy consumption can be achieved by creating so-called “mobility networks” that allow individuals to easily mix and match transport options. Passenger cars will constitute an important component of future mobility networks – not as private vehicles, but as shared ones. Furthermore, cars will increasingly become electric, and possibly self-driving. Collective efforts are indispensable for these objectives to be realized; in particular, people must be willing to forego private vehicle ownership. Technological hurdles aside, this is the most acute challenge facing policymakers in the transport sector. Addressing it will require determination and persistence, as well as passion and perspective.