Power Semiconductors applications within future renewable energy and electrification industry

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The presentation will give an overview, how from a power electronics system provider view, the new trends for a greener environment will be supported by existing and new innovative power semiconductor technologies.
Starting with the transformation of the electricity generation to renewable energy, the electrical grid need to be re-defined both from concepts as well as from geographic expansion. Both in the generation and distribution, new systems are used and further developed, which also applies for new power semiconductor concepts. On the use side of electricity, existing concepts including green mobility with rail have further technological adoptions and then new game changing electricity use trends such as electric vehicle in any kind (from passenger cars via buses to heavy vehicles) or battery storage systems are added.
This means for the power semiconductor technology requirements evolutionary new developments from chip design to new module designs, but also disruptive new technologies such as the use of SiC as new base material instead of silicon or completely new module concepts.
Besides the technological need, it needs to be setup an adopted or partly new industry value chain, from power generation via power transmission to the grid and charging infrastructure, then finally to the electricity use itself. Equally important is the setup of a sustainable Ecosystem for power semiconductor industry.

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