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Presentation S3-2:

Green and Convenient - Innovations for the New Electricity Age

Electrical Energy plays an increasing role in the energy system. The reasons are especially the versatile application possibilities of electrical energy (e.g. appliances, communication devices), the high end-use efficiency of such applications (e. g. Electric Cars, electrical drives instead of mechanical drives) and the fact that renewable energy from hydro, wind and solar can be converted with high efficiency into electrical energy. In addition electricity grids allow high-efficiency transmission to end-use applications.

As a consequence the electricity system is getting more and more complex: on the one hand decentralized and distributed generation increases and on the other hand new infrastructures such as Electric Car charging stations connect to the electricity system.

The electricity grid plays an essential role as it binds together all components. Information and Communication Technologies (ICT) ensure the physical energy flow and allow the application of new business models (Smart Grid Technologies). Classical Energy Technologies and ICT form a symbiosis never seen before: The *New Electricity Age* has started!

The presentation will describe pioneering innovations along the energy conversion chain: from oil and gas exploration, conventional and renewable power plant technologies, grid technologies to end-use applications.

As will be shown the *New Electricity Age* does not only provide a major contribution to combating climate change but also offer substantial welfare and convenience to the public.