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***Advanced Electric Power Systems with High Renewable Content - Projects  
and Perspectives***

Dr. Christof Sihler, GE Global Research

**Abstract:**

The presentation includes an overview of solar and wind industry developments and their potential impact in the energy supply of future power systems as seen from a manufacturer. GE has been active in microgrid initiatives with utilities and government entities for many years. This presentation includes key technical approaches and activities associated to the microgrid programs.

GE has also been involved in numerous efforts to understand the impact of renewable resources in the operation and planning of electric power systems. This understanding can be applied to mitigate uncertainty faced by (vertically integrated) utilities to plan future energy resources. The presentation describes ongoing efforts involving utilities, government agencies, academia and GE to help define energy infrastructure roadmaps of specific islanded systems with high availability of renewable resources. The efforts include considerations of the impact of renewables (wind and solar) on the cost of electricity as well as operational constraints that define additional system needs to achieve acceptable system performance with variable renewable generation.