

## ASPECTS OF LARGE SCALE RES/DG INTEGRATION IN EXISTING ENERGY SUPPLY SYSTEMS - CONSIDERING AS EXAMPLE THE SITUATION IN GERMANY

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### ABSTRACT

To aid the realization of the objective formulated on the European level for a 22% share of renewable energy out of the gross electricity consumption until 2010 as well as a general increase in energy efficiency, large quantities of distributed small generators with differing characteristics are to be integrated into the energy system. Apart from the inevitable classical grid extension and adoption of the large power station park, also innovative extensions on the basis of new technologies (automation, information, communication) as well as the adapted operation concepts and responsibilities are required, in order to arrive to a comprehensive technological optimization and economically justifiable solutions. The multitude of wide distributed small plants requires a recapitulated view for grid requirements i.e. at least the coordination or where necessary controlled operations in the form of large scale virtual power plants in a given case corresponding to grid-topological clustering. To avoid the overloading of grids in extreme feeding situations, the limiting of the feeding in power respectively storage management in connection with energy management is to be considered as well as schedule-based feeding according to the rules of the markets for the reduction of regulating power demand or for the increase of capacity. The appropriate framework is to be arranged by the legislator.