

Smart Energy Applications, from Gadgets to Energy Savings

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Abstract:

Smart Energy is characterized by the systematic application of information and communication technologies on all levels in the energy mass market. It is one of the most relevant innovations for the future energy system. Nevertheless due to immature markets and political influence great uncertainty exists around the development and potential of Smart Energy. A wide range of Smart Energy applications exist, each characterized by a specific level of aggregation and extent of control, thus requiring individual, careful analysis of technologies and markets.

In Europe the roll-out of smart meters is expected by 2020, mainly driven by regulation with uncertain economics probably delaying market success. Accordingly the number of pre-commercial field tests of SE applications is rising, and several potential new roles for new players are conceivable.

The main SE-market potential is currently in the B2B sector where first successful products have been introduced based on aggregation of multiple customers or sites. This includes providing access to the wholesale market for distributed generation and virtual power plants to combine feed in of multiple distributed power generators and flexible loads. The main future potential for B2C has been identified on the individual customer level for control of heating systems and demand side management (DSM). Smart Home leads to minor savings of electricity. Nevertheless a future market for creative applications increasing comfort, service level or status may exist.