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Energy at home: Enel Research projects and experiences

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Abstract

Since the 90's, Enel group developed a unique smart metering infrastructure able to automatically acquire customer consumptions down to 15' timeframe, to optimise distribution grid operation through remote contract management, and to enable differentiated hourly tariffs to be applied, thus fostering customer awareness on their consumption during the day.

Nowadays , smart homes are getting a reality and the technologies being available at homes may be used by the utility companies to foster their competitiveness by offering innovative value-added services to customers.

As one of the main electric utilities worldwide, Enel is extensively working to enlarge its capabilities in deploying the potentialities of the new devices and communication networks available at customers' homes, in order to offer the best services in Italy and abroad.

Activities are being developed onto three main layers, namely Technologies at customer premises, Energy management and customer awareness, Customer interaction with the market. Integration of those layers into Enel business intelligence platforms and into an effective data analytics platform will allow an integrated service offer to each of Enel customers.

The paper introduces Enel global approach to customer services and focuses on those projects related to residential customers, taking into account all the three above mentioned layers, from technologies to energy management, to market interaction. A reference to the evolving regulatory scenario, which will impact energy retailer business model, is also highlighted.