

Research Frontiers and Development Dynamics of Demand Response under Deregulated Electric Power Retail Market

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Abstract

The research and application of Demand Response has lasted for ten years, especially in the latest four years, whether study achievements or pilot projects, entering a period of rapid development. Now, Beijing, Tianjin, Shanghai, Foshan and Jiangsu had launched DR pilot projects under the support of DSM related policies. Since 2014, a new turn of reform about electric system had started, of which the reform about electric power retail side had definitely put forward social capital can build up electricity-sale company and take part in electricity-sale business, in addition promoting development of DR had also been referred. Meanwhile, the policies about electricity-sale reform, Internet plus Smart Energy, and promoting Renewable Energy Absorption, all mentioned promoting DR development and exploring development mechanism and implementation mode of DR.

In view of the above situation, Beijing, Shanghai, Foshan and Jiangsu and some other DR pilot provinces and cities had set implementation programmes, build the DR system covering the DR service provider, DR aggregator, and electric user, etc. Some universities and scientific research institutions at domestic had carried out research and development work around DR system and terminals, DR information mode, DR strategy, DR implementation results evaluation, DR business simulation, etc. At the same time, to normalize the development of DR related system and terminals, lift the interconnectivity ability of different systems, enlarge the pilot scale of DR and reduce cost of DR pilot facilities, the DR standard system had been built and a series of country-level or industry-level standards about DR system, DR terminal had been set depending on the SAC/TC549 Smart Grid and User Interface Standard Committee, which plays an important role in promoting DR development in China.