

Time-based pricing and electricity demand response: existing barriers and next steps

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Abstract-

Interest in Demand Response (DR) is increasing due to its potential to improve reliability and save costs for electricity systems. DR can provide a sustainable and cost-effective option for supply balancing, especially in a scenario with more volatile inflows from renewable energy sources. End-users can be incentivized to provide DR through time-based pricing in general and dynamic pricing in particular. This paper provides a theoretic framework and practice-oriented review of the status of DR in Europe, outlining the major challenges currently hampering further DR development. Important challenges involve the split-incentive issue for investments in enabling technologies, traditional market rules for flexibility that favor large generation units and the need for electricity market and network operation coordination.

Index Terms- Smart grid; Demand side management; Tariffs

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