

Abstract of A Speculative Trading Model of Electricity Market

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Renewables are desirable energies for the viewpoint of economic efficiency. However, the unstable supply of renewable energy indicates that the cost for adjusting supply and demand will increase. It is necessary to be able to trade electricity until just before generated. Furthermore, it is important to increase the liquidity of electricity. Some researcher investigated the wind power generation in Germany pointed out the importance of increasing the liquidity of electricity(Holttinen(2005, Ummels et. al(2006)). Naturally, as prediction accuracy increases as approaching that day, being able to trade electricity to a point just before electricity in even finer time period will increase the liquidity of electricity.

However, increasing trading opportunities has the aspect of allowing market participants to dynamically make speculative actions. Electric power is difficult to saving in theory, and such behavior was difficult, but if the liquidity of the market increases and the transaction becomes easier, it is natural that a company that obtains profits by using price difference will come out is expected. In this paper, we use a simple model and analyze the speculative behavior in the dynamic power market.

Our main theoretical base is heterogeneous-belief bubble model like Miller(1977) or Harrison and Kreps(1978). The bubble of electricity market is not considered to occur. Because saving the electricity is technically difficult, the speculative action is said to be impossible. However, accompanying with the rise of renewables, we can trade the electricity one-month before market or one day before market. So, the speculative trade is not so difficult to use the dynamic market.

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