

Abstract:

Many countries have introduced wholesale electricity markets in order to enhance competition in the energy system. However, in many wholesale markets, incumbent electric utility companies tend to have large market power; many of them act as both buyers and sellers in the market; and bilateral trading of electricity outside the wholesale markets is prevalent. Recent electricity market anomalies—the power crisis in Texas and the electricity price surge in Japan—raised concerns about the electricity market design and its impact on electricity prices. This paper studies the economic impacts of reforms in various aspects of the wholesale electricity market design. For example, gross bidding—where trading under bilateral contracts is transacted through the wholesale market—is promoted as a way to expand the wholesale market and increase the market transparency in Japan. We investigate the conditions under which gross bidding reduces distortions due to market power in the wholesale trading.