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Capacity Market Fundamentals

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Electricity capacity markets work in tandem with electricity energy markets to ensure that Investors build adequate capacity in line with consumer preferences for reliability. The need for a capacity market stems from several market failures. One particularly notorious problem of electricity markets is low demand flexibility. Most customers are unaware of the real time prices of electricity, have no reason to respond to them, or cannot respond quickly to them, leading to highly price-inelastic demand. This contributes to blackouts in times of scarcity and to the inability of the market to determine the market-clearing prices needed to attract an efficient level and mix of generation capacity. Moreover, the problems caused by this market failure can result in considerable price volatility and market power that would be insignificant if the demand-side of the market were fully functional. Capacity markets are a means to ensure resource adequacy while mitigating other problems caused by the demand side flaws. Our paper describes the basic economics behind the adequacy problem and addresses important challenges and misunderstandings in the process of actually designing capacity markets.