

A VCG Auction for Electricity Storage

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Abstract

Energy storage seems set to play a key role in managing and balancing the future electricity system. Storage can act as a generator and as a load, providing both energy and ancillary services such as fast frequency response and operating reserve. Therefore, it can provide the desired flexibility for the network. Current mechanism designs do not take advantage of the full potential of a given storage facility and the auctions used to buy and sell potential storage products have design flaws. This paper gives an overview of how storage products are bought and sold today and the problems of the current designs. It then presents a new mechanism design to integrate storage in the most efficient way, based on social welfare.

Keywords Electricity storage, interconnectors, auctions

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