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Title: Capacity and Energy Market Equilibria: Storage Load Carrying Capability and Unit Commitment Representation

Abstract: A capacity and energy market equilibrium model is used to identify the appropriate capacity credit (effective load carrying capability) to give to storage, demand response, and generation technologies, given unit commitment constraints and variable output of renewable generation. The market model assumes that energy is traded at spot prices, which are capped, while a capacity market pays for capacity credits in order to correct the "missing money" problem. A capacity market simulation model shows the impact of giving inaccurate credit to different resources in the market. The model considers multiple years of demand and variable renewable hourly realizations, but assumes perfect foresight in commitment and storage decisions.

Key words: Capacity markets, electricity markets, storage, equilibrium model