

# **On the Design of Electricity Markets**

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## **Abstract**

There is yet a considerable debate on whether capacity markets are necessary or not in the design of electricity markets. Advocates of energy-only spot markets claim that capacity markets are not necessary and that they imply wasteful payments. On the other hand, even proponents of capacity markets assert that energy-only markets can work, given certain conditions. The arguments used by both sides of the controversy do not make reference to private information. In this paper, we assume that generators have private information about their costs. A planner considers mechanisms that could implement the efficient allocation with respect to building new capacity and dispatching them. We show that no mechanism with zero payments before the production phase can implement the efficient outcome. In particular, spot markets alone are not able to implement efficient allocations, even if the market price cap is set efficiently, at the value of the lost load.

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