

Electricity markets: Designing auctions where suppliers have uncertain costs

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Abstract We analyse how the market design influences the bidding behaviour in multi-unit auctions, such as wholesale electricity markets. It is shown that competition improves for increased market transparency and we identify circumstances where the auctioneer prefers uniform to discriminatory pricing. We note that political risks could significantly worsen competition in hydro-dominated markets. It would be beneficial for such markets to have clearly defined contingency plans for extreme market situations.

Keywords cost uncertainty, asymmetric information, uniform-price auction, discriminatory pricing, Bertrand game, market transparency, wholesale electricity market, treasury auction, Bayesian Nash equilibria

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