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Dynamic and Strategic Behavior in Hydropower-Dominated Electricity Markets: Empirical Evidence for Colombia

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In this paper we formulate a dynamic multi-unit auction model to characterize bidding behavior in hydro power dominated electricity markets. Our model implies that, in order to maximize expected profits, hydro producers will submit bid prices above its marginal production costs that account for the intertemporal opportunity cost of water and the expected strategic effects of bids on rivals' behavior. We test the predictions of our model against data of the Colombian electricity market, where hydro producers hold 63% of total installed capacity, and find evidence consistent with both dynamic and strategic behavior.

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