

Combinatorial and simultaneous descending auctions for electricity transmission concessions

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Abstract— Many countries use auctions to select agents to which transmission concessions are awarded. Where multiple concessions are auctioned each year, there are potential benefits, for transcos and grid users, in using auction protocols allowing risk-averse bidders to explicitly consider complementary packages of transmission facilities: combinatorial & simultaneous descending auctions. We investigate the use of these protocols for transmission auctions, with aid of mixed-integer linear optimization models developed for this task and realistic case studies, while focusing on the treatment of the exposure problem.

Index Terms— Transmission, competitive bidding, exposure problem, combinatorial and simultaneous descending auctions.

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