

# Optimal bidding strategies for hydro-electric producers: a literature survey

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**Abstract—** In a competitive environment with bid-based markets, power generation companies desire to develop bidding strategies that maximize their revenue. In this paper we ask: What approaches and methodologies have been used to model the bidding problem for hydro-electric producers? We present the problem's developments over time and, through reviewing different variants of the problem, progressively build to the case in which the agent is a price-maker hydro-electric producer. In each variant of the bidding problem, we examine how the approaches used to solve it may or may not be applicable to other variants. Last, for the price-maker hydro-electric producer's bidding problem, we recognize the most recent developments and illuminate a path for future efforts.

**Index Terms—** Bidding problem, hydro-electric producers, price-taker, price-maker, stochastic dual dynamic programming.

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