This paper explores the differences in the bidding patterns of entrants and incumbents in electric power procurement auctions in Japan. In this market, entrants have a significant cost structure disadvantage and the auction participation rate remains very low. We model the bidding patterns of entrants and incumbents where the participation decision depends on the reserve price, and estimate the cost distribution and equilibrium strategies. We also consider a policy experiment in the spirit of a price-preference policy to enhance competition on incumbents and the participation of entrants.