Abstract   Microgrids are faced with various uncertainty resources, which may put their reliable and beneficial bidding strategy at risk. In the literature, to handle the uncertainties, distinctive methodologies from fuzzy to stochastic techniques have been implemented widely. However, they dominantly suffer from dependency to the uncertainty models and are highly computational. In this paper, to overcome the challenges, a new approach based on information gap decision theory (IGDT) is proposed to provide a promising risk-managing bidding strategy. The uncertainties are modeled effectively without relying on the model in both robust and opportunistic frameworks. The problem is formulated as an effective multiobjective optimization problem considering the impacts of different uncertainties. Normal boundary intersection technique is utilized to generate evenly distributed Pareto Frontier. Analyzing the IGDT-based numerical results, applied to a test microgrid over a 24-h time horizon, verifies the effectiveness of the proposed bidding strategy structure confronting to the severe uncertainties.