

Optimal Sizing and Placement of Distributed Generators for Profit Maximization Using Firefly Algorithm

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Abstract : This paper presents a firefly based algorithm for optimal sizing and allocation of distributed generators for profit maximization. Distributed generators in the proposed algorithm are of photovoltaic and combined heat and power technologies. Combined heat and power distributed generators are modeled as voltage controlled nodes while photovoltaic distributed generators are modeled as constant power nodes. The proposed algorithm is implemented in MATLAB environment and tested the unbalanced IEEE 37-node feeder. The results show the effectiveness of the proposed algorithm in optimal selection of distributed generators size and site in order to maximize the total system profit.

Keywords : distributed generators, firefly algorithm, IEEE 37-node feeder, profit maximization

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