



RESEARCH ARTICLE

Calculating Optimal Cost of Using DGs in Micro Grids by Using Imperialistic Competitive Algorithm (ICA)

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Abstract— *How to use renewable sources has been a great problem for many years. Researchers have invented and developed Microgrids, flexible networks with a central control system; nevertheless, for installing renewable sources on them there is still questions. As a result, researchers started to use different algorithms in order to solve problems and find best answers for electrical functions. One of the most novel algorithms for this purpose is Imperialistic Competitive Algorithm (ICA). It is based on historical events and provides marvelous results and speed in comparison with similar algorithms such as Genetic Algorithm or PSO. In this paper we will investigate best answers for cost function in a 14-Bus Microgrid by using ICA algorithm. Finally answers will be compared with GA and PSO so that it can be shown that proposed algorithm is more efficient than its counterparts.*

Keywords— *Distributed Generation; Imperialistic Competitive Algorithm (ICA); Microgrid; PSO; GA*

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