

عنوان مقاله:

The Implementation of Sustainable Energy Resources in Economic Dispatch Problem

محل انتشار:

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خلاصه مقاله:

This paper presents a new approach for Economic Dispatch (ED) problems incorporating sustainable energy resources using Particle Swarm Optimization (PSO) method. As wind farms increase in power systems, its effects on conventional units should be analyzed. On the other hand, due to the intermittent nature of many renewable energy resources, hybrid combinations of their relevant power production technologies can improve power system operation. Consequently, in this work, the parallel hybrid solar power plant and wind farm are considered in ED problem. Due to lack of using fuel to generate energy, the cost function of the wind power plant is described in a novel model. Also, to conducting the simulation, the effect of initial cost investment of solar cells and hourly solar radiation are investigated in cost function of hybrid solar power plants which be used in ED. To show efficiency and powerful performance of renewable energy resources on decreasing the total cost of production, by employing the PSO, two different scenarios with and without sustainable energy resources are considered and the results are compared to each others.

کلمات کلیدی:

Economic Dispatch, Wind Power Plant, Hybrid Solar Power Plant, Particle Swarm Optimization, Weibull Probability Density Function, Nonsmooth Cost Function

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