

Environmental Sciences and Renewable Energy 2021

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Impact of Renewable energy for power generation and power plant performance

To fulfill the present and future industrial, commercial, and residential electrical energy demands, power-generating technologies need special attention. The continuous and large-scale burning of fossil fuels for power generation results in environmental pollution, acid rain, and global warming, etc. A combined-cycle power plant is the first step in this direction that helps to reduce the fuel consumption as well as air pollution for generating as compared to conventional power (CP) plant. From the last few years, researchers developed many techniques that enhance the performance of combined cycle power plants based on its operating parameters. Integrating the combined-cycle power plant with renewable energy not only enhances the overall plant thermal efficiency but also reduces environmental pollution to large extent. Solar energy is one of the ample source of energy that could be used for power generation by integrating the solar field with thermal power plant, gas turbine power plant, and combined cycle power plant. The solar integrated power plant could be broadly classified as solar integrated thermal power plant, solar integrated gas turbine power plant, and solar integrated combined cycle power plant. There are many operating factors of the plant as well as the solar circuit that significantly affects the performance of overall performance of the plant. But in general, it is noted that the localized cost of electricity through solar integrated power plants is reduced as compared to the conventional power plant.



Mohammad Nadeem Khan

Majmaah University, Kingdom of Saudi Arabia

Biography

Dr. M N Khan is a faculty member of the Mechanical and Industrial engineering department, college of engineering, Majmaah University, Saudi Arabia. He has more than 15 years of teaching and research experience. His research interests are thermal engineering covering Heat Transfer, fluid mechanics, and power plant technologies. Dr. M.N.Khan has published many research papers in highly reputed refereed journals like energy, Journal of cleaner production, Energy Reports, etc., and also the reviewer of many journals of Elsevier, Springer, and many other web of science journals. He completed many international research projects. Dr. M N Khan session chair and organized many international conferences. He is also the academic editor of the "journal of energy (Hindawi)".

mn.khan@mu.edu.sa