

Estimating the Power and Number of Microturbines in Small Scale Combined Heat and Power Systems

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Abstract

Utilizing the Combined Heat and Power (CHP) systems to produce both electricity and heat is growing rapidly due to their high efficiency and low emissions in domestic, commercial, and industrial applications. In the first two categories among available drivers, due to the compact size and low weight, microturbines are attractive choice. In this paper, by using an energy-economic analysis the type and number of the required microturbines for the specific electricity and heat load curves during a year were selected. For performing this task an objective function AP (Annual Profit) was introduced and maximized. The operation strategy and the payback period of the chosen system was also determined in this study.

**Keywords: "Combined Heat and Power (CHP)", "Microturbine", "Energy analysis",
"Economic analysis"**

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