Abstract

In this paper a simple approach to is presented to economically optimize the power dispatch in a small microgrids environment. The optimization is modeled as a linear program problem and was solved by the Gnu Linear Program Tool Kit (GLPK). The converters and inverters that compose the microgrid use the OPC-UA protocol over Ethernet network to exchange data. The main contribution of this paper is the development of a simple optimizer system and friendly communication framework, compatible with small microgrids using renewable energy sources, like green data-centers and home environments to minimize the energy cost subjected to power limits of energy sources and loads demands.

Index Terms

Computer Science

Information Sciences

Keywords

Microgrids, Linear Programming, OPC-UA, Simplex