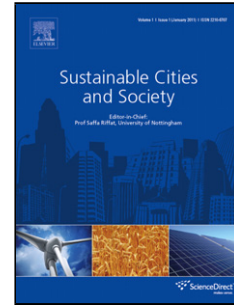


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# Energy Management and Control Policies of the Islanded Microgrids

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## Highlight

- **The operation and location of DGs in a renewable microgrid is simultaneously determined.**
- **Makes managements about the design and implementation of MG schemes for future policy makers.**
- **A novel control method is shown for sharing power among DG units.**
- **A novel algorithm, named HS-GA, is used for solving multi-objective problem.**

## Abstract

This paper proposes a new algorithm to find droop parameters of a microgrid (MG) in the islanded mode. To do this, a hybrid method is introduced to solve optimization problem based on the non-dominated solution. The proposed algorithm is combined of the harmony algorithm (HS) and also genetic algorithm and optimization variables include droop parameters of DGs in the islanded mode. The results show that the proposed algorithm is capable of significantly reducing islanded MG customer interruptions as well as improving the islanded MGs stability. The findings also demonstrate that an effective selection of droop parameters settings will facilitate the successful implementation of the islanded MG concept in distribution systems. The performance of the paper approach is compared with other optimization and non-optimization methods in MG with 33 bus using MATLAB.

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