



*Intelligent Automation and Soft Computing*, Vol. 16, No. 1, pp. 225-234, 2010  
Copyright © 2010, TSI® Press  
Printed in the USA. All rights reserved

## **MICROGRIDS AND DISTRIBUTED GENERATION**

**ROBERT H. LASSETER**

*1415 Engineering Dr  
University of Wisconsin  
Madison, WI 53706*

ABSTRACT—Application of individual distributed generators can cause as many problems as it may solve. A better way to realize the emerging potential of distributed generation is to take a system approach which views generation and associated loads as a subsystem or a “microgrid”. The sources can operate in parallel to the grid or can operate in island, providing UPS services. The system will disconnect from the utility during large events (i.e. faults, voltage collapses), but may also intentionally disconnect when the quality of power from the grid falls below certain standards. Utilization of waste heat from the sources will increase total efficiency, making the project more financially attractive. University of Wisconsin Laboratory verification of microgrid control concepts are included.