The Role of Solar Energy in Sustainable Practices in Manufacturing Companies

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ABSTRACT

In recent years, issues of sustainability have received much greater attention from organizations large and small, public and private. The level of environmental consciousness on the part of the average person has been dramatically impacted: "going green" and “carbon footprint,” along with other environmentally-themed phrases, have become household terms in a short span of time. To this end, many institutions of higher education have striven to be leaders in a new call for sustainability and environmental conservation. Western New England University is one these institutions that is proving itself a leader in sustainability.

To support our leadership role in sustainability, alternative energy laboratory experiences were developed to foster the Green Concentration in the mechanical engineering program at Western New England University. These laboratories, which give students hands-on experience and a better understanding of basic concepts in wind energy, solar energy, and fuel cell technology, utilize an Alternative Energy Active Learning Platform. Furthermore, the program focuses on understanding the crucial role that solar energy and other renewable sources can play in enhancement of sustainable and efficient operations in manufacturing companies.

This paper discusses the implications of the usage of alternative energy sources for manufacturing facilities. In addition, the study examines the impact of designing energy independent systems in a manufacturing environment through conversion to solar power and other renewable energy sources. The cost effectiveness and benefits of such conversion are also examined and discussed.