

# Information technology based energy management

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**New technologies are being increasingly used to improve conventional manufacturing practices and productivity. One common example is the application of information technology (IT) as a tool to enhance industrial productivity in a number of ways. Energy management is an important component of every manufacturing activity. Energy optimization can enhance the profitability of an industry in the long run. The article discusses how IT could be used as an energy management tool in the industry.**

## Introduction

**F**or all business establishments in recent times, the major driving factor behind most operational cost and capital cost investment decisions has been the need to be economically competitive in the changed market scenario and the need to meet increasing environmental standards. Effective energy management has been vital to help organizations meet these critical objectives for their short-term survival and long-term success. Through implementing new technologies, employing new materials and adopting new manufacturing practices, energy management has been helping companies improve their productivity, profitability and service quality.

Energy Management is the judicious control of energy consuming devices for the purpose of minimizing energy and maximizing productivity. Early energy management systems, in the form of automatic temperature control, came from mechanical devices, such as

clocks for automatic toggling and bimetallic strip thermostats to control the outputs of heating and cooling devices, along with pneumatic and electrical transmission systems. The arrival of power electronics and the increasing power of microprocessor-based PCs led to dramatic advances in energy management. Typical are the application of a broad base of variables through programmable logic controllers (PLC) to optimize the use of energy, and the application of information technology (IT) to improve energy services.

## Power electronics

Power electronics-based energy management systems (EMS) range from a very simple unitary microprocessor-based controller - with the necessary software to provide control of a terminal unit such as an air-handling unit - to a very sophisticated large building management system that interfaces with fire and security systems. The type and sophistication of the EMS application se

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