World Academy of Science, Engineering and Technology
International Journal of Electrical and Information Engineering
Vol:9, No:06, 2015

Energy Audit: A Case Study of a Hot Rolling Mill in Steel Industry

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Abstract : As the energy demands rise and the pollution levels grow, it becomes imperative for us to save energy in all the fields in which it is used. The industrial sector is the major commercial energy consuming sector in India, where electrical energy is the most common and widely used type of energy. As the demand and price of energy are increasing day by day, therefore, the subject of energy conservation is a concern for most energy users particularly industry. Judicious use of energy becomes imperative for third world developing country being presence of energy crisis. This paper provides some measure for energy saving that can be commonly recommended for a rolling unit of steel industry. A case of hot rolling unit in JSL Stainless Ltd., Hisar for energy conservation is given. Overall improvement in energy consumption in light of the stated recommendation is illustrated along with the proposed utilization of the techniques and their applications. Energy conservation in conventional motor with replacement or use of star delta star converter, reduction in cable losses, replacement of filament of LED lamps, replacement of conventional transformer with cast resin dry type transformer and provision of energy management system for energy conservation and per unit production cost reduction are elaborated in this paper.

Keywords : energy audit, energy conservation, energy efficient motors
Conference Title : ICTD 2015 : International Conference on Transmission and Distribution
Conference Location : Toronto, Canada
Conference Dates : June 15-16, 2015