

Bagasse saving and emission reduction in power dispatch at sugar factory by co-generation and solar energy

Abstract

Alternate fuel availability helps to replace bagasse in sugar and make them available for other purposes like paper manufacture or ethanol production. Also, power plant operators are compelled to reduce emissions of pollutants during the generations of electricity due to the increased awareness of carbon footprint and its effect on the environment. An optimization is performed on one such scenario where a combination of solar energy, coal, biomass and bagasse are used. Minimization of the emissions and bagasse utilization are taken as multiobjective problem in this paper with combined use of coal and biomass along with bagasse. The problem is formulated as Bagasse Saving and Emission Reduction (BS&ER) power dispatch problem and the results of the simulation show that the combination of solar power and others fuels can reduce both bagasse utilization and the emission of pollutants.