

RESEARCH CATALOGUE

ENERGY TECHNOLOGY



COMPUTER SIMULATION FOR A SUITABLE AND COST-EFFECTIVE SOLAR COOLING SYSTEM FOR COMMERCIAL BUILDING IN THAILAND



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Purpose of study

The aim of this research was to assess the financial viability of the application of solar cooling employing a single-effect absorption chiller for a large office building and a hypermarket model in the Thai context.

In this research, 2 solar cooling configurations, including a solar autonomous mode and an electric chiller-assisted mode were investigated. The operating costs of both configurations and both buildings were found to be lower than that of a conventional cooling system.

Main outcomes / outputs

However, the payback period of each configuration was estimated to be quite high. The levelized cost of solar cooling with electric chiller-assisted mode was found to be lower than that of the electric cooling system. It was also determined that if the cost of solar equipment is subsidized, the overall cost could be reduced to render such a system sufficiently attractive. This research work was published in the journal "Applied Science and Engineering Progress".

