

Abstract

The increasing demand for air conditioning during the summer leads to a rise in the amount of electrical energy consumed from the public grid, as well as an increase in electricity bills

Air conditioning units are operated in government institutions during official working hours, at the time of peak electricity demand from the grid, when electricity tariffs are high

In order to shift cooling demand from the peak period to a time when electricity tariffs are lower, reduce the building's energy consumption, and decrease electricity bills, this study addressed the pre-cooling technique using solar energy

Condensation is the process where a gas turns into a liquid due to a decrease in temperature or pressure

In refrigeration systems, when the hot gas from the compressor passes into the condenser, the heat it carries is transferred to the surrounding medium (such as air or water), cooling the gas and turning it into a liquid, This happens through

Heat Transfer: The hot gas moves into the condenser, where it is cooled by air or water

Condensation: As the gas cools down, it begins to transform from a gaseous state to a liquid state

Liquid Flow: The gas is transformed into a liquid with higher pressure and temperature than required for the cooling process

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