Title:	**Environmental, Energy and Economical Impacts of Replacing Industrial Vapour Compression Chillers by Solar Fired Absorption Chillers**

Authors:

Nidal Ibenali
Arabia Mechanical Contracting Company
Ramallah, Palestine
Nidal.Ibenali@Gmail.com

Osama Haj Ibrahim
Berzeit Pharmaceutical Industries
Ramallah, Palestine
Ohajibrahim@Gmail.com

Abstract:

This article represents a study of the impacts of using renewable techniques employed in absorption refrigeration instead of ordinary vapour compression refrigeration on industrial energy consumption in chilling plants in Palestine. The study has been done by calculating collected solar energy via available spaces to drive solar cooling system, calculating all energy requirements to drive both systems according to related standards, and comparing both at scale of 100 TR cooling capacity. It has been found that solar cooling system equipped with industrial steam load compensator can save 50% of CO2 emissions, and 28% of running cost and energy consumptions as per Palestine State related data.

Keywords: *Vapour Compression Chiller; Absorption Chiller; Evacuated Tube Solar Heating Array; Energy Consumption.*