

Master Thesis Brief Description

Thesis Title	Energy recovery with the use of solar thermal panels
Programme of Studies	MSc in Sustainable Energy Systems
Course	SES 515 Capstone Project I
Area of Study	Sustainable Energy Technologies
Student's Name	Nektarios Constantinou
Students Reg. Number	100004105
Supervisor	Dr.-Ing. Paris A. Fokaides, V. Lecturer, Frederick University
Supervisory Committee	Dr. George Karagiorgis, Assoc. Professor, Frederick University Dr. Constantinos Hadjiyiannis, Teaching Staff, Frederick University
Semester	Fall Semester 2017
Short Description	Main objective of this project is to study the replacement of the boiling procedure in a brewery by using steam delivered by a solar thermal system, with the aim to increase the temperature of the brew. The thermal analysis is anticipated to prove that the proposed energy recovery system, which will be solar driven, will allow the reduction of the carbon footprint of the unit, and will fulfil the energy requirements of the plant. The methodology of this work includes a comprehensive literature review of the presentation of solar energy applications used in industrial processes for improving the efficiency and the financial performance. Emphasis will be placed on solar applications on breweries and similar applications. Also the presentation of the current flow of the processes in the case study to be examined will be performed, as well as with the proposed renewable energy technologies application. A case study will be designed and pre-engineered, in which the different aspects of the solar thermal system will be investigated and designed.