Application of energy storage systems for heating buildings using solar energy supply

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Abstract:

Due to the limited energy resources and the need to save energy, use of solar energy as a strategic approach is extremely important. So in this article by using system to store solar Energy for heating buildings in Laboratory of Islamic Azad university -SemnanBranch. In this approach tried to optimized using of solar energy. In this system, the energy requirements of the building using software «Carrier» during the day and then the solar energy are calculated using mathematical equations. A code written in «MATLAB» for optimum Solar Energy consumption where calculates storage system level thermal load and thermal load of the auxiliary system (boiler) on the day. Utilizing the code, all needed magnitude of geometry as the collector area requirements according to the heat load are provided.

Keywords: Program «MATLAB» ,software «Carrier»,energy efficiency, energy storage system, Solar Energy