

Viability Study of the Use of Solar Energy for Water Heating in Homes in Brazil

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Abstract : The sun is an inexhaustible source and harnessing its potential both for heating and for power generation is one of the most promising and necessary alternatives, mainly due to environmental issues. However, it should be noted that this has always been present in the generation of energy on the planet, only indirectly, as it is responsible for virtually all other energy sources, such as: Generates the evaporation source of the water cycle, which allows the impoundment and the consequent generation of electricity (hydroelectricity); Winds are caused by large-scale atmospheric induction caused by solar radiation; Oil, coal and natural gas were generated from waste plants and animals that originally obtained the energy needed for its development of solar radiation. Thus, the idea of using solar energy for practical purposes for the benefit of man is not new, as it accompanies the story since the beginning of time, which means that the sun was always of utmost importance in the design of shelters, or homes is, constructed by taking into consideration the use of sunlight, practicing what was being lost through the centuries, until a time when the buildings started to be designed completely independent of the sun. However, the climatic rigors still needed to be fought, only artificially and today seen as unsustainable, with additional facilities fueled by energy consumption. This paper presents a study on the feasibility of using solar energy for heating water in homes, developing a simplified methodology covering the mode of operation of solar water heaters, solar potential existing alternative systems of Brazil, the international market, and barriers encountered.

Keywords : solar energy, solar heating, solar project, water heating

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