

CO2 Mitigation by Promoting Solar Heating in Housing Sector

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Abstract : Home heating and generation of domestic hot water are nowadays important items of expenditure and energy consumption. These are also a major source of pollution and emission of greenhouse gases (GHG). Algeria, like other countries of the southern shore of the Mediterranean has an enormous solar potential (more than 3000 hours of sunshine/year). This potential can be exploited in reducing GHG emissions and contribute to climate change adaptation. This work presents the environmental impact of introduction of solar heating in an individual house in Algerian climate conditions. For this purpose, we determined energy needs for heating and domestic hot water taking into account the thermic heat losses of the no isolated house. Based on these needs, sizing of the solar system was carried out. To compare the performances of solar and classic systems, we conducted also an economic evaluation what is very important for countries like Algeria where conventional energy is subsidized. The study clearly show that environmental and economic benefits are in favor of solar heating development in particular in countries where the thermal insulation of the building and energy efficiency are poorly developed.

Keywords : CO2 mitigation, solar energy, solar heating, environmental impact

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