

Economic, Energy and Environmental Comparison Between an Ecological and Conventional House

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Abstract

The total energy balance sheet of Algeria in the year 2009 shows that the final energy consumption is evaluated as 30.98 million TEP (Ton oil equivalent) and emphasizes a prevalence of energy consumption in the household sector as more than 41% compared with 19% from the industry sector and 33% from transport. In this article, an analysis of the use of the various energy vectors in an individual dwelling (conventional and ecological house) in urban environment is presented. The thermal parameters influencing the building are evaluated, illustrating the potential for energy losses, as well as energy gains for both types of buildings. The results are compared to demonstrate the requirement to use more ecological materials for buildings to realize savings in energy and economic terms to reduce heating and cooling and to minimize emissions of CO₂, for a more carbon-efficient-sustainable built environment.