

Technological and Economic Investigation of Concentrated Photovoltaic and Thermal Systems: A Case Study of Iran

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Abstract : Any cities must be designed and built in a way that minimizes their need for fossil fuel. Undoubtedly, the necessity of accepting this principle in the previous eras is undeniable with respect to the mode of constructions. Perhaps only due to the great diversity of materials and new technologies in the contemporary era, such a principle in buildings has been forgotten. The question of optimizing energy consumption in buildings has attracted a great deal of attention in many countries and, in this way, they have been able to cut down the consumption of energy up to 30 percent. The energy consumption is remarkably higher than global standards in our country, and the most important reason is the undesirable state of buildings from the standpoint of energy consumption. In addition to providing the means to protect the natural and fuel resources for the future generations, reducing the use of fossil energies may also bring about desirable outcomes such as the decrease in greenhouse gases (whose emissions cause global warming, the melting of polar ice, the rise in sea level and the climatic changes of the planet earth), the decrease in the destructive effects of contamination in residential complexes and especially urban environments and preparation for national self-sufficiency and the country's independence and preserving national capitals. This research realize that in this modern day and age, living sustainably is a pre-requisite for ensuring a bright future and high quality of life. In acquiring this living standard, we will maintain the functions and ability of our environment to serve and sustain our livelihoods. Electricity is now an integral part of modern life, a basic necessity. In the provision of electricity, we are committed to respecting the environment by reducing the use of fossil fuels through the use of proven technologies that use local renewable and natural resources as its energy source. As far as this research concerned it is completely necessary to work on different type of energy producing such as solar and CPVT system.

Keywords : energy, photovoltaic, thermal system, solar energy, CPVT

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