

Title:	Thermodynamic investigation of solar energy conversion into work
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Abstract:	Using a simple thermodynamic upper bound efficiency model for the conversion of solar energy into work, the best material for a converter was obtained. Modifying the existing detailed terrestrial application model of direct solar radiation to include an atmospheric transmission coefficient with cloud factors and a maximum concentration ratio, the best shape for a solar concentrator was derived. Using a Carnot engine in detailed space application model, the best shape for the mirror of a concentrator was obtained. A new conversion model was introduced for a solar chimney power plant to obtain the efficiency of the power plant and power output.