

## Electric Power Generation by Thermoelectric Cells and Parabolic Solar Concentrators

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**Abstract :** In this paper, design details, theoretical analysis and thermal performance analysis of a solar energy concentrator suited to combined heat and thermoelectric power generation are presented. The thermoelectric device is attached to the absorber plate to convert concentrated solar energy directly into electric energy at the focus of the concentrator. A cooling channel (water cooled heat sink) is fitted to the cold side of the thermoelectric device to remove the waste heat and maintain a high temperature gradient across the device to improve conversion efficiency.

**Keywords :** concentrator thermoelectric generator, CTEG, solar energy, thermoelectric cells

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