

**International Energy Journal, Volume 8, Issue 4, December
2007**

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Solar Parabolic Trough Collector Hot Water System

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Abstract

Several parabolic trough solar thermal systems have been built and operated throughout the world for different applications. In this paper, a complete description of a newly developed FRP solar parabolic trough collector (PTC) hot water generation system with a new embedded electronic controlled one axis solar tracking system is presented. The performance of the new PTC system and the new tracking system is evaluated and compared with the theoretical values. An economic analysis of the new PTC system in comparison with an existing conventional electric water heating system is carried out.

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