عنوان مقاله:

Simulation of a new hybrid solar and organic cycle as a combinedcooling, heat and power (CCHP) unit in off designcondition

محل انتشار:

کنفرانس بین المللی علوم، مهندسی و فناوری های محیط زیست (سال: 1394)

تعداد صفحات اصل مقاله: 12

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خلاصه مقاله:

In this paper, using parabolic mirrors, a solar field was designed, which was related to a storage tank for a residential complex in the city ofTafreshlocated inthe center of Iran. The design was performed for the existing oils: VP1, THERMINOL 66, THERMINOL 59.Finally,considering anorganiccycle withR123 as working fluid and assuming a minimum length required for oil flow rate to reach a specified temperature, VP1 was selected both asworking fluid and for the storagesystem. Position of single-effect bsorption chiller in the outlet of the organic turbine in hot seasons for cooling and also using a condenser in cold seasons due to the lack of need for cooling provide the possibility of selecting two different working pressures in the cycle, which leads to increased storage in winter. The overall performance of solar cycle was calculated with variable electrical demand load of 63%. In off-design condition, on the longest day of the year, the considered cycle was shown to be able to uninterruptedly generate power, cooling, and heating for 20 h for hygienic purposes. Also, it could generate power and heating for 10 h and 50 min on average on .the shortest day of the year

کلمات کلیدی:

CCHP,Solar, organic cycle,Storage, off-design

لینک ثابت مقاله در پایگاه سیویلیکا: