

Energy and Environmental Technology



Title

Dual heat source collector and dual heat source energy system

Abstract

This invention is a dual heat source collector and dual heat source energy system, the heat energy is specially generated by sunlight and is used as the power source of the Stirling engine. When the heat energy generated by the sun is insufficient, the burner can be used to generate heat to make the Stirling engine continue to operate and generate power.

Benefits

The existing concentrated solar power generation system uses the solar focus tracking system to focus on the sunlight direction and uses the resulting high temperature to drive the Stirling engine for electricity generation. It can only use solar energy alone, and its heat collection structure is not able to use auxiliary heat sources. Because the existing technology can only use solar energy which can only function when sunlight is available, thus it belongs to passive power generation. When the engine is functioning during the day if the intensity of sunlight changes with time, the ability to generate electricity will also change accordingly. Therefore, the output power is not stable. Usually, an additional energy storage system (Energy storage system) must be added to store electric energy with a large battery or with a melting pot. The thermal energy stored in the salt system continues to drive the Stirling engine to maintain the power generation system. However, whether it is stored in the form of electric energy or thermal energy, the cost of the device must be increased, and the storage time is quite limited. In long-term rainy weather or in areas lacking sunlight, power generation cannot be generated. The double heat source collector structure invented by this technology can integrate combustible gas combustion energy and focused solar thermal energy, use solar energy to generate electricity when there is sunlight, and uses clean combustion to provide auxiliary heat sources when sunlight is absent such that Stirling engine generates electricity. In this way, the power generation can be made continuously without being affected by sunlight conditions, and the original passive power generation can be changed into an active power generation system that can operate continuously for 24 hours.

Industry
Categories

Green energy industry, power generation field

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