

ABSTRACT

Disclosed is a solar energy generation system using a biomass boiler (6) as an auxiliary heat source, comprising a solar energy light gathering and heat collecting device, a biomass boiler (6), a turbine generator system, wherein the solar energy light gathering and heat collecting device uses water as a working medium, and adopts medium pressure solar energy vacuum heat-collecting pipes (13) in a serial/parallel matrix combination, an outlet of the solar energy light gathering and heat collecting device is in communication with a bottom of a drum (6a) of the biomass boiler (6) via a second control valve (22), and a steam outlet of the biomass boiler drum (6a) is connected with a cylinder (3) of a turbine generator (1). The generation system uses the solar heat source and the biomass heat source alternatively according to weather variations, so the system operates stably, thereby improving the device utilization. Further disclosed is a generation method using the generation system.