

COMPACT SOLAR POWER

The purpose of this project is to develop a market-competitive small-scale solar-power system producing 20 W of continuous power without utilizing photovoltaic technology. The proposed design incorporates a reflective parabolic trough and solar tube to heat a Stirling engine, which powers an electric generator attached to the load and a battery for storage. The key technical issues include the dimensioning and material selection for the trough, engine cylinder and heat exchangers, flywheel and piston linkages, and support structure. Based on preliminary analysis, the design is feasible, but is probably not competitive with existing technology.

