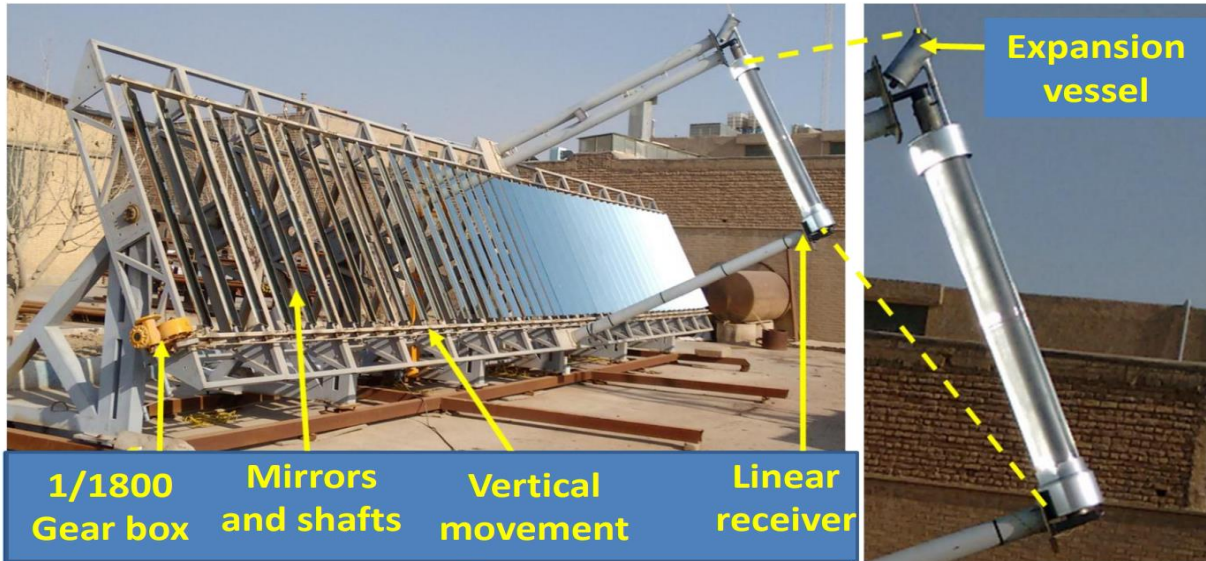


Hybrid Solar PV-thermal, dual axis, linear Fresnel collector



Linear collectors such as parabolic troughs are the most widely used type of large and medium scale industrial collector. However, they have not yet been commercialized for smaller-scale use, because, on a smaller scale, the length of the collector is insufficient to achieve high temperatures. **Our collector solves this problem because of the particular design of our new dual axis solar tracker and vacuum tube metal-glass receiver. It uses concentrated solar energy to generate electricity and thermal energy (e.g. warm water), simultaneously.**

The collector is a dual axis type that is appropriate for installation on roofs of residential and commercial buildings, in backyards and on farms. The unique design feature of this invention is a hollow metal receiver contained in (Pyrex) glass tube to increase the thermal efficiency. Because of the large diameter of this receiver, high efficiency PV cells with large dimensions (125x125 mm and larger) can be set on the surface. Because of modular structure, the scale, and concentration ratio can be adjusted to the customer need and transportation is of lower cost.

Specifications of GREENBMG solar hybrid PV-thermal collector

Parameter	Value
Number of mirrors and dimensions	According to the customer need (mirrors of 180 cm x 20 cm)
Total mirror area	According to the number of modules (1.2 m ² , each module area)
Receiver length	Up to 300 cm
Vertical sun tracking	0 – 90 °
Horizontal sun tracking	0-180 ⁰ , 0.1° precision
Receiver type and dimensions	Metal core vacuum glass tube of 23 cm diameter and 180 cm length