

Concentrated Solar Power – Trough Frames and Technologies



Gossamer Space Frames first developed its patented Organic Connector™ space frame technology in 2004 for use on three-sided structural trusses. Gossamer's patented Organic Connector™ structural technology frees designers and engineers from many of the conventional limitations in double-layer grid space frames, which are three dimensional structures with advantageous load distribution properties. Gossamer Space Frames is now a leading innovator in space frame technologies for utility-scale solar projects and other applications, such as structural, architectural, and scientific applications.

Mirror trough frames designed and engineered by Gossamer (and using Gossamer's patented Organic Connector™ technology) were successfully deployed beginning in 2006 at Acciona Solar Power's pioneering Nevada Solar One project, a 64 megawatt concentrated solar power ("CSP") installation. Nevada Solar One utilizes more than 9,000 mirror trough frames designed and engineered by Gossamer.

Compared with other frame designs tested for potential use on the Nevada Solar One project, the Gossamer frames were selected because they:

- Used 30% less aluminum, producing a 30% reduction in frame weight, thereby lowering material, shipping and assembly costs;
- Used 35% fewer components overall;
- Used 80% fewer fasteners;
- Required approximately 1/3 the time for field assembly;
- Provided exceptional frame rigidity at all angles of elevation;
- Eliminated the need to field align the frames and mirrors;
- Allowed the mirrors to achieve a focusing accuracy 37% better than the competitors' designs (N.R.E.L. VSHOT measurements), thereby achieving higher energy production rates; and
- Remained the least expensive to fabricate and assemble, thereby directly contributing to a lower levelized cost of energy ("LCOE").



Concentrated Solar Power – Tower/Heliostat Solutions



Gossamer's patented structural technologies, proprietary designs, and continuing technological innovations are also uniquely well-suited for tower/heliostat applications – at any scale.

Gossamer's patented structural technologies and advanced designs can provide consistently superior focal accuracy (and higher energy production) at lower costs. Meanwhile, Gossamer is also developing technological innovations in the field of energy storage.

Concentrated Solar Power – Dish Solutions

Gossamer's structural technologies (including the patented Coaxial Joint System™ and the patented Organic Connector™) are uniquely well-suited for the next generation of large-scale CSP dish installations. As with its CSP trough technologies, Gossamer can provide consistently superior focal accuracy (and hence greater energy production) for dish applications, at lower costs. Gossamer can also provide superior armature designs utilizing its patented technologies and exceptional design capabilities.

Concentrated Photovoltaic Solutions

Gossamer's patented structural technologies, proprietary designs, and continuing technological innovations are also well-suited for concentrated photovoltaic ("CPV") applications – at virtually any scale.