

Affordable Residential Solar Tracking

To track or not to track?

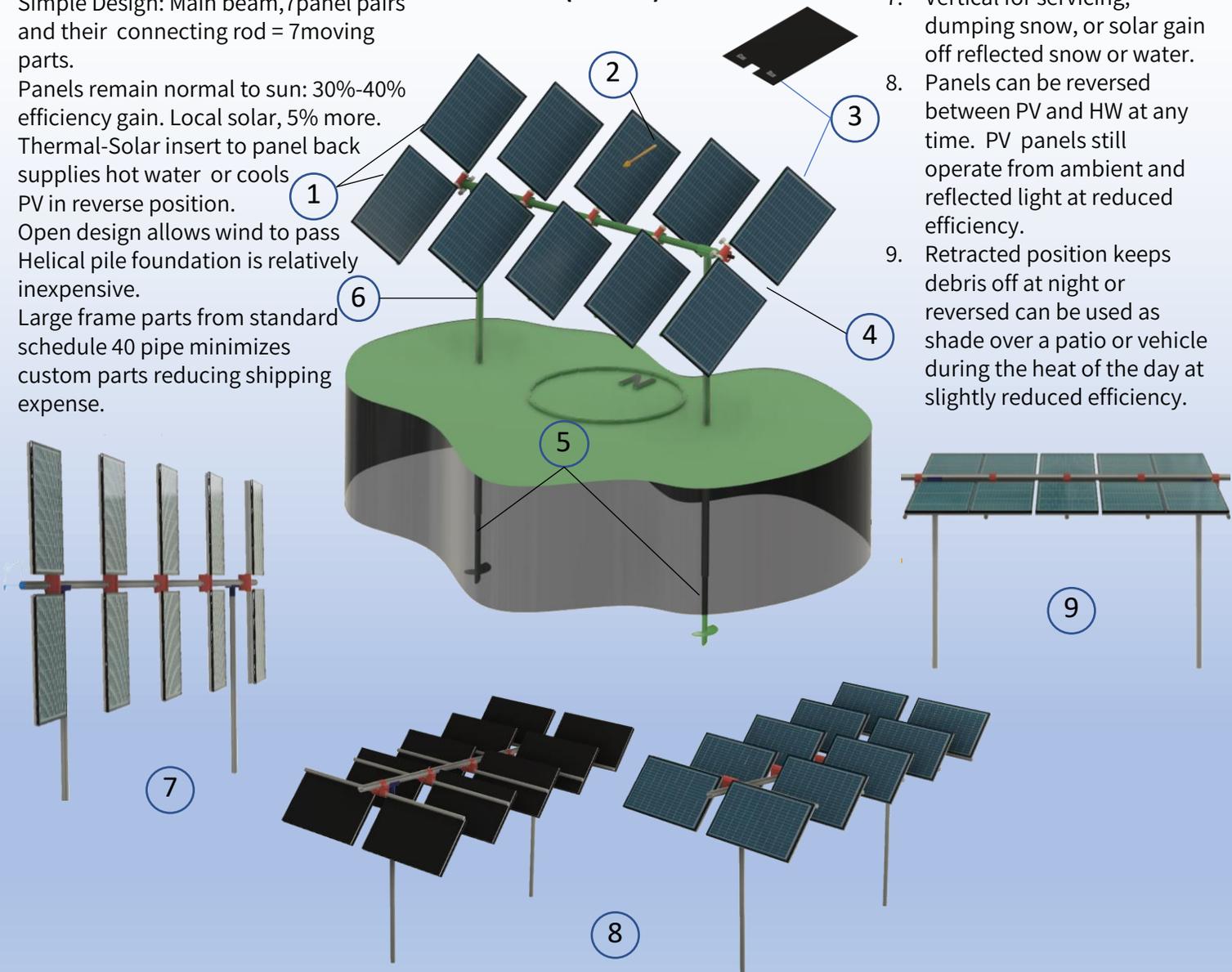
"In almost all scenarios, especially for residential solar systems, solar trackers are not worth the additional investment. This is why solar trackers aren't widely used in the residential solar industry." <https://www.solarreviews.com/blog/are-solar-axis-trackers-worth-the-additional-investment#>

The above statement reflects conventional wisdom in the residential solar market, but tracking the sun results in far greater efficiency and a much better use of the materials that constitute the make-up of the solar panels. Locally generated solar power eliminates transportation and distribution losses and can provide emergency power when grid power is down. Cost/Benefit for local solar installation is improved because the direct benefit to the consumer is doubled or tripled due to the fact that the savings are at retail rather than wholesale rates. Environmentally, economically, or simply practically, solar tracking makes sense. Our mission with this project at DFI Enterprises, is to reinvent local solar tracking such that **to track** is the obvious answer to the leading question, and the one given above is obsolete.

Introducing the Cantilevered Reversible Solar Tracker (CRST)

1. Simple Design: Main beam, 7 panel pairs and their connecting rod = 7 moving parts.
2. Panels remain normal to sun: 30%-40% efficiency gain. Local solar, 5% more.
3. Thermal-Solar insert to panel back supplies hot water or cools PV in reverse position.
4. Open design allows wind to pass
5. Helical pile foundation is relatively inexpensive.
6. Large frame parts from standard schedule 40 pipe minimizes custom parts reducing shipping expense.

7. Vertical for servicing, dumping snow, or solar gain off reflected snow or water.
8. Panels can be reversed between PV and HW at any time. PV panels still operate from ambient and reflected light at reduced efficiency.
9. Retracted position keeps debris off at night or reversed can be used as shade over a patio or vehicle during the heat of the day at slightly reduced efficiency.



Local Solar; Global Impacts
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