Flexible Assembly Solar Technology

BrightSource

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PROJECT OBJECTIVES

Goal: Reducing solar field construction costs through improvement of the heliostat design, assembly methodology and assembly tools

Innovation: The Heliostat assembly process is currently implemented indoors in a controlled environment. The new Heliostat design and the proposed assembly process will be quicker than before and will not require a controlled environment, thus eliminating the need for the construction of expensive, centralized assembly facilities and for permitting processes associated with such construction.

APPROACH

- The proposed assembly process is based on small, cost-effective assembly cells (to be designed and manufactured).
- The assembly cells can be rapidly deployed and relocated both within the solar field and between projects. This will reduce the costly time period between ground breaking and the start of actual construction, ensure production volume scalability, increase use rate, and ultimately contribute to reduction of construction costs.

KEY RESULTS AND OUTCOMES

- Main FAST contract awarded and signed with an automation company
- Conceptual development completed
- FAST alpha prototype platform assembled and tested
- Heliostat prototype assembly using the alpha platform initiated
- Mirror Assembly Carrier preliminary design performed.
- Conceptual design of manufacturing control software, performed.

NEXT MILESTONES

- Preliminary FAST platform design:
  - System engineering and main electrical components definition
  - Preliminary mechanical design
  - Preliminary electrical design
- Preliminary FAST laydown area development design
- FAST alpha testing conclusion and summary
- Advanced computerized production simulation will be finalized to confirm required production rates