



Heliostat Consortium Seminar Series

Brought to you by the Resource, Training, and Education (RTE) topic area



Abstract:

This presentation will highlight 2 recent analyses. The first, a bottom-up manufacturing and cost analysis, to estimate the installed cost of 2 heliostat designs. This includes (1) a commercial design, the Stellio; and (2) an advanced/developing heliostat design, the SunRing. The SunRing is designed and developed by Solar Dynamics of the United States, and the Stellio is developed primarily by Schlaich Bergermann und Partner (sbp) sonne GmbH. For both designs, the bottom-up manufacturing cost estimates included all components for manufacturing and assembly in a manufacturing facility (e.g., struts and frame) using Design for Manufacturing and Assembly (DFMA) software, and the purchased parts (e.g., mirrors, control systems, and drives). The field-assembly and construction activities were also considered to determine the installed cost of the modeled solar fields. The second analysis highlights for a heliostat supply chain. The CSP supply chain (parabolic trough and heliostat) is primarily composed of plentiful commodity materials such as steel, aluminum, and glass, which can often be sourced within the domestic market where generating plants are constructed. Although specialty components are required for CSP solar field components—including heliostat mirror panels—these specialty components constitute about 30-50% of total system installed costs. Only a few companies and countries, including the United States, have developed the capacity to supply such specialty components.

Bio:

Mr. Parthiv Kurup, CSP Cost and Systems Analyst, provides objective analysis for guiding CSP investment decisions. He has lead the CSP bottom-up analyses for parabolic troughs and heliostats. He works on techno-economic analysis (TEA), cost modelling, supply chain and manufacturing analysis. Subject areas of interest and expertise include CSP, renewable thermal energy systems for process heat, and advanced manufacturing processes.

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Host: Dr. Rebecca Mitchell

Title: Bottom-up Analyses
for Two Heliostat
Collectors and an Initial
Heliostat Supply Chain

When: June 8th
1-2 PM MDT

Zoom:
<https://nrel.zoomgov.com/j/1619210627?pwd=T3o4QlEweHBlc01xemxSaTRBZmpCUT09>