



NREL + ABENGOA

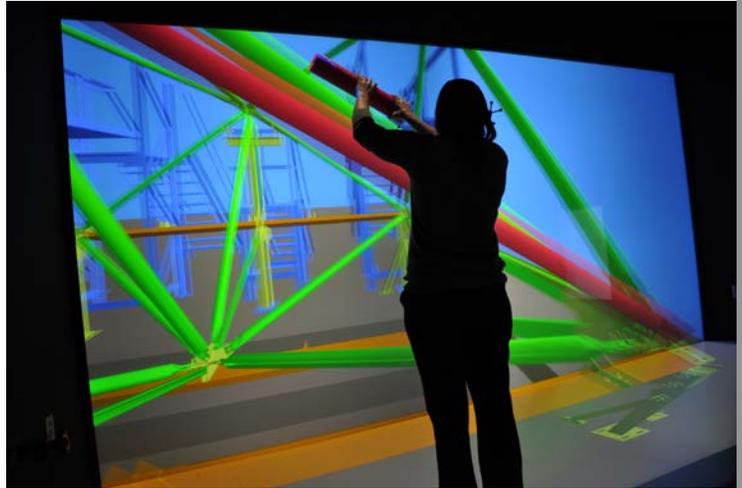
NREL is collaborating with solar power company Abengoa at the Energy Systems Integration Facility (ESIF) to develop a new, more cost-effective manufacturing process for critical components of concentrating solar power systems. Concentrating solar power is positioned to become a major source of renewable electricity generation in the United States. The goal of the partnership is to lower the cost of the technology—currently a barrier to more widespread implementation—by introducing efficiencies and automation into the manufacturing line.

R&D STRATEGY

The ESIF's unique Insight Center combines state-of-the-art visualization and modeling tools to provide on-site and remote viewing of experimental data, high-resolution visual imagery, and large-scale simulation data to promote knowledge discovery in energy systems integration. The Insight Center uses three-dimensional visualization to allow engineers to see and interact with their data and models at the human scale. Using the high-resolution, large-scale display, researchers now have the visual "real estate" to lay out a significant amount of data, which will enable them to analyze large-scale simulations, ensembles of simulations, and highly detailed visual analytics displays. NREL's collaboration with Abengoa aims to help Abengoa create a new assembly method for solar thermal electric trough structures that uses automation to improve accuracy and increase throughput.

IMPACT

Engineers usually need to wait until a prototype is built before they can test their design at actual scale. With an immersive virtual environment like the Insight Center, however, engineers are able to see and work within their design at full scale before the prototype stage, which allows them to identify and eliminate design flaws earlier on in the process. For companies like Abengoa, this testing results in drastically reduced prototyping costs and helps them to lower the cost of solar energy technologies by achieving efficiencies in the manufacturing process.



An Abengoa researcher uses the ESIF's three-dimensional visualization and modeling tools to develop more cost-effective and efficient solar energy storage technologies. *Photo from Abengoa, NREL 0274*

PARTNERSHIPS

Partner with NREL at the ESIF

User facility access to the ESIF is awarded through the review and approval of user proposals, depending on the scientific merit, suitability of the user facilities, and the appropriateness of the work to DOE objectives, and includes a signed user agreement for the facility.

For more information, please visit:

www.nrel.gov/esi/working_with.html

or contact:

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The Energy Systems Integration Facility (ESIF) at the National Renewable Energy Laboratory (NREL) provides the R&D capabilities needed for private industry, academia, government, and public entities to collaborate on utility-scale solutions for integrating renewable energy and other efficiency technologies into our energy systems.

To learn more about the ESIF, visit: www.nrel.gov/esif.

National Renewable Energy Laboratory

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