



NREL + SOLECTRIA

NREL is partnering with solar inverter manufacturer Solectria at the ESIF to develop 500- and 750-kilowatt photovoltaic (PV) inverters with advanced features that can support the electric grid.

R&D STRATEGY

The ESIF's utility-scale power hardware allows Solectria to test its inverters using simulated utility grid and solar PV emulation so researchers can see the impact of the inverter's advanced features on power reliability and quality. The ESIF's grid simulator allows researchers to subject the solar inverter to practical abnormal grid conditions, and the solar PV simulator allows re-creation of solar variations due to weather. This unique testing capability allows Solectria to test its inverter's controls and functionality at full power—and determine how its integration supports and impacts the grid under a variety of conditions.

IMPACT

This work supports the development of PV inverters that can provide bulk system support to utilities under fault conditions—which will ultimately allow for increased penetration of solar on the grid.



Solectria is leveraging the unique capabilities of the ESIF to test its advanced inverter technology. *Photo by Dennis Schroeder, NREL 30499*

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

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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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