

Photovoltaic Panel Installation at the National Renewable Energy Laboratory B-Roll

Scene-by-Scene Description

Get the facts behind the footage available on the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) B-Roll Web site at eere.energy.gov/news/b_roll.cfm.

Video Title: Solar PV Roof Installation B-Roll

Video Only/No Audio

Location: Golden, Colorado

Shoot Date: September 2, 2010

Total Running Time: 1:19

Scene 1: 00:05: Solar photovoltaic (PV) panels are installed on the roof of the Research Support Facility at the National Renewable Energy Laboratory (NREL). Like all solar technologies, PV systems function most efficiently in the southwestern United States, which receives a large amount of solar energy. These PV panels are just one part of this NREL office facility's whole-building design for exceptional energy efficiency and sustainability.

Learn More about Solar Photovoltaic Systems

Solar electric systems, also known as photovoltaic (PV) systems, generate power without pollution as they convert sunlight into electricity. The basic building blocks of a PV system are solar cells, which consist of semiconductor materials. When these materials absorb sunlight, the solar energy knocks electrons loose from their atoms; this phenomenon is called the "photoelectric effect." These free electrons then travel into a circuit built into the solar cell to form an electrical current. To produce larger quantities of power, groups of solar cells can be interconnected to form panels or modules. If even more power is needed, several modules can be installed on a building to form a PV array.

Comprehensive information about PV systems and other solar technologies can be found on the EERE Solar Energy Technologies Program Web site at eere.energy.gov/solar. Additional facts about NREL's Research Support Facility can be found at nrel.gov/sustainable_nrel/rsf.html.