

Photovoltaics

What is this Technology?

This project includes high efficiency solar panels that will generate two megawatts of renewable energy per year, and a “Solar Lab” where the performance of four different types of solar technology will be researched by GSA and the Department of Energy’s Sandia National Laboratories to determine which solar panels work best in the Midwestern climate.

Why is GSA Interested?



RENEWABLE POWER The EPA Act 2005 requires that, by 2013, 7.5% of electricity consumed by the Federal government must come from renewable energy sources to the extent it is economically feasible and technically practicable. A solar lab designed to test new equipment for technical performance and potential life-cycle cost effectiveness can be of value to assist with how GSA decides to meet these legislative requirements. Evaluation of installed costs, technical performance, and ongoing maintenance issues will allow GSA to develop consistent guidance for GSA energy managers.



COST EFFECTIVENESS In public building applications, installed costs for conventional PV systems were between \$8 and \$9/watt in 2009, but costs have been rapidly decreasing since 2009. In general, PV systems are not cost effective without considerable financial incentives in the form of rebates and/or the sale of renewable energy credits (RECs). Little is known about the comparative performance of different PV technologies in diffuse climates such as the Midwest.



OPERATIONS & MAINTENANCE In a grid-connected commercial systems study from 1998-2003, most of the operations and maintenance (O&M) cost for conventional PV was a result of inverter adjustments in the first 6 months. This study will be verified.



APPLICABILITY PV panels are technically feasible in most locations. However, there is little data on the energy production, costs, performance, and reliability of such systems over time in a cold, cloudy environment.

Measurement & Verification

The Green Proving Ground program has commissioned the Sandia National Laboratories to perform measurement and verification (M&V) on photovoltaics at the Major General Emmett J. Bean Federal Center in Indianapolis, Indiana. Findings from that investigation will be available in June 2012.