

# CLIMATE LEADERS

CORPORATE CLIMATE CHANGE PROJECTS - CASE STUDY #1

## Applied Materials

Solar Panel Installation at Corporate Office Buildings



### Company Overview

Applied Materials, Inc. is the global leader in nanomanufacturing technology solutions with a broad portfolio of innovative equipment, service and software products for the fabrication of semiconductor chips, flat panels, solar photovoltaic cells, flexible electronics and energy efficient glass.

Founded in 1967, Applied Materials creates and commercializes the nanomanufacturing technology that helps produce virtually every semiconductor chip and flat panel display in the world. The company recently entered the market for equipment to produce solar arrays and energy efficient glass.

To support its customers, Applied Materials employs approximately 13,000 people throughout the world. In fiscal year 2008, Applied Materials recorded net sales of U.S. \$8.1 billion.

### Vision

To meet its corporate goal of reducing emissions by 20 percent by the year 2012, Applied Materials demonstrated their commitment to solar power by installing photovoltaic panels at a number of its buildings around the world.



Solar panel tracker system covering employee parking lot

### Project Description

In 2007 and 2008, Applied Materials added 1.99 megawatts of solar energy to its research and development campus in Sunnyvale, California, making it the largest solar system in the San Francisco Bay area and the largest system in the United States to be installed at an existing corporate complex. The project consists of two major solar components: a rooftop installation of 4,653 panels (completed in late 2007) and a tracker system featuring 3,344 panels that covers the employee parking lot (completed in mid 2008).

Applied Materials also installed solar panels at their office campuses in Austin, Texas and Xi'an, China. The Texas location generates 24 kilowatts and is one of the largest systems in the Austin area. The Xi'an site generates 56 kilowatts and is currently the only installation in the Shaanxi Province of China.

### PROJECT SPOTLIGHT

- Annual Energy Savings: \$1.28 million
- GHG Reduction: 2,700 metric tons of CO<sub>2</sub>e
- Payback Period: 10-11 years

**Climate Leaders Goal: reduce total global GHG emissions by 20 percent from 2006 to 2012**

Climate Leaders is an EPA industry-government partnership that provides guidance and recognition to companies developing long-term climate change strategies. Through program participation, companies create a credible record of their accomplishments, reduce their impact on the global environment, and identify themselves as corporate climate leaders.

# APPLIED MATERIALS



Over 4,600 solar panels installed on the rooftop of Applied Materials' Sunnyvale, Ca. corporate complex

## Benefits and Energy Savings

Applied Materials estimates its annual energy savings from the Sunnyvale installation to be \$1,280,000, or approximately 4,000 megawatt hours of electricity and 2,700 metric tons of carbon dioxide - the equivalent of removing 495 passenger vehicles from the road.

The installation's payback period is projected to be 10 to 11 years, which includes two financial incentives paid by their utility company under the California Solar Initiative. The rooftop system qualified for a one-time rebate based on the system's size, whereas the parking lot installation qualified for a \$0.34-per-kilowatt-hour discount that ties into the system's electricity output. This performance-based rebate will be phased out over a five-year period.

## Project Challenges

Applied Materials experienced no legislative setbacks related to zoning requirements or state permits and found the city, state, and utility company to be very cooperative with their solar project.

There were a few minor construction concerns associated with altered traffic patterns during construction and removal of a number of trees blocking sunlight to the parking lot panels. Trees were replanted elsewhere on the Sunnyvale campus.

## Communication Strategy

In preparation of the Sunnyvale installation, Applied Materials sent out intranet messages to its employees and put up posters informing its workers about the upcoming project, its benefits, and the potential disruption in parking patterns.

Upon the solar project's completion, Applied Materials held an employee-only dedication and reception followed by a formal ribbon-cutting ceremony featuring Governor Schwarzenegger a few months later.

In addition, Applied Materials keeps its employees informed of their solar projects via an interactive, intranet website that highlights their projects around the world, offers real-time information about power generation, and tallies current and future environmental benefits and energy reductions.

## Future

Applied Materials will continue with its commitment to reducing emissions and resource consumption by identifying additional locations to install solar panels. They are looking into constructing the largest solar system on the island of Singapore, which could generate approximately 400 kilowatts at their new, LEED-certified manufacturing facility.