

# Simple Solar Electric Systems

Simple Solar fuels success with Google SketchUp.

## About Simple Solar Electric Systems

For many people, a commitment to improving the environment culminates in the search for a photovoltaic (PV) system that will generate renewable energy from the sun. In Colorado, the search often ends with [Simple Solar](#), a company with more than 15 years in the solar energy business. A full-service solar electric provider located in Boulder, Colorado, Simple Solar installs solar energy systems for residential, commercial, and non-profit organizations that not only generate many kilowatt-hours of electricity, but also prevent thousands of pounds of CO<sub>2</sub> from entering the atmosphere annually.

For people who make the decision to pursue the solar path, there is an additional reward in the form of rebates. “What’s exciting is that Xcel Energy customers in Colorado can take advantage of the Solar Rewards program, which provides up to a \$4.50 per watt rebate to sun-powered customers who install photovoltaic systems, making it more affordable and attractive for residences and businesses to go solar,” says Project Manager Drew Kundtz.

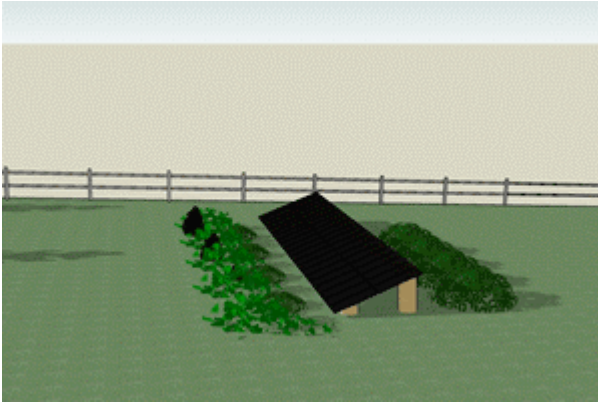
## Approach

Designing and installing solar energy systems may sound simple, but it requires sophisticated knowledge and the ability to synthesize a number of variables unique to each potential site. With every installation, Simple Solar must determine the best roof or ground-based location and the appropriate size for the customer’s PV array. Regardless of the location, engineers must size up the area, gauge the roof or ground pitch and orientation, and analyze shading from trees, vents, pipes or other obstructions that may prevent the PV array from maximum energy production. Even spacing of rafters on a roof can have a significant impact on the successful design and installation of a PV system.

Then there’s the matter of aesthetics: customers want to be able to visualize how their PV array will look before it is installed so there are no surprises and they are pleased with the final result. Simple Solar constantly looks for ways to help customers accurately visualize installations and instill more confidence in the desire to move forward with what, for most people, is a major investment.

Simple Solar also must conduct sophisticated site-shading analyses. The company previously relied solely on traditional analog tools that require employees to climb up onto roofs, capture photos and then analyze them using specialized software to determine how shade will affect each installation. Says Kundtz, “2D CAD programs have really no ability to do solar shading analysis, and traditional analog tools are fast but lack a certain degree of accuracy. After all, we’re having to take digital photos in conditions of high winds, freezing rain, slick snow on the roof, you name it. All if this can affect the accuracy of the images captured for a site shading analysis,” he says.

## Result



At Simple Solar, SketchUp is being used to create and showcase rich, accurate 3D representations of solar arrays prior to installing them, a major benefit for sales and customer relations that keeps everyone on the same page. “Before committing to the final installation, customers can see in rich 3D how their array will look before the deployment occurs,” notes Kundtz. “Our customers typically love the final result, but SketchUp is like an insurance policy because every one can accurately visualize the array on-site beforehand.”

Simple Solar is also using SketchUp for virtual shade analysis that shows where and how a solar array sits on a property and details visually what potential shading concerns are evident. Once the sale is closed, Simple Solar can use SketchUp to refine panel placement based on virtual shade analysis. Says Kundtz, “We can also use information from SketchUp for our string layouts, which balance panel voltage across the array. We’ve found that SketchUp is just as accurate, or in some cases, several percentage points more accurate than the conventional analog tools we normally use.”

For Simple Solar, SketchUp delivers a distinct competitive advantage in an industry that is rapidly becoming overheated. Thanks to plentiful sunshine, rebates, and other variables, companies are converging from other states to compete in the solar energy business in Colorado. Says Kundtz, “With cutting-edge tools like SketchUp, a long, trusted history as a local company, and a strong referral base, we are well-positioned for continued success in bringing solar energy to Colorado.”

## About Google SketchUp