

# Use Google's New Mapping Tool to See How Much Solar Panels Would Benefit Your Home

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## With Project Sunroof, Google hopes to make it easier for more households to make the switch to renewables.

Solar power is [cheaper than buying from the grid](#) in cities like Boston, San Francisco, and San Jose—even without any government credits. Now, if you live in one of those cities, a new tool from Google will calculate exactly how much you can save by zooming into your roof via Google Maps.

[Project Sunroof](#) crunches weather data and then creates a 3-D model of the roof and nearby trees to figure out how much sunlight or shade will fall on the panels and how much money someone can save. I typed in my parents' address, and it estimated 1,935 hours of usable sunlight per year, and \$15,000 savings over 20 years.

Google engineers were inspired to create the tool after noticing how many people were searching for information on getting solar panels (and seemingly not finding what they needed). Similar tools have been around for a while—a startup called RoofRay was using Google Maps to calculate solar potential as long ago as 2008, and an MIT spinoff company Mapdwell [won Fast Company's Innovation By Design award](#) last year. But Google thinks it can do better using its own expertise in maps and machine learning, combined with the high-resolution imagery available on Google Earth.

“Although aerial imagery data has been available to the world for some time, making sense of it all can be a technical challenge,” says Barry Fischer, who leads energy communications for Google. “In particular, it's not always easy to figure out what in an aerial map is actually a building in the first place, as compared to other surfaces, like driveways, lawns, or trees. Working with Google's deep learning team, we trained a neural network to figure out which points on the map were actually buildings and roofs, which represented possible locations for solar panels.”

Using a neural network—the same approach used to recognize faces online, or automatically translate text—engineers were able to eliminate 75% of the errors that are found in more traditional techniques. Google is hoping that making it easier to find quality information on solar power will make it more likely that people make the switch.

“We designed Project Sunroof to make it easy for people to understand the value of solar for their roof, and make it easy to take the next step,” says Fischer. “We hope the tool can accelerate the adoption of solar and empower households to save money on their power bill.”

For now, it’s still a pilot project, but over the next few months, the company will consider how to roll it out in the rest of the country.

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