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Solar and snow: It works!

November 21, 2013 - Green Buildings

It's almost winter in New England, and you know what that means: cold temperatures, gusty winds and plentiful snow. And while those conditions are great for skiing, sledding and snowball fights, how do they work for generating renewable energy via solar? The answer might surprise you. While it's true that solar systems do not generate energy during storms that block out the sun completely, overall solar PV (photovoltaic) systems can be quite efficient during the winter months.

First, it's important to remember that the output for your system is calculated on an annual basis, and already accounts for stormy periods (which can happen throughout the year, not just during winter) and short daylight hours during the winter months. So those blizzards and Nor'easters that cause variations in output have already been accounted for in the design of the system.

Second, PV panels, like most electronics, work best in cooler temperatures. The output of silicon solar panels starts to go down in very hot weather.

Third, Mother Nature helps out when snow does accumulate enough to blanket the panels. Snow on certain roofs with solar panels will actually melt faster than snow on roofs without solar panels, because of the reflection. The sun naturally reflects on the solar panel and then onto the snow-covered roof, creating a mirror-type effect called the albedo effect that speeds the melt. It's the same reason skiers can get a bad sunburn on sunny winter days.

Fourth, melting snow is a natural panel cleaner, removing the layers of pollen, dust, bird droppings and leaf debris that accumulated during the preceding months.

When it snows a significant amount, it's tempting to go up on the roof to try to clear off the panels, but does this make sense? Removing snow can help aid production if there are several storms in a short period. The panels do emit heat, allowing the snow to start to melt and slide off, but generally Mother Nature will take care of the melt for you, saving a trip to a potentially slippery roof. Lastly, remember the structure of the roof has been reviewed as part of the initial design to account for "snow" load before the project is permitted to proceed by the local building department.

An experienced solar PV developer can help you determine the annual output for your system and answer the questions above based on the specifics of your roof and building.

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