

**CORRECTION TO THIS ARTICLE**

This article incorrectly said that homeowner Carol Rosen has vinyl windows. They are made of a composite.

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## Windows Aren't Always A Clear Path for Savings

In Quest to Boost Energy-Efficiency, Small Changes Might Have Bigger Payoff

By Terri Rugar  
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The big appeal of replacing your old windows with new energy-efficient ones is that they might save you money. A federal tax credit of up to \$1,500 adds to the attraction.

But there are other, cheaper ways to reduce energy bills, experts said. Replacing windows is "one of the last things you want to do," said Pascale Maslin, founder of energy auditor Energy Efficiency Experts. "First you want to seal up your house, and that takes more time than it does materials. Second thing, you want to get your house insulated."

Carol Rosen, who lives in a four-bedroom, 3,200-square-foot house in North Bethesda, spent about \$32,000 to get her 26 windows replaced.

Before, she said, "when a wind would come through, you could see the curtains billow."

She said she thinks she's saving money, but with energy costs going up, it's hard to tell. However, she no longer feels drafts between the windows.

Plus, she replaced wood windows with vinyl, so not having to paint them anymore has saved money and time.

There are many details involved in windows, but if you're interested in replacing yours, here are the basics.

-- *Before you replace your windows.* Nils Petermann of the Alliance to Save Energy recommends getting a home energy audit to help determine how to make your home, including windows, more energy-efficient. You may be able to get away with just replacing glass, which he says has improved a lot since the 1970s. You might just need weatherstripping or caulking to block holes. You may also be able to add interior or exterior storm windows or plastic window films to keep the hot and cold air where you want it.

Jim Conlon of Silver Spring-based Elysian Energy, which does energy audits, said window replacement is one of the least cost-effective ways to make your home more energy-efficient. Take that step if you have single-pane windows with metal frames or your windows are broken or rotting, he said.

Maslin said that with about \$100 and cans of foam and caulk, you can make your house's envelope tighter and avoid spending thousands of dollars on windows.

-- *The payback.* Windows last for decades. It can also take that long to see the payback on energy savings. Experts estimate that it can take seven to 20 years to recoup the costs of windows. The time depends on the climate, the windows you're replacing, what you're replacing them with, how much energy you use and how insulated the rest of your house is. Experts also said that it's unclear how much of the price of energy-efficient windows is recouped when a house is sold.

Energy Star, a government program that rates product efficiency, says that in Washington, replacing single-pane windows with those that it certifies can save about \$500 a year in energy costs in a 2,000-square-foot detached house with 300 square feet of windows.

-- *The numbers and letters of efficiency.* If you are going to replace your windows, Petermann said, the place to start is Energy Star (<http://www.energystar.gov>). For the program's purposes, the Washington area is in the North/Central region of the country.

A variety of number-letter combos measure a window's efficiency. Each component of the window has an R value, which indicates how resistant the material is to heat flow. The higher, the better.

The U-factor measures the entire window, and a lower number means it will be better at keeping the hot air on the side of the window where you want it. Those range from 0.01 to 0.99.

If a window says it's Low-E, that indicates there's a coating on the glass, which will contribute to a lower U-factor. The E stands for emissivity, and the coatings can help keep the heat from sunlight or ultraviolet rays from coming in.

Last is the SHGC, or solar heat gain coefficient, which measures how effectively a window blocks heat coming from the sun. The lower the SHGC, which ranges from 0 to 1, the better.

To qualify as Energy Star windows for Washington, the U-factor must be 0.40 or less and the SHGC must be 0.55 or less.

But the Energy Star rating doesn't necessarily mean the window qualifies for a tax credit -- at least as of June 1. If you have Energy Star-rated windows installed before then, you qualify for a federal tax credit of 30 percent of the window price, up to a credit of \$1,500. After that date and through 2010, the rules become more stringent. Windows must also have a U-factor and SHGC of 0.30 or less.

-- *The look.* Tommy Chaikin, co-owner of the Renewal by Andersen of Washington and Maryland, said that about a third of his customers are calling about new windows based on energy-efficiency, a number that has been boosted by the tax credit. Others are concerned about aesthetics or functional issues.

Aesthetics largely concern window material. The three basic choices are wood, vinyl and aluminum, though there are also windows made with composites. Aluminum conducts heat too readily to be a good choice in this climate. Vinyl doesn't have to be painted or replaced, and it can be reinforced to make it stronger. Your historic district or homeowners association might prefer wood, so be sure to check those rules. (Storm windows or other cheaper alternatives to replacement might be forbidden, too, so check before you buy.)

-- *One last warning.* It comes from Tom Herron of the National Fenestration Rating Council, which certifies that windows perform the way manufacturers say they do: Because windows last for decades, make sure you have a good warranty from a company that's going to stick around to back it up.

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