

## Real Estatew

# Study finds that energy-efficient homes often command higher prices

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It has been a controversial question in the home real estate market for years: Is there extra green when you buy green? Do houses with lots of energy-saving and sustainability features sell for more than houses without them? If so, by how much?

Some studies have shown that consumers' willingness to pay more for Energy Star and other green-rated homes tends to diminish during tough economic times. Others have found that green-certified houses sell for at least a modest premium over similar but less-efficient homes.

But now a new study involving an unusually large sample of 1.6 million homes sold in California between 2007 and early 2012 has documented that, holding all other variables constant, a green certification label on a house adds an average of 9 percent to its selling value. Researchers also found something they dubbed the "Prius effect": Buyers in areas where consumer sentiment in support of conservation is relatively high — as measured by the percentage of hybrid-auto registrations in local Zip codes — are more willing to pay premiums for green-certified houses than buyers in areas where hybrid registrations are lower.

The study found no significant correlations between local utility rates — the varying charges per kilowatt-hour of electricity in different areas — and consumers' willingness to pay premium prices for green-labeled homes. But it did find that in warmer parts of California, especially in the Central Valley, buyers are willing to pay more for the cost savings on energy that come with a green-rated property.

The research was conducted by Matthew E. Kahn, an economics professor at UCLA, and Nils Kok of Maastricht University in the Netherlands, currently a visiting scholar at the University of California at Berkeley. From their study's 1.6 million home transactions, Kahn and Kok identified 4,321 dwellings that sold with Energy Star, LEED or GreenPoint Rated labels. They then ran analyses to determine how much green labeling contributed to the selling price, eliminating all other factors contained in the real estate records: locational effects, school districts, crime rates, time period of sale, views and amenities such as swimming pools.

Energy Star is a rating system jointly sponsored by the Department of Energy and the Environmental Protection Agency that is widely used in new home construction. It rewards designs that sharply reduce operational costs in heating, cooling and water use, and that improve indoor air quality. The LEED certification, created by the private nonprofit U.S. Green Building Council, focuses on what it calls "sustainable building and development practices." Though more commonly seen in commercial development, it is also available as a rating for single-family homes. The GreenPoint Rated designation, created by a nonprofit group called Build It Green, is similar to LEED and can be used on newly constructed as well as existing homes.

The 9 percent average price premium for green-rated homes is roughly in line with studies conducted in Europe, where energy-efficiency labeling on new and resale houses is far more commonplace. Houses rated "A" under the European Union's system commanded a 10 percent average premium in one study, while dwellings with poor ratings sold at discount.

Labeling in the United States is a politically sensitive real estate issue. The National Association of Realtors has lobbied Congress and federal agencies to thwart adoption of any form of mandatory labeling of existing houses, arguing that an abrupt move to adopt such a system could have severely negative effects. A loss of value at resale because of labeling would be disastrous, the association has argued, particularly coming out of a housing downturn in which owners across the country have lost trillions of dollars of equity since 2006.

The National Association of Home Builders, on the other hand, has enthusiastically embraced labeling as a selling advantage for new houses. Buyers of such homes today are far more likely than purchasers of resale homes to find them rated as energy-efficient and environmentally friendly.

But there can be an environmental downside to new homes as well: Many are located in subdivisions on the periphery of metropolitan areas, leading to higher fuel expenditures — and more air pollution — because homeowners have longer commutes to work. Kahn and Kok make no secret about where they stand on labeling: More disclosure on the green characteristics of homes makes sense — and a lot of savings on energy consumption — for buyers and sellers.

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# Los Angeles Times

## Energy-efficient homes seem to sell faster, fetch higher prices

By KENNETH R. HARNEY

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Home energy efficiency and sustainability have been major policy priorities for the Obama administration, but lurking in the background are two consistent questions: Beyond the documentable savings on utility bills, do such steps add to the resale value of a home? And do they make it easier or faster to sell your property?

Housing groups and housing officials say that definitive statistical data covering multiple regions of the country are scarce. But some localized research projects in Oregon, Washington and California offer promising hints.

In a study covering existing and new houses sold from May 2010 through April of this year, the Earth Advantage Institute, a nonprofit group based in Portland, Ore., found that newly constructed homes with third-party certifications for sustainability and energy efficiency sold for 8% more on average than noncertified homes in the six-county Portland metropolitan area. Existing houses with certifications sold for 30% more.

The raw sales data in the study were provided by the Portland Regional Multiple Listing Service. "Certified" houses were defined as those carrying Energy Star or LEED for Homes designations or Earth Advantage home certifications. (LEED stands for Leadership in Energy and

Environmental Design.) The latest study was the fourth in an annual series conducted by Earth Advantage, each of which has shown clear price premiums for certified houses.

But officials caution that using average sales prices pulled from MLS data without trying to measure “comparable” homes against one another directly may not be conclusive. For instance, newly constructed certified houses may be more expensive to start, and existing certified homes may be larger and more likely to be in higher-cost neighborhoods where homeowner adoption rates for energy-efficiency measures are higher.

Nonetheless, said Dakota Gale, Earth Advantage’s manager of sustainable finance, looking back at four years of studies, “we can still see a consistent trend that third-party certification continues to result in a higher sales price, even during the past year when home sales were down.”

A study conducted two years ago by the institute in Seattle and Portland identified what may be another plus: Homes marketed with energy-efficiency certifications appear to sell faster on average than those without. The study tried to come up with rough comparability in appraisal terms between certified and noncertified properties, and it found that in Portland, certified homes spent 18 days less time on the market after listing than noncertified counterparts. In both Portland and Seattle, researchers documented price premiums — 9.6% in Seattle, 4.2% in Portland — in a statistical analysis with a 95% confidence level.

A recent study on houses in San Diego and Sacramento published by the National Bureau of Economic Research took a different tack: When you install photovoltaic solar panels on your roof, how much do you get back in market resale terms, beyond monthly energy savings?

Researchers examined a sample of home sales in the \$500,000 range in both metropolitan areas between 2003 and 2010 and found that, on average, solar panel installations cost owners \$35,967. But with federal and state subsidies, the net average cost came down to \$20,892. This net expenditure, in turn, yielded an increase in appraised value by \$20,194 — a 97% rate of recovery on the investment.

Though less than 100%, the rate is much higher than most home improvements in the most recent “Cost vs. Value” study conducted by Remodeling magazine — well above major kitchen and bathroom renovations.

Kevin Morrow, senior program manager for green building at the National Assn. of Home Builders, says that although many newly constructed homes come with energy and sustainability certifications, banks don’t necessarily recognize their value when it comes to providing mortgage money.

For example, bank underwriters often do not include reduced monthly utility costs in the household income/household expense ratios that affect the maximum mortgage amounts available to buyers.

“The case needs to be made” to lenders, he said, “that, hey, these houses will cost less to operate, so they should be worth more.”

Morrow added that appraisers are part of the issue as well if they don’t have the training to recognize and credit extra value to houses that have money-saving solar installations, geothermal

heating and cooling, Energy Star appliances, water conservation features and other green improvements.

The Appraisal Institute, the largest group representing that industry, says it has sponsored “green” appraisal courses for 2,300 appraisers during the last two years. It says it strongly supports efforts to better incorporate energy and environmental factors into mortgage underwriting and home valuations, including a possible congressional mandate requiring it.

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# Residential energy efficiency: how to increase home value for appraisal

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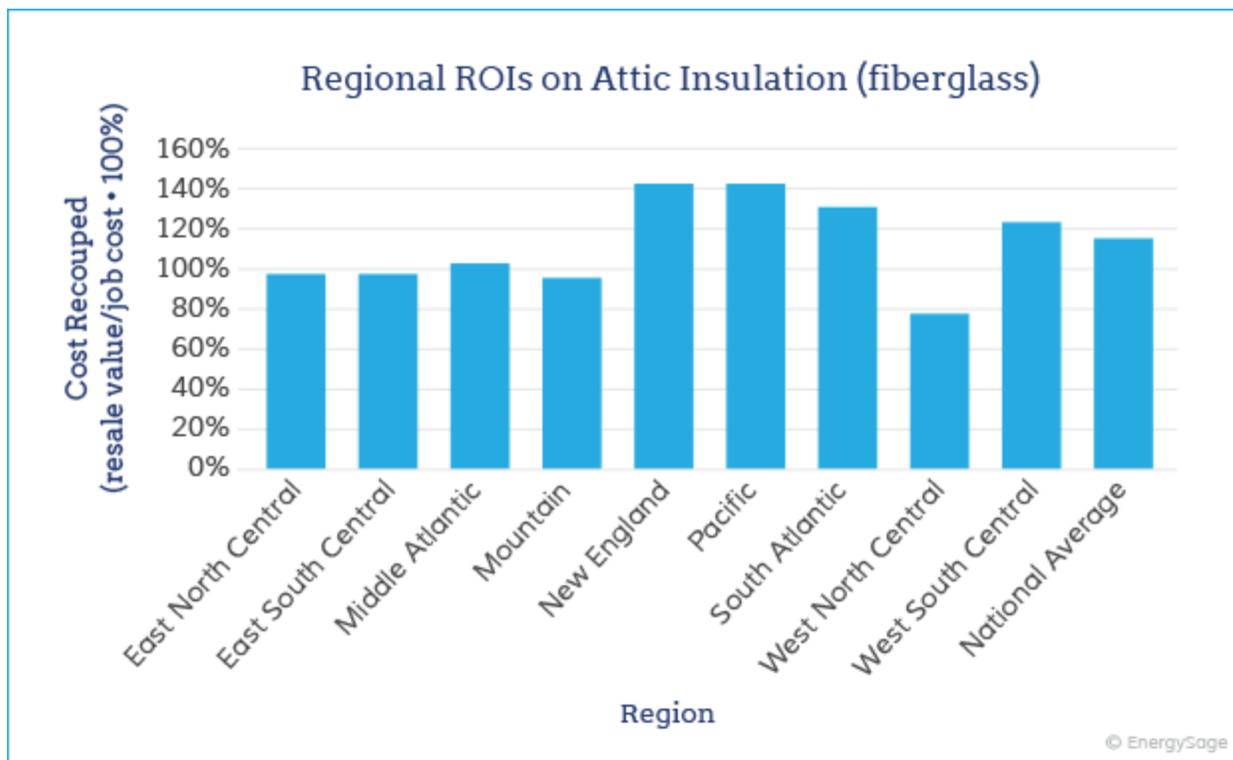


With today's emphasis on environmental consciousness, energy efficient homes are fetching higher prices on the housing market, and for good reason. Green homes are priced at a premium because their energy efficient upgrades offer both reduced utility bills and avoided maintenance expenses. This premium also reflects the **improved quality of life** that green upgrades can offer homeowners, including both health benefits and enhanced in-home comfort. Consequently, residential energy efficiency is an investment that yields financial benefits in the form of both immediate month-to-month savings and future profits when the house is sold.

Consider the example of upgraded attic insulation. According to Remodeling Magazine's **2016 Cost vs. Value Report**, attic insulation renovation was the most profitable energy-efficiency upgrade for homeowners across the United States. During an attic insulation project, the attic floor is air-sealed to prevent conditioned air from escaping the home interior into the attic, and fiberglass loose-fill insulation is added until a **certain level of insulation** is met.

On average, homeowners saw a 116.9% return on investment on their attic insulation renovation when they sold their home. A standard energy-efficient insulation project costs about \$1,268, which means that updating your attic insulation translates into your home selling for \$1,482 more on average.

Understandably, the profitability of attic insulation upgrades depends on the climate where you live. These projects were found to be most profitable upon resale in New England, Pacific, and West South Central regions, respectively.



While other popular residential energy efficiency projects do not always have a positive ROI, they can still add a significant proportion of their initial installation cost to your home's market value. For example, if you invest in upgrades that improve sealing and insulation inside your home, such as new roofing, doors, and siding, you can recover 75 to 83% of the installment costs upon resale.

Additionally, replacing antiquated HVAC systems with **high efficiency systems** can add up to 71% of the initial cost to your home's overall value. Sealing and insulation improvements can also reduce the cost of replacing your HVAC system by reducing the requisite size of the heating or cooling unit. Overall, although the recoup value of energy efficient upgrades may not always surpass 100% and generate a positive ROI on its own, the savings on utility bills during your time of residency can tip the financial balance in your favor.

## Installing home solar: another measure that improves home value

Studies conducted by the Lawrence Berkeley National Laboratory (LBNL), which is funded by the U.S. Department of Energy, have found that **homes with solar consistently sell for more** than comparable homes without it. An average 5-kilowatt (kW) solar panel system can add an additional \$20,000 or more to your home's value – and that's before accounting for the monthly electricity bill savings.

## Green label premiums on the real estate market



Green certifications awarded to private residencies by institutions such as ENERGY STAR and LEED are another way that implementing energy efficiency upgrades can add value to your home. One study conducted by economists at the University of California, Berkeley and UCLA, found that, in the California real estate market, single-family homes with green labels sold at an average premium of 9% ( $\pm 5\%$ ) compared to similar homes from 2007 to 2012. Even within California, these premiums varied based on the local climate, with hotter, more arid areas fetching higher prices on green homes. The reason for this is simple: it's more expensive to maintain a comfortable home temperature in harsher environments. Additionally, green homes were likely to sell for more in areas where homeowners were environmentally minded.

You can apply for residential green labels from both national and local institutions. To acquire green certifications from national institutions such as ENERGY STAR and Leadership in Energy and Environmental Design (LEED), your home must meet a specific set of criteria regarding overall

energy consumption. The first step to meeting these standards is to get a [professional home energy audit](#) so that you can identify areas where your home could be more energy efficient.

As mentioned above, implementing the necessary measures may have a high initial cost, but can be more than completely offset by utility bill savings and home value appreciation. Depending on where you live, you may also have access to programs that reduce the cost of implementing energy efficiency measures through [rebates and tax breaks](#), or make it easier to finance your project with a [low-interest loan](#).

The eligibility requirements and application process for green certifications differ based on the institution. An ENERGY STAR certification requires an [ENERGY STAR score over 75](#) for your home to be eligible, and the [application process](#) mainly utilizes the [ENERGY STAR Portfolio Manager](#). The LEED for Homes certification require the home to meet the [LEED version 4 \(v4\) Minimum Program Requirements \(MPRs\)](#), and is dependent on the LEED Building Design and Construction (BD+C) for Homes and Multifamily Lowrise rating system. While these ratings are frequently used for new homes, you can also get LEED certification for your existing home.

## How to sell your energy efficient home

Residential energy efficiency is a growing trend in the real estate market, with sellers highlighting the benefits of efficient upgrades in the face of rising energy prices. When it is time to sell your house, you should inform your real estate agent or real estate broker of the energy efficient measures that are now a part of your home's infrastructure. Renovations such as supplemental insulation and HVAC system overhauls will be passed on to future owners, along with their energy savings. In addition, these upgrades markedly improve habitation comfort within the home and can be a potential selling point.

To ensure that your home's energy efficiency benefits are made clear, make sure to provide relevant documentation that proves the energy efficiency of your home. The easiest way to do this is to include a sample of your monthly utility bill and an energy rating obtained from a home energy audit in the description of your house on a multiple listing service.

