

# Cool roofs save money, save energy, cut pollution and directly reduce warming!

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What wildly underfunded climate solution can achieve all of these goals simultaneously:

- Slow global warming by increasing the reflectivity of the Earth (geo-engineering)
- Reduce local temperatures in the hottest cities (adaptation)
- Reduce fossil CO2 emissions (mitigation)
- Save U.S. consumers and businesses billions of dollars in energy costs
- Reduce urban smog and hence cardio-pulmonary disease
- Create more than 100,000 jobs in two years?

The answer is a major effort to make roofs (and pavements) whiter and/or more reflective, which should be coupled with a major urban tree-planting effort.

**This “[urban heat island mitigation](#)” (UHIM) may well be the single most cost-effective energy and climate strategy** (see [background here](#) plus “[White roofs are the trillion-dollar solution](#)”).

Now Energy Secretary Steven Chu has announced new [initiatives](#) to promote and install “cool roofs” on DOE and other federal buildings. CAP’s Laurel Hunt has the story.

The release of the DOE cool roofs initiatives is important step towards President Obama’s vision of greening the federal government as outlined in his [Executive Order on Sustainability](#) (E.O. 13514), which commits the federal government to reducing its greenhouse gas emissions by 28 percent by 2020. Just yesterday, [President Obama announced](#) the expansion of the GHG emission reductions listed in E.O. 13514 by calling for an additional 13% reduction in GHG emissions from indirect sources by 2020.

Cool roofs, which improve building efficiency by reducing cooling costs and offsetting carbon emissions, will necessarily play an essential role in achieving that goal. Cool roofs effectively reduce heat by using lighter-colored roofing surfaces or special coatings to reflect more of the sun’s heat. A [study](#) conducted by Lawrence Berkeley National Laboratory and the Davis Energy Group found that installing a cool roof reduced the daily peak roof surface temperature of each building and could reduce energy use expended to operate cooling equipment up to 52%.

In a [memo](#) released June 1, 2010, Secretary Chu extolled the many virtues of cool roofs:

Cool roofs are one of the quickest and lowest cost ways we can reduce our global carbon emissions and begin the hard work of slowing climate change. By demonstrating the benefits of cool roofs on our facilities, the federal government can lead the nation toward more sustainable building practices, while reducing the federal carbon footprint and saving money for taxpayers.

Secretary Chu's leadership on the cool roofs initiative is a critical step in reducing the nation's greenhouse gas emissions – [buildings](#) account for 40% of U.S. energy use and about 35% of the nation's greenhouse gas emissions. Implementing strategies like cool roofs, roads, and pavement throughout the nation could become the equivalent of "[taking every car in the world off the road for 11 years.](#)" [Researchers](#) also found that,

Implementing cool roofs and cool pavements in cities around the world can not only help cities stay cooler, they can also cool the world, with the potential of canceling the heating effect of up to two years of worldwide carbon dioxide emissions.

Furthermore, installing cool roofs effectively helps combat the [urban heat island effect](#) – increased warming of urban areas in comparison to rural surrounding rural areas, caused in part by the combined heat of numerous hot roofs. Reducing the urban heat island effect will both improve air quality and lower ambient air temperature.

Specifically, Secretary Chu [instructed](#) that "all DOE offices to install cool roofs, whenever cost effective over the lifetime of the roof, when constructing new roofs or replacing old ones at DOE facilities." DOE also released a new resource on the roof selection process, [Guidelines for Selecting Cool Roofs](#). Secretary Chu also announced Monday new international cool roof opportunities to provide technical support to partnering nations, as well as a ramp up of the Roof Asset Management Program (RAMP) for roof retrofitting, which currently [saves around \\$500,000 a year](#) within the DOE agency that houses it; it is expected to save \$10 million over the next 15 years.

Other cool roof projects are proliferating throughout the nation, too. These range from the [Donald Bren School of Environmental Science & Management](#), a two time LEED certified platinum building at UC Santa Barbara, to the [McDonald's Restaurant at Abercorn Common](#) in Savannah, Georgia. A UCSB spokesperson at UCSB states that although "greening" the building initially added to costs, "it's safe to say the building is quickly recovering the additional costs," [saving the University money](#).

These projects and many others nationwide demonstrate that cool roofs are cool for the planet as well as the wallet. Cool roofs are yet another example of a currently available, low cost technology that can make a huge economic and environmental difference now. Even as the Senate debates a comprehensive clean energy and climate bill, which would spur further clean energy investments and energy savings, this 'low hanging fruit' must be aggressively harvested.