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DOE's Oak Ridge and Lawrence Berkeley National Labs Join with Dow Chemical to Develop Next-Generation Cool Roofs

The U.S. Department of Energy today announced that Oak Ridge National Laboratory (ORNL) and Lawrence Berkeley National Laboratory (LBNL) have joined with Dow Chemical Company as part of a Cooperative Research and Development Agreement to fund key research that will help develop the next generation of cool roof technologies in the United States. The agreement will support research to increase the energy savings from existing cool roof technologies by more than 50%, decreasing the nation's carbon footprint and providing an opportunity for Americans to save money by saving energy.


"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," said Secretary Chu. "Working with industry to develop innovative technology will help us to reduce energy waste and save money on our energy bills."

As a critical element of the research agreement, ORNL will partner with LBNL to capitalize on the broad range of cool roof technology experience they bring from their applied research in this field. The research will focus on the development of new solar reflective roof coatings that would increase the energy savings from existing cool roof technologies by more than 50% for new and existing commercial buildings.

In partnership with Dow, DOE's national laboratories will work to improve the ability of roof coatings to continue reflecting sunlight after years of exposure to the elements. This includes developing technologies that improve the long-term resistance of these materials to dirt build-up and microbial growth. The goal of the cooperative research partnership is to design and commercialize the next generation of cool roof components that can significantly reduce the energy consumption of new and existing buildings.

The replacement or resurfacing of conventional roofing materials with improved reflective roof coatings could offer building owners energy savings of up to 25% on air conditioning—up from to 15% savings with existing cool roof coatings. This would reduce annual carbon dioxide emissions by 5 metric tons for every 10,000 square feet of commercial building roof area.

Commercial buildings in the United States today offer an opportunity to retrofit over 20 billion square feet of roofing space. A recent study by researchers at LBNL found that using cool roofs and cool pavements in cities around the world can help reduce the demand for air conditioning, cool entire cities, and potentially cancel the heating effect of a year of worldwide carbon dioxide emissions. Energy savings are highly variable based on levels of installed insulation, climate, and other related factors. DOE has a [calculator to help building owners determine the potential savings of their buildings](#).

In December, the Department of Energy completed the installation of a cool roof that covers approximately 25,000 square feet on its Headquarters West Building in Washington, DC. This spring, DOE will also install a cool roof on the Headquarters South Building, covering approximately 66,000 square feet. As a result of the new cool roof installations on both buildings, taxpayers will save a total of \$8,000 per year in energy costs. Secretary Chu has also encouraged other federal agencies to take similar steps at their facilities. DOE has released [Guidelines for Selecting Cool Roofs](#), which provides technical assistance on types of roofing materials and how to select the roof that will work best on a specific facility. Review the complete [Guidelines for Selecting Cool Roofs](#) .

To learn more about DOE research and development of cool roofs, please visit the [Cool Roofs page](#) on the Building Technologies Program website.

Consumers can find Energy Star cool roofing products for homes and businesses at [EnergyStar.gov](#).

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