

An Economic, Environmental, and Energy Impact Study of Cool Roofs in Mexico

In April 2012, the National Commission on Energy Efficiency (CONUEE), with support from the Global Superior Energy Performance Partnership (GSEP) Cool Roofs and Pavements Working Group, launched an Action Plan to promote cool roof deployment in Mexico. One of the key components of that plan was to undertake a study of the impact cool roofs would have on energy savings, energy costs, and greenhouse gas emissions in Mexico. Researchers at CENIDET, the national technical university, recently finalized the study. The study evaluated 7 major cities covering each of Mexico's 6 climate zones, considering both residential and commercial buildings, and assumed the structures were built to existing national building codes. The results indicate that the median cooling energy savings from deploying cool roofs (increasing roof reflectance from 0.2 to 0.7) across the 7 cities would be 7% and 18% for commercial and residential buildings, respectively. The study also identified the cumulative energy savings opportunity from cool roofs in Mexico, estimating that cool roofs deployed in Mexico City, Mérida, and Monterey alone could save 3,325.5 gigawatt-hours of energy per year, equivalent to taking 480,000 cars off the road. Importantly, the study found that the cool roof investment paid for itself in no more than 3 years. CONUEE approved the results in early 2014 and the report is now due to be officially released. The impact study shows the value of cool roofs and provides the type of geographically relevant data needed to evaluate the scale of the opportunity, enabling better decision making by policymakers, building owners, and the construction community. Beyond Mexico, the study methodology developed by CENIDET and the Cool Roofs and Pavements Working Group is planned for use in a study of South Africa's cool roof potential.

A Cool Roof Voluntary Standard in Mexico

In April 2012, Mexico's National Commission on Energy Efficiency (CONUEE), with support from the Global Superior Energy Performance Partnership (GSEP) Cool Roofs and Pavements Working Group, launched an Action Plan to promote cool roof deployment in Mexico. One of the key components of that plan is the development of a voluntary standard (or NMX) covering the definition of a cool roof and prescriptions for proper testing and rating procedures. A local working group of industry, academic, and government representatives that convened under the Mexican Paint and Coatings Association (ANAFAPyT) led the development process. In February 2014, the group officially released the draft voluntary standard for public comment. The draft voluntary standard establishes that low-sloped roofing materials must demonstrate aged solar reflectance of 0.65, aged solar reflectance index (SRI) of 78, and aged thermal emittance of 0.85 in order to qualify as a highly reflective, "cool" roof. These requirements are in line with the current California Title 24 building codes and CalGreen, which are at the leading edge of cool roof requirements in the United States. For steep sloped roofs, the voluntary standard requires aged solar reflectance of 0.3, aged SRI of 30, and an aged thermal emittance of 0.85. The voluntary standard also includes a manufacturer warranty that the product will last 5 years, a requirement that is not included in U.S. codes at this time. The draft voluntary standard also establishes a testing procedure for determining whether a material meets these requirements. These are largely the same as those used in the United States by the Cool Roof Rating Council. The development of the draft voluntary standard is a significant step forward in building the market and supportive policy for cool roofs in Mexico. It provides the technical underpinnings to creating a transparent, high-performance marketplace and supports collaboration between industry and government.