

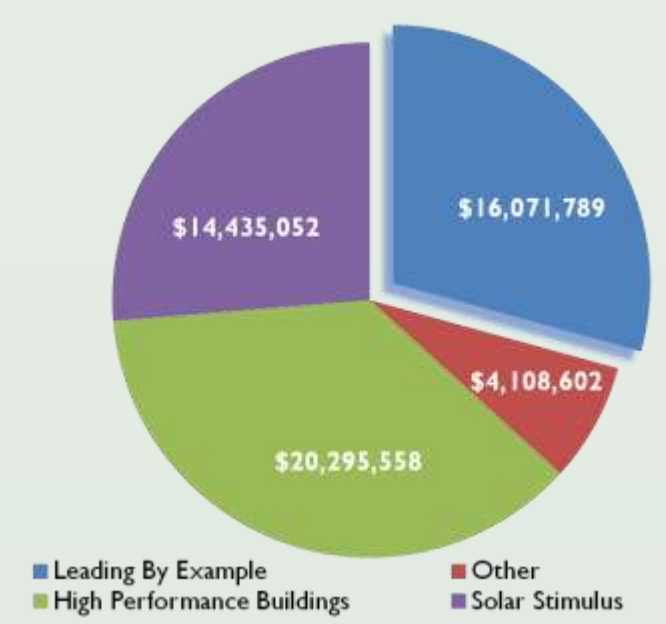


# American Recovery and Reinvestment Act State Energy Program in Massachusetts 2009–2012



The Massachusetts Department of Energy Resources (DOER) received \$54.9 million from the U.S. Department of Energy through the American Recovery and Reinvestment Act of 2009 (ARRA) State Energy Program (SEP). The goal of ARRA SEP was to reduce energy consumption and costs; lower greenhouse gas (GHG) emissions; create jobs and local economic development; and support the growth of a vibrant clean energy economy. DOER was responsible for developing and implementing three initiatives to achieve these goals:

- 1) High Performance Buildings to utilize deep energy retrofits that showcase strategies to reduce building energy consumption by at least 50 percent, target reduction of oil consumption, and improve outreach strategies to increase participation in energy efficiency programs;
- 2) **LEADING BY EXAMPLE** efforts to significantly expand energy efficiency initiatives and renewable energy installations at state-owned facilities;
- 3) Solar Stimulus to significantly increase solar PV installations at public, private, and institutional facilities throughout Massachusetts.



THE LEADING BY EXAMPLE (LBE) PROGRAM ARRA efforts under the LBE program were designed to help meet the energy, emissions, and renewable energy targets for **state buildings established by Governor Patrick's 2007 Executive Order 484**. These efforts resulted in implementation of five distinct project categories that reduced energy and emissions at more than 200 state-owned facilities.

These project categories ranged from comprehensive energy efficiency improvements at state buildings and an innovative real-time energy monitoring system to low emissivity roofs at public skating rinks and smaller efficiency upgrades across dozens of state facilities.

## Key Results and Impacts of LBE Initiatives

\$16.1 million in ARRA funds leveraged \$122.3 million in additional public and utility investments.

30 year savings of \$188.5 million and 713,298 metric tons of GHG emissions, a reduction equivalent to taking 139,802 cars off the road.

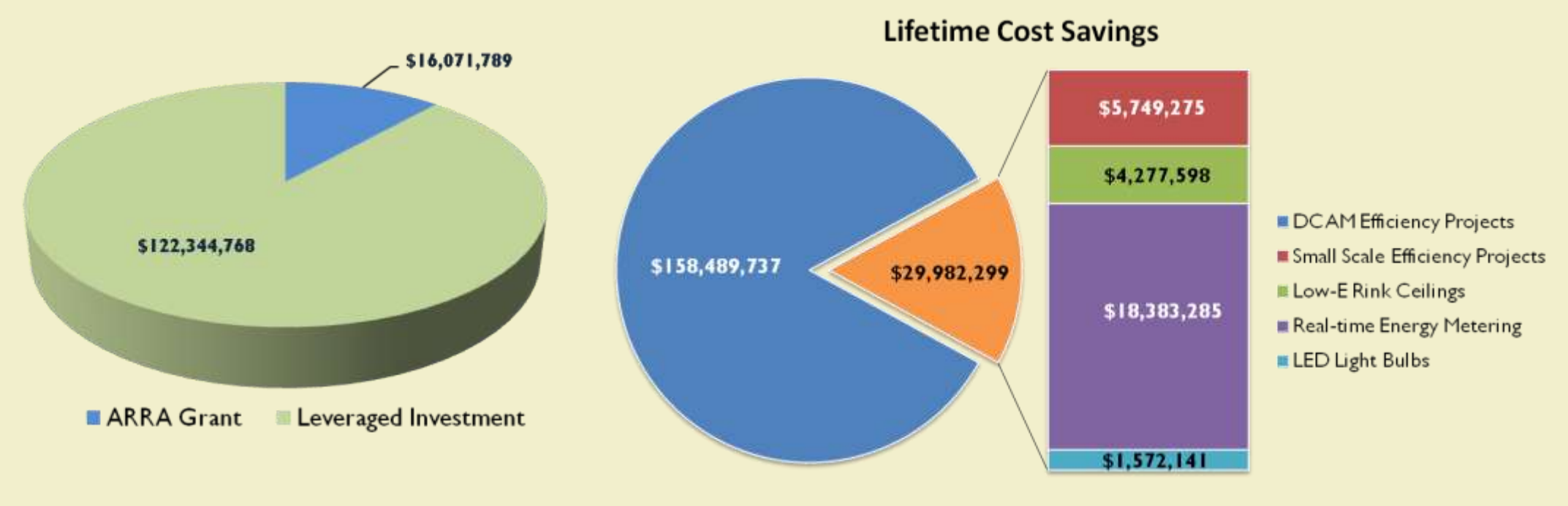
ARRA funds sent paychecks to 323 individuals and total project investment created 1,162 construction-related jobs.

## Comprehensive Energy Projects

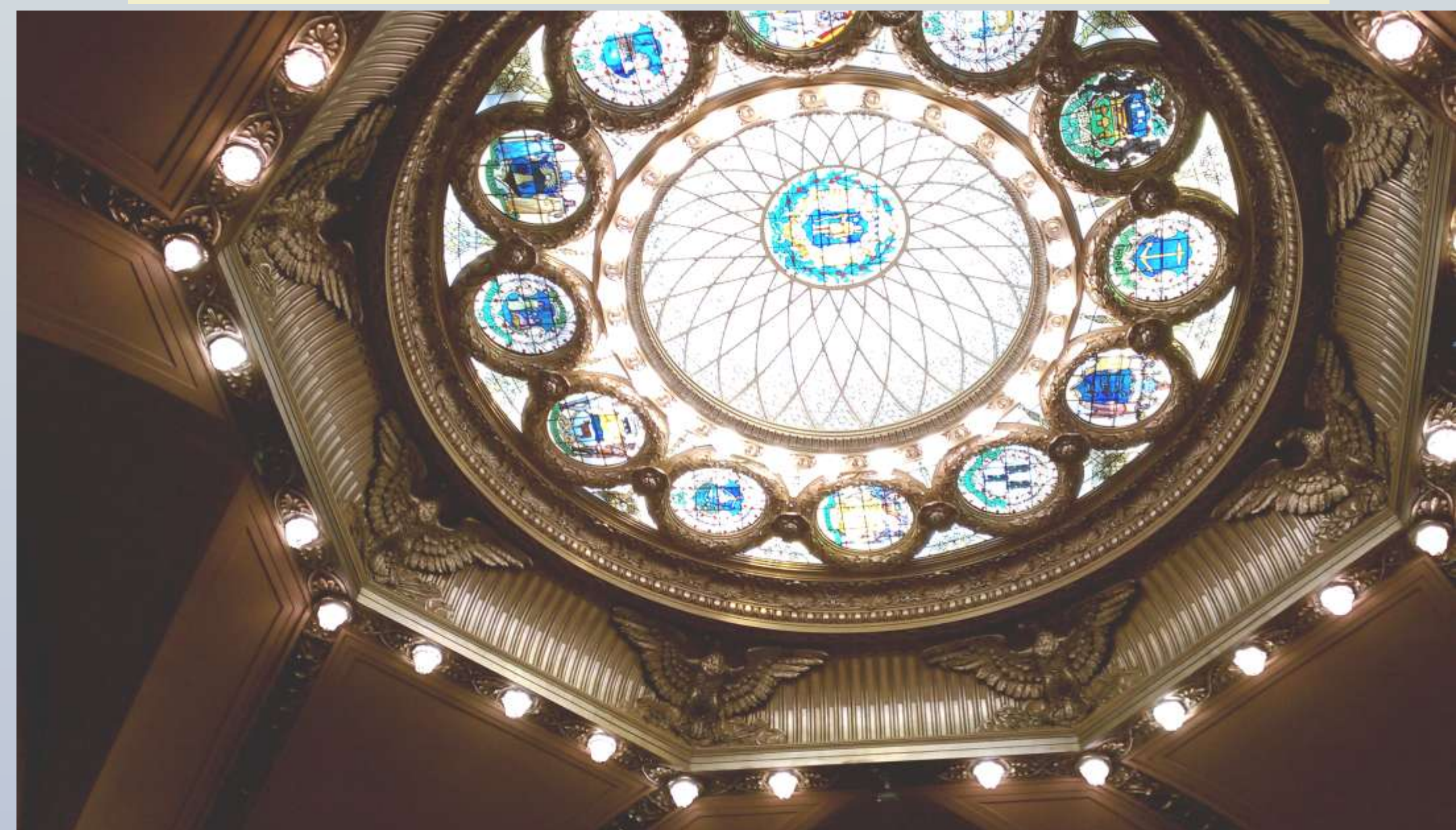


DOER provided \$3.8 million to the Division of Capital Asset Management (DCAM) to hire 18 dedicated staff to oversee a portfolio of comprehensive energy efficiency and renewable energy projects at state-owned facilities.

DCAM leveraged an additional \$120.4 million in financing for the projects, which incorporated 238 energy conservation measures at 20 facilities. Thirty year savings are expected to reach \$158.5 million and 598,754 metric tons of GHG emissions.



## LED Light Bulbs



In partnership with utility incentive programs, DOER utilized nearly \$112,000 to procure 7,464 LED light bulbs for installation in 58 facilities across 12 state agencies. The Philips 9.7 watt LED light bulb utilized in this LED lighting project received the U.S. Department of Energy's 1st "L-Prize" award for innovation.

The lighting upgrades are expected to save \$1.6 million and offset 4,265 metric tons of GHG emissions over 30 years.

## Low Emissivity Rink Ceilings



DOER provided \$590,000 to the Department of Conservation and Recreation to finance the installation of low emissivity (low-E) ceilings at 5 public ice skating rinks, which are projected to achieve a 30 percent reduction in energy use. The low-E roof projects will save \$4.3 million and offset 14,438 metric tons of GHG emissions over 30 years.

## Real-Time Energy Metering



DOER allocated \$9.7 million to support the Enterprise Energy Management System (EEMS) program, which installed 1,291 building-level meters at 469 buildings covering over 25 million square feet of state facilities. These real-time meters will support efficient building operations, identify energy saving measures, and prioritize energy efficiency projects. Expected to save \$18.4 million and offset 74,532 GHG emissions over 30 years, EEMS is among the largest project of its kind to be implemented in the United States.

## Small-Scale Efficiency Projects

Over \$1.7 million supported 86 small-scale energy efficiency and lighting projects at 60 state properties in partnership with local utility companies—NSTAR, National Grid, and WMECO.

These projects averaged a 58 percent improvement in efficiency and, over 30 years, are projected to save \$5.8 million and offset 21,309 metric tons of GHG emissions. They will also significantly reduce maintenance time and costs due to the increased life of efficient lighting.

