



Taking Local Action

Mayors and Climate Protection Best Practices

June 2013





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First Place Award Winners

LARGE CITY

Salt Lake City, Utah Mayor Ralph Becker

SMALL CITY

Asheville, North Carolina Mayor Terry M. Bellamy



Salt Lake City, UT Mayor Ralph Becker

Net Zero Public Safety Building and Salt Lake Community Solar

The Salt Lake City Public Safety Building will be the first public safety building in the nation to achieve a Net Zero rating. To reach this lofty goal and ensure the building produces as much energy as it uses, the city employed a host of innovative technologies including rooftop solar and an off-site solar farm, planned LEED Platinum certification, locally-sourced and environmentally-sound materials and high efficiency mechanical systems. Another initiative is the Salt Lake Community Solar (SLCS), a unique, market-driven approach to reducing the cost of solar energy using innovation and ingenuity to tackle the logistical and financial barriers of going solar, that helps businesses and homeowners purchase and install solar energy systems.

In developing the Net Zero Public Safety Building, the city identified a critical need for a new public safety building, as the existing building continued to degrade. This created an opportunity to fulfill Salt Lake City Mayor Ralph Becker's long-term vision for reducing the city's carbon footprint. Salt Lake City's internal LEED Silver standard was outdated, and the project provided an opportunity to create a model to show that Net Zero is an attainable goal. The energy savings from the building will pay back the initial investment within 5 years, providing a sound financial model for future projects.

The new building has an Energy Star Performance Rating of 100, yielding an 80 percent savings in energy use and emissions. Compared to a traditional building of the same size that would produce an estimated 2,670 metric tons of greenhouse gases annually, this building would generate 524 metric tons each year were it not offset by solar energy to attain the Net Zero goal.

The Salt Lake Community Solar (SLCS) is another example of the city's commitment to renewable energy. This program harnesses the power of bulk purchasing, allowing homeowners to purchase solar energy systems as a group, with an appointed committee to review proposals and select a contractor to install the systems. Each homeowner contracted directly with the selected contractor at the negotiated group price. The model allows price per kilowatt to be linked to total demand, which decreased as more homeowners committed to installing solar systems. In its first year, SLCS solar arrays will allow homeowners to avoid 505,217 pounds of carbon dioxide emissions from the use of traditional electricity sources. Over their 25-year warranted lifetime, these solar arrays will allow homeowners to avoid 11,624,268 pounds of carbon dioxide emissions.

Asheville, NC Mayor Terry M. Bellamy

Green Capital Improvement Program

The City of Asheville established a goal to cut carbon emissions in its municipal activities by 80 percent by 2030. In the five years following the adoption of this target, the city has achieved a 17.67 percent reduction in emissions, and it has also established a self-sustaining funding source to recycle energy savings for investment in additional sustainability programs. More recently, these energy savings and dollars are now directed into the Green Capital Improvement Program (Green CIP), which funds the city's ongoing initiatives to reach its 80 percent reduction goal.

During the worst financial crisis since the Great Depression, Asheville creatively reinvested energy savings to provide greener services. The cornerstone of this diverse portfolio of carbon reduction efforts is the LED streetlight replacement program. The \$425,000 in annual saving energy savings generated from upgrading the LED streetlights is the funding source to pay for debt service on the streetlights, fleet and building efficiency project, and staff whose work is directly tied to additional energy savings.

With the end of ARRA grants and no funding source available for sustainability initiatives, the city leaders decided to create a self-sustaining fund by searching for large energy saving returns from carbon reduction investments. Asheville's streetlighting cost was identified as a significant capital project which could provide valuable carbon reductions while generating a funding source for additional programs through the energy savings.

By January 2013, 87 percent of the LED streetlights are installed and were generating a 1500 MTeCO annual carbon reduction. With the completion of the LED streetlight program fast approaching, the impact will be a 7.5 percent reduction in the overall municipal carbon footprint, producing an annual savings of \$425,000. The Green CIP Program challenges the norm in government budgeting since program savings are reinvested to produce additional green program savings.

Large City Honorable Mentions

POPULATION OVER 100,000

Akron, Ohio Mayor Donald L. Plusquellic

Indianapolis, Indiana Mayor Gregory A. Ballard

Milwaukee, Wisconsin Mayor Thomas Barrett

Washington, D.C. Mayor Vincent C. Gray



Akron, OH Mayor Donald L. Plusquellic

Advanced Green Technologies

The City of Akron is deploying advanced green technologies to promote local business development and reduce its energy requirements in delivering public services. The city is partnering with Hydrogen Energy Systems (HES), an Akron start-up company that has developed proprietary technology which addresses the emissions from small, internal combustion engines, which are the most polluting engines. The HES technology product is a device that replaces the carburetor or electronic fuel injector, delivering the exact mix of hydrogen or CNG and air to efficiently run small internal combustion engines (ICEs). It can run small internal combustion engines on 100 percent hydrogen or CNG. The technology extends engine life, reduces maintenance costs, and most importantly produces low-to-no emissions. The city is starting with 20 golf carts using this new green technology, with plans to convert lawn equipment, portable generators and other city equipment powered by small engines.

Using two other green technologies, the city will generate nearly all of the electricity needed to operate its wastewater plant. The first phase of Akron's high-solids Anaerobic Digestion System currently generates enough methane gas to power its 335 kilowatt (kW) generator at full power while processing only one-third of the biosolids generated by the treatment plant. This system generates enough power to supply 250 homes. The city also recovers landfill gas from its adjacent closed landfill and utilizes the gas to produce electricity, producing approximately 8,400 megawatt hours of electricity annually for the wastewater plant (enough to power 700 homes).

Indianapolis, IN Mayor Gregory A. Ballard

Energy Infrastructure Initiative

A key component of the city's Energy Infrastructure Initiative is to reduce energy consumption by city operational infrastructure. A key element of this initiative is an Executive Order by Mayor Greg Ballard to require electric or plug-in hybrid vehicles for its non-police fleet, making Indianapolis the first city in the nation to do so. The city has already retrofitted fleet trucks with dedicated propane systems, converted sheriff's vans to bio-fuel propane, purchased 114 hybrid vehicles, and installed 26 electric vehicle charging stations. Additionally, it has converted 400 traffic signals to LEDs, implemented three high-efficiency street lighting projects, and built 65 miles of on-street bike lanes to help reduce driving. At 13 park facilities, the city has installed solar thermal heating systems, energy-efficient lighting systems, and weatherization and utility monitoring systems. These measures and other program components are part of the city's plan to reduce dependency on foreign oil by improving the efficiency of city operations.

Park facility improvements will save 20,860 kilowatts annually in production. Converting fleet vehicles to propane results in 24 percent fewer carbon emissions than with unleaded fuel. Savings of 41 percent on energy costs is expected from traffic signal LED conversion. Mercury-vapor street light conversion to LED will reduce carbon emissions by 56,614 pounds/year. Each of the city's 114 hybrid vehicles saves an estimated 630 gallons of gas/year.

Milwaukee, WI Mayor Thomas Barrett

Milwaukee Energy Efficiency Program (Me²)

The Milwaukee Energy Efficiency Program (Me²) helps Milwaukee homeowners and businesses make energy-efficiency improvements and finance energy-efficiency upgrades to their properties, saving money and improving the environment. Me² gives homeowners and business owners access to innovative financing options, allowing them to reinvest the savings in their homes or businesses. Me² makes energy-saving upgrades such as insulation, air sealing, new heating equipment and lighting easier and more affordable. Me² reduces climate emissions, creates local jobs, and improves the city's building stock.

With Me² resources, the city's older building stock is being upgraded to operate at lower cost, and become more durable and comfortable. This initiative provides much needed capital and expertise to assist residents and business owners to make energy-saving improvements with minimal upfront cost. Annually, Me² is estimated to eliminate 1,985 metric tons of greenhouse gases by reducing electricity and natural gas use, once the projects are completed. The city also integrated Me² with its solar energy program, Milwaukee Shines: Me² customers easily move to solar installations on their residential/commercial projects. Me² has so far completed 1,679 home energy evaluations, retrofitted 629 homes, and approved 137 business improvements valued at \$14.2 million dollars.

Washington, DC Mayor Vincent C. Gray

Sustainable DC: Capital Bikeshare (CaBi)

District of Columbia Mayor Vincent Gray announced his plan in 2011 to make the District of Columbia the greenest, healthiest, and most livable city in the nation. The mayor's "Sustainable DC" initiative partners with the city's diverse and knowledgeable communities to make the District more socially equitable, environmentally responsible, and economically competitive. In addition to setting goals for addressing sustainability and climate protection, Mayor Gray established a fund to support innovative projects in pursuit of these goals. Among many activities, Mayor Gray committed \$4.5 million to fund sustainability projects across the city beginning in 2013. Through a competitive process, agencies propose projects to test new sustainability initiatives that meet longer term needs. The selected projects represent a significant early investment in advancing the plan and demonstrating how the District government is leading by example.

Included in Sustainable DC is an emphasis on transportation alternatives, such as walking and biking, to help reduce pollution by cutting vehicle use, and to provide public health and community benefits to District residents. Washington, DC, in partnership with Arlington County, VA, launched Capital Bikeshare (CaBi), which has become the largest and most successful bike sharing system in the nation. CaBi provides more than 1,700 bicycles located at 202 stations across the District and in Northern Virginia. The stations are solar powered and use wireless technology for easy installation and adjustments. CaBi has grown to include 22,000 annual members and 270,000 day-users since its launch, and continues to grow, having logged nearly 4,000,000 miles of trips since 2010. CaBi is one of many green activities underway in the nation's capital city.

Small City Honorable Mentions

POPULATION UNDER 100,000

Cathedral City, California Mayor Kathleen J. DeRosa

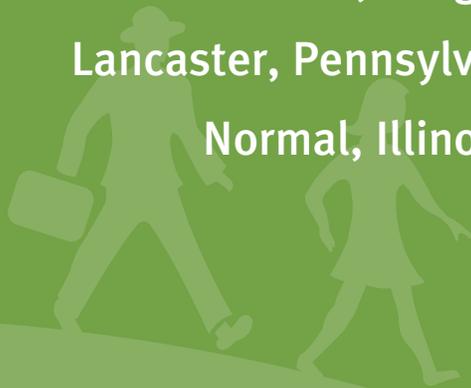
Dubuque, Iowa Mayor Roy D. Buol

Highland Park, Illinois Mayor Nancy R. Rotering

Hillsboro, Oregon Mayor Jerry Willey

Lancaster, Pennsylvania Mayor J. Richard Gray

Normal, Illinois Mayor Chris Koos



Cathedral City, CA Mayor Kathleen J. DeRosa

The Cathedral City Energy Action Plan

The Cathedral City Energy Action Plan is a comprehensive plan that utilizes a variety of energy-saving initiatives, such as building retrofits, lighting upgrades, an alternative fuel infrastructure and outreach and education programs, which have decreased energy consumption by 16.1 percent in municipal facilities and by 11.2 percent citywide. The Energy Action Plan was created to address two pressing issues: needed reductions in increasing city energy costs; and a community desire to reduce the city's carbon footprint.

With the help of government grants and partnerships with local utility companies, Cathedral City was able to perform building and lighting upgrades and other energy-saving measures to save more than \$200,000 in yearly operating costs. Specifically, an 86 percent drop in energy use was achieved through lighting upgrades. HVAC upgrades and solar installations will create annual savings of an additional 30,000 kilowatt hours. Finally, the conversion from conventional fuel to compressed natural gas and propane fuel in fleet vehicles further reduced operating costs while reducing carbon emissions. The program was financed by the city's Energy and Efficiency Conservation Block grant.

Dubuque, IA Mayor Roy D. Buol

Smarter Sustainable Dubuque

Smarter Sustainable Dubuque (SSD) is a partnership that uses “smart” technology to improve information available to citizens about water, electricity, transportation and health and wellness. In partnership with IBM Research, residents now have access to the information and tools they need to help them save money, conserve resources and improve the local economy. The effort is built upon a community-led collaborative that connects citizens, business, schools and non-profits (i.e., Dubuque 2.0).

This effort began with a focus on water usage and leaks. The water pilot project combined technology with grassroots engagement and reduced residential water use by 6.6 percent while significantly increasing leak detection and repair by the city. The project was expanded to include increased awareness and targeted reductions in energy use (i.e., electricity and transportation) while promoting better health and wellness.

SSD technology digitizes and connects city systems; sense and analyze and integrate data; and allows Dubuque to respond intelligently to the needs of its citizens. SSD is giving citizens and policymakers new insights on how to conserve Dubuque's resource, become more sustainable and improve their opportunities in an increasingly competitive world economy.

Highland Park, IL Mayor Nancy R. Rotering

Community Strategic Sustainability Plan

As a part of the Highland Park Community Strategic Sustainability Plan, the city has created a comprehensive Electric Vehicle Expansion Plan focused on a multi-pronged approach to advance the rate of adoption of electric vehicles by city residents. The plan works to advance electric vehicles by installing charge stations, creating an alternative vehicle policy within the city, and promoting the financial and environmental aspects.

Due to a partnership with five other municipalities, the City of Highland Park was able to install plug-in electric vehicle charge stations.

The city's Sustainability Plan also aims to increase residential energy efficiency. In collaboration with a local nonprofit, Energy Impact Illinois, residents now have access to discounted energy audits and an instant rebate of 70 percent off (up to \$1,750) the cost of energy efficiency upgrades. This program has helped to reduce more than 286,000 pounds of CO₂ per year. It is expected that this program will continue to expand and reach our reduction target of 440,000 pounds of CO₂ per year.

Hillsboro, OR Mayor Jerry Willey

Sustainability Goals Direct Performance

The City of Hillsboro has set forth ambitious goals for its city operations: reduce city facility energy consumption by 20 percent by 2020 and 60 percent by 2030; reduce GHG emissions from facilities by 80 percent with the remainder offset by 2030; and produce 80 percent of the city's energy from renewable energy sources by 2030. The city has aggressively implemented mechanical, lighting and other energy efficiency measures on its facilities and added renewable energy power production. Energy and water consumption has decreased by 15 percent since 2009, with a total savings of more than \$420,000. The city has also installed over 200 kW of photovoltaic solar generation on city facilities, as well as hydrogen fuel cell power from a hydrogen generator built in Hillsboro.

The Energy Program was seeded with \$30,000 of actual energy savings (avoided cost) from two projects implemented in 2009, and then supplemented with U.S. Department of Energy EECBG funding, which helped implement an Energy Management Plan, complete a comprehensive GHG inventory, and convert some city facilities to more energy efficient technologies.

Another significant goal set by the city is to operate a 100 percent fossil fuel-free city fleet by 2030. In order to be prepared, the city has begun replacing fleet vehicles and installed 35 EV charging stations. This effort spurred private sector development as well, so there are now more than 50 charging units in place.

Lancaster, PA Mayor J. Richard Gray

Green Infrastructure Plan

To implement its Green Infrastructure Plan, the city initiated a series of targeted demonstration projects to increase public awareness and understanding of the benefits of green infrastructure. To date, 139 demonstration projects throughout the city have been completed or are in planning, design, or construction phases. More than 25 alleys and numerous streets have been redesigned or reconstructed; nearly 76 acres of green roofs have been installed; four parking lots have been renovated with porous pavement and other green technologies; and green infrastructure retrofits are planned for 26 of the city's 30 parks.

Through a series of neighborhood meetings, a homeowners guide, presentations to business groups, and a special website, this initiative has helped increase awareness and support for green infrastructure. Demonstration projects have provided residents with visible and immediate evidence that green infrastructure benefits go far beyond stormwater management. Improved aesthetics, higher property values, increased tree plantings, and enhanced parks have led residents to embrace green infrastructure. The positive impacts can also be seen on private property.

Normal, IL Mayor Chris Koos

EVTown USA

Mayor Chris Koos, along with a committed group of local leaders, created a program called "EVTown USA" that establishes Normal, IL as a model electric vehicle community. The initiative seeks to educate the community about EV technology and provide widespread EV charging station infrastructure. It all began in 2010 with the creation of the Community-Wide Sustainability Plan, identifying the opportunity to reduce emissions of carbon dioxide by advancing transportation alternatives.

In early 2011, Normal launched the EVTown program by announcing a strategic partnership with Mitsubishi Motors, who was preparing to launch the all-electric i-MiEV automobile in the United States. Today, Normal has more EV charging stations and EVs in use per capita than any other city, with a population over 100,000, in America. The city fleet now includes 54 Mitsubishi i-MiEVs. The EVTown Program was funded by the Town of Normal and the Energy Efficiency and Conservation Block Grant (EECBG).



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