

ANNUAL REPORT 2011

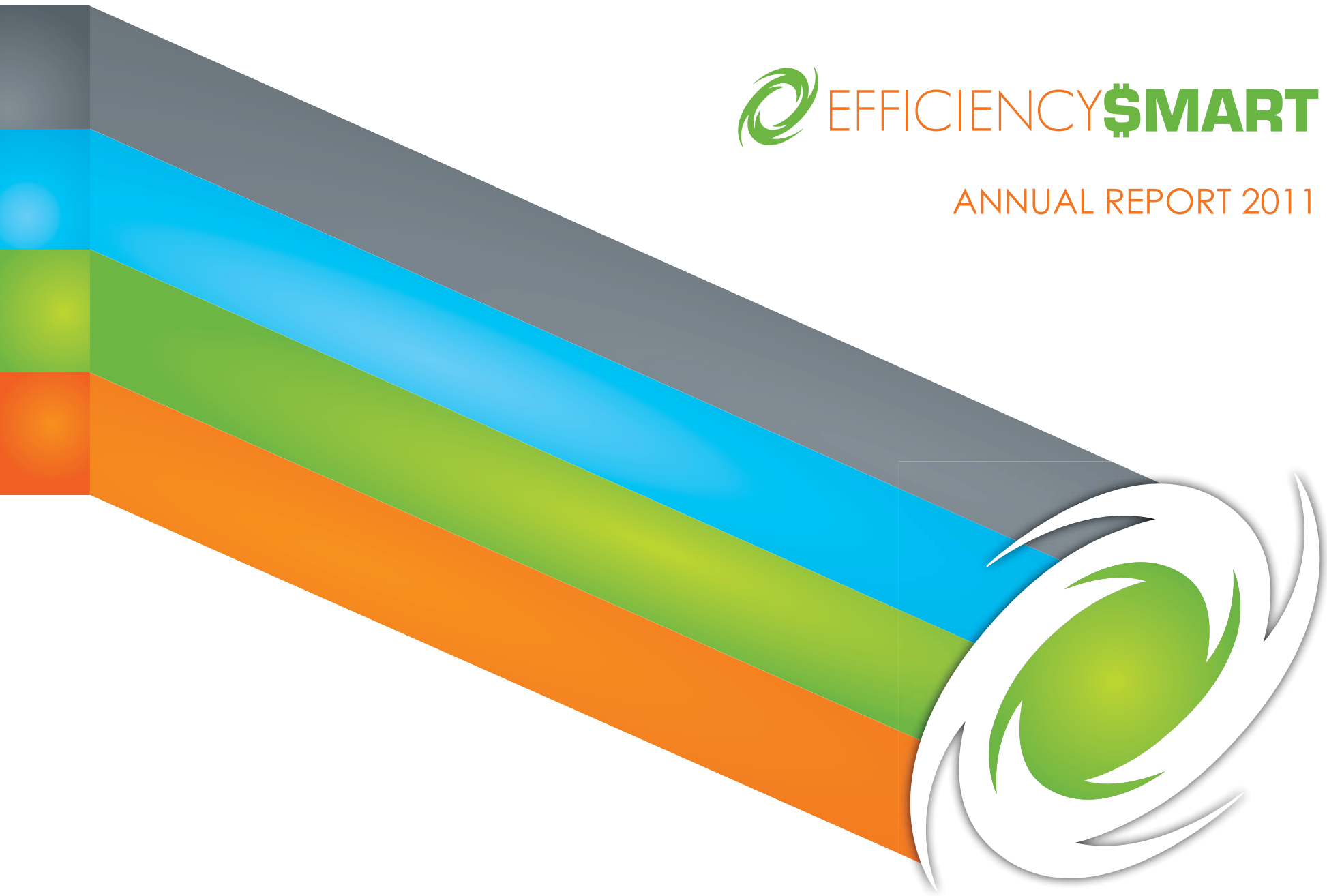
THE POWER  
OF CHANGE







ANNUAL REPORT 2011



An aerial photograph of a suburban residential neighborhood with a mix of houses, green lawns, and trees. A large pond is visible in the upper left. A school building with a large parking lot is in the lower right. Several callout boxes with white text and colored backgrounds (orange and blue) are overlaid on the image, each with a white line pointing to a specific location. The callouts describe various energy efficiency measures taken in the area.

**CHANGED LIGHT BULBS**

**BORROWED ENERGY METER**

**PURCHASED NEW ENERGY STAR® CLOTHES WASHER**

**INSTALLED OCCUPANCY SENSORS**

**RECYCLED OLD REFRIGERATOR**

**PERFORMED ENERGY AUDIT**

**CHANGED 200-TON CHILLER**

**INSTALLED HIGH-BAY T8 FLUORESCENT LAMPS**

**ENCLOSED FAN MOTORS**

**RE-BALLASTED OLDER FLUORESCENT LIGHTS**

# WE'RE HELPING COMMUNITIES MAKE CHANGE.

At Efficiency Smart, change defines how we think, what we do, and why we do it. We help to change the way municipal electric systems and their customers think about energy efficiency. We encourage businesses and consumers to change to more energy-efficient products and systems. We provide change through financial incentives and money-saving measures.

Efficiency Smart is partnering with communities to make a difference. The key may be providing advanced technical support to help large businesses change by reducing their energy usage. Or perhaps it's prompting utility customers to change to more energy-efficient lighting. Or it may be making energy efficiency more affordable, so everyone has the opportunity to make the change to efficient products. In the end, change means saving energy and money. Change that increases energy efficiency benefits the municipal electric system. It benefits the consumer. It benefits the environment.

At Efficiency Smart, we invite you to join us in rethinking the way you consume energy, and encourage you to help us make a positive change in energy efficiency.



# 49 COMMUNITIES AND COUNTING...



It's been an incredible first year for Efficiency Smart! What started as a vision on the part of American Municipal Power (AMP) and the Vermont Energy Investment Corporation (VEIC) just a short time ago has been transformed into a reality over the past year.

Efficiency Smart began providing a full range of energy efficiency services to 48 municipal electric systems in 2011, and the staff and infrastructure were put into place to support these services. Systems and reporting procedures were established, including a call center, an information management system, and a process for energy savings verification. Marketing and promotional campaigns were launched and are increasingly expanding awareness. Activities related to Efficiency Smart are stimulating local economies, fostering lasting partnerships, and creating jobs both directly and indirectly. We have identified trade allies and local suppliers that are now promoting the program to customers, further leveraging our impact.

Each of these accomplishments puts Efficiency Smart a step closer to reaching its three-year energy savings targets. Significant progress has been made toward these targets thus far, with Efficiency Smart exceeding its first-year goal of 16,000 megawatt-hours (MWh) by approximately 2,500 MWh. We are fully-committed to achieving savings targets for all participating municipal electric systems, and will work diligently to identify barriers that may be keeping customers from installing efficiency measures.

In addition to providing guaranteed energy savings, Efficiency Smart consults with its participating municipal electric systems to find the most cost-effective and beneficial solutions for them and their customers, often providing customized services to meet their goals. We give public power a competitive advantage

over investor-owned utilities, offering municipal electric systems which subscribe to our program a robust and full-service energy efficiency solution supported by industry experts to provide to their customers.

Unique benefits such as those mentioned above and highlighted throughout this annual report were instrumental in the naming of Efficiency Smart as a finalist for the Energy Efficiency Program of the Year at the 2011 Platts Global Energy Awards. This awards ceremony is one of the premier forums for international recognition in the energy industry, and we are honored to have been identified among the high-caliber programs featured.

On behalf of everyone at Efficiency Smart, I thank our participating municipal electric systems and everyone else who contributed to Efficiency Smart's successes in 2011 for their support. We look forward to their continued involvement and invite those AMP members not currently participating to join the other AMP communities partnering with us to save money and energy through energy efficiency.

In the end, we hope not only to help participating municipal electric systems save energy, but also to change the way customers think about and use energy. Simply put, energy efficiency is the most innovative technology that never had to be invented, the most powerful form of energy that never had to be generated, and the most cost-effective fuel source that never had to be purchased.

Thank you for helping Efficiency Smart to harness the power of change.

Sincerely,

Kristyn Wilder, MBA, CDS, CSSBB, PMP  
Executive Director/COO  
Efficiency Smart

# THE POWER OF PARTNERSHIP

2011 marked the first year of operation for Efficiency Smart, AMP's comprehensive energy efficiency program, but work on the program started long before then. The AMP Board of Trustees understood the importance of energy efficiency and directed staff to implement a robust program. The key component of that effort was the execution of a performance-based contract with VEIC in 2010.

Energy efficiency is a "common denominator" for utilities. There is a great deal of regionalization in terms of electric generation. Various technologies cannot be used with the same level of success from one part of the country to another. However, energy efficiency works regardless of geographic location because it offsets the need to build new generation resources.

**From AMP's perspective, energy efficiency is the lowest-cost, least-risk component of a power supply portfolio.**

In the first year of operation, Efficiency Smart managed to accomplish multiple objectives, including achieving critical participation levels by midyear and putting in place the necessary infrastructure to deliver high-quality services. By the start of 2012, the program had achieved more than 115 percent of its first-year savings goal. More importantly, AMP and VEIC launched a program unique to the needs of AMP member communities and put in place procedures to independently measure and verify the savings. That's one of the key elements separating the AMP energy efficiency program from others.

Efficiency Smart's annual report highlights the successes of its first year of operation. We are proud of what has been accomplished, are working to make ongoing improvements, and look forward to continued success.

On behalf of the members,



Marc Gerken, PE  
President/CEO  
American Municipal Power



Jon Bisher  
Chairman, Board of Trustees  
American Municipal Power  
City Manager  
City of Napoleon, Ohio



# BIG SAVINGS. BRIGHT FUTURE.



Efficiency Smart came to fruition in mid-2010, when AMP entered into an initial three-year contract with VEIC to form a third-party business to administer a portfolio of energy efficiency services for the benefit of subscribing AMP members. The resulting business officially launched Efficiency Smart's services in January 2011.

Initially, 47 AMP communities subscribed to Efficiency Smart. Cleveland Public Power became the 48th program participant in the summer of 2011. With the addition of Coldwater Board of Public Utilities at the start of 2012, 49 municipal electric systems now participate in Efficiency Smart. Several additional communities are considering subscribing to Efficiency Smart for services beginning in 2013.

Created to provide municipal electric systems with a comprehensive set of energy efficiency services to meet the varying needs of their utility customers, Efficiency Smart offers cost-effective energy-saving solutions with both short-term and long-term benefits. Research and verified results show these types of services can significantly reduce energy consumption, allowing participating communities to incorporate energy efficiency into their long-term power supply portfolio. Efficiency Smart supports these objectives by providing technical and financial resources to participating municipal electric systems, stimulating local economies, and providing a platform for sustainable growth.

Efficiency Smart services include rebates for energy-efficient residential appliances and lighting; free removal of old, inefficient refrigerators and freezers from homes; and rebates for more than 90 energy-efficient products and services for businesses.





Efficiency Smart also offers technical assistance, account management services, and customized financial incentives for large commercial and industrial customers.

Efficiency Smart has worked with each municipal electric system enrolled in the program to determine a specific community target for energy savings. Efficiency Smart tracks and reports actual savings to all participating communities, and all claimed savings are later verified by an independent third-party evaluator. If three-year targets are not met, communities will be refunded for any guaranteed savings not delivered.

***The three-year performance-based contract between VEIC and AMP, now valued at approximately \$27 million, is expected to cumulatively save participating member utilities more than 79,000 megawatt-hours (MWh) of energy by the end of 2013.***

Efficiency Smart is on schedule to meet this goal, having exceeded its first-year goal of 16,000 MWh of combined energy savings for the 48 communities participating in Efficiency Smart in 2011 by more than 15 percent. This claimed savings level is roughly equivalent to the electricity used by 1,605 homes in a year.





# A LITTLE CHANGE CAN GO A LONG WAY.

Efficiency Smart helps the residents and businesses of the communities it serves save money and electricity through energy efficiency. The program began in 2011 as a comprehensive and turnkey solution to meet the energy efficiency needs of municipal electric systems served by AMP, providing a wide range of benefits to the communities that choose to subscribe to its services.

Energy efficiency services are now fairly common among investor-owned utilities, and are often seen by large commercial and industrial customers as standard utility offerings. Efficiency Smart helps public power communities stay competitive by providing them with their own extensive set of services. Efficiency Smart offers several unique features, including:

- Savings guaranteed at the municipal level
- Savings verified by an independent evaluation, measurement and verification contract
- Turnkey services supported by an experienced staff with extensive technical expertise
- Operating costs that are spread across participating communities
- Tailored strategies to meet the needs of the municipal electric system and its utility customers
- Cost-effective services delivered to all customer classes
- Customized incentives and services for large commercial and industrial utility customers

Efficiency Smart delivers a multitude of other advantages, such as stimulating local economies through work in energy efficiency. Energy efficiency programs support approximately 20 jobs for every \$1 million in related

expenditures<sup>1</sup>. Thus, in Efficiency Smart's first year of operation, an estimated 60 jobs were created or retained as a result of the program. The local economy also benefits from retail sales tax on energy-efficient equipment. Additionally, the money saved by utility customers on energy costs may free up more funds to be spent locally, and energy efficiency projects completed by the municipality can help reduce local government costs.

Another way Efficiency Smart stimulates local economies is by supporting businesses in the communities enrolled in its program. Whether purchasing services from a vendor in a small town or providing an extra incentive for utility customers of participating communities to shop locally, this commitment remains at the forefront of Efficiency Smart's mission. In line with this commitment, Efficiency Smart will launch its Contractor & Vendor Outreach program in 2012, which will actively promote vendor partner allies in participating communities. More about this new initiative can be found on page 21 of this report.

Participation in Efficiency Smart provides other economic benefits, such as the lifetime savings associated with any installed efficiency measure. Each municipal electric system participating in Efficiency Smart invests a fixed amount of money for each year it is enrolled in the program. This investment results in avoided electrical energy and demand charges, and in some cases, will also provide fossil fuel or water savings. The value of the lifetime economic savings, also referred to as Total Resource Benefits<sup>2</sup> or TRB, was more than triple the program costs in 2011. The benefit-to-cost ratio is a robust measure of the nature of energy efficiency investments for each participating municipal electric system, derived by dividing TRB by program costs.

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<sup>1</sup> "How Does Energy Efficiency Create Jobs," American Council for an Energy-Efficient Economy, November 2011; [www.aceee.org/files/pdf/fac\\_t-sheet/ee-job-creation.pdf](http://www.aceee.org/files/pdf/fac_t-sheet/ee-job-creation.pdf).

<sup>2</sup> Total Resource Benefits are the estimated lifetime value of economic benefits that result from electricity, fossil fuel, and water savings.

## AGGREGATE BENEFITS AND COSTS FOR EFFICIENCY SMART SERVICES IN 2011

Total Resource Benefit	\$12,107,277
Total Program Costs Paid by Participants	\$3,704,921
Benefit to Cost Ratio	3.26

Saving energy through electrical efficiency is the lowest-cost, least-risk form of power supply, and it reduces the costs associated with future power plant construction, transmission, and power market variability.

In 2011, Efficiency Smart worked with utility customers of participating municipal electric systems to install 47,341 energy efficiency measures, which will save approximately 18,452,000 kilowatt-hours (kWh) annually. Over the lifetime of the efficiency measures installed in 2011, customers will save approximately 255,109,000 kWh and nearly \$21.6 million.

Ultimately, municipal electric systems enrolled in Efficiency Smart can achieve strong financial benefits, including significant returns on investment, through participation in the program. Savings yields to municipal electric systems in 2011 were higher than originally forecasted, and additional resources can now help achieve higher savings than anticipated over the life of the three-year, performance-based contract. Nearly \$2 million of this will be reinvested back into incentives and enhanced programs.

VEIC, the nonprofit corporation contracted to operate Efficiency Smart, has a strong track record of reporting reliable and independently verified savings. Efficiency Smart has drawn on this expertise, implementing an extensive system to measure savings achieved by utility customers of participating municipal electric systems. Additionally, all savings claims are being verified by a team led by Integral Analytics, an independent, third-party evaluation, measurement, and verification company hired by AMP.

In addition to the benefits already mentioned, energy efficiency provides a number of other advantages for municipal electric systems, including the ability to:

- Build energy efficiency into long-term power supply portfolios
- Diminish exposure to the regulatory impacts associated with power production
- Obtain the lowest-cost power supply
- Reduce risk from fuel price spikes or construction cost escalation associated with generation asset investment
- Lessen the amount of electricity purchased on the power market, which serves as a hedge against future rate increases
- Extend the time needed for upgrades and system growth without new load
- Reduce power bills, possibly even when energy prices go up



# GREAT CHANGE HAS BEEN MADE, BUT THERE IS MORE TO BE DONE.

Efficiency Smart has put in place the necessary infrastructure and is on target to exceed its combined three-year goals. During its first year of operation, Efficiency Smart achieved more than 115 percent of its 2011 aggregate energy savings target. Efficiency Smart will continue to build on these early achievements, evaluating and refining the program as necessary to ensure its success well into the future.

Managing the information required to document savings for the municipal electric systems that participate in Efficiency Smart is an essential function of the program. In 2011, Efficiency Smart established a multifaceted central tracking system with energy efficiency data on the more than 200,000 end-use customers served by its subscribing member utilities. Each time one of these end-use customers submits an approved energy efficiency measure, the savings are calculated, recorded, and attributed to the community where the measure was installed. This allows Efficiency Smart to track and report savings both program-wide and by utility.

During 2011, 47,341 efficiency measures were installed by 7,315 end-use customers across the 48 municipal electric systems enrolled in Efficiency Smart. Data can be further broken down by sector, permitting Efficiency Smart to group savings by residential, commercial, and industrial projects. This is ultimately how results are reported to participating municipal electric systems.



Yellow Springs, Ohio

One area on which Efficiency Smart focused its 2011 efforts was identifying specific markets across participating communities where there was high potential for energy savings. Some of the market sectors that completed the greatest number of projects through Efficiency Smart during 2011 included manufacturers that supported the automotive industry, plastic products, metals, and injection molding businesses.

Several educational institutions also proved to offer robust energy efficiency opportunities,

and Efficiency Smart began developing partnerships at both the K-12 and higher education levels. Efficiency Smart's largest grouping of projects during 2011 was at Bowling Green State University, which included numerous measures to make facilities at the university more energy-efficient. Several additional projects are expected to be completed in the education sector in 2012, including one at Oberlin College with a scope similar to that of the Bowling Green project.

Efficiency Smart will continue to explore additional markets as well as individual businesses in participating communities that have significant potential for energy efficiency. This and other concerted efforts in the program will help identify related opportunities across diverse communities in the future.

## 2011 Residential Savings: 1,978 MWh

So far, the greatest opportunity to achieve residential energy savings for municipal electric systems subscribing to Efficiency Smart has been the replacement of incandescent lighting with more efficient lighting options. In July 2011, Efficiency Smart launched the residential point-of-sale (POS) lighting campaign, which resulted in the redemption of 9,823 coupons for 21,185 compact fluorescent light bulbs (CFLs), for a gross energy savings of more than 1,033 MWh.

Efficiency Smart also piloted a program during the 2011 summer POS lighting campaign to help small hardware stores in communities subscribing to Efficiency Smart compete with larger chains, resulting in several local stores outperforming larger retailers in the redemption of Efficiency Smart coupons.

Another successful pilot last year was Efficiency Smart's door-to-door initiative, in which staff and volunteers visited homes in two small subscribing communities to distribute more than 700 CFLs and share information about Efficiency Smart. These two communities are projected to realize a combined 28 gross MWh in savings as a result of this effort.



Other residential initiatives included rebates for energy-efficient washing machines and refrigerators, a recycling program for secondary but operating inefficient appliances, and a meter loan service to help residential utility customers measure their appliances use of electricity. During 2011, 827 rebates for washing machines and refrigerators were issued, 1,033 appliances were recycled, and 55 meters were loaned through the program.

Overall, progress was made in reducing residential energy consumption across subscribing municipal electric systems during 2011. Although savings in this sector fell short of the combined first-year target, the groundwork was laid to put Efficiency Smart on schedule to meet its three-year savings goals. New residential lighting campaigns are now building upon previous campaigns, and a significant amount of public awareness about Efficiency Smart has been achieved among residential utility customers in subscribing communities.

Efficiency Smart remains committed to meeting its overall residential targets, and this sector will be a strong focus of the program in 2012 and beyond. In accordance with this commitment, in late 2011 Efficiency Smart hired a community and small business outreach manager, who will address new and underperforming residential efforts. Efficiency Smart will continue to build on awareness created in 2011 with additional offerings in 2012, including new types of retail and supply partnerships, retail store events and promotions, and new product categories and financial incentives.

## 2011 Commercial Savings: 5,780 MWh; 2011 Industrial Savings: 10,694 MWh

Efficiency Smart is dedicated to providing cost-effective, energy-efficient solutions for both small and large business utility customers of the municipal electric systems it serves. One of Efficiency Smart's priorities is to understand what is important to the businesses it works with, so it can help them meet their long-term energy efficiency goals. Depending on a company's annual energy usage, Efficiency Smart offers two options – a prescriptive business program and a custom business program.

Efficiency Smart's prescriptive program, also referred to as its Business Energy Rebates program, is intended for businesses that use between 20,000 and 500,000 kWh of electricity annually. The program offers these commercial and industrial businesses fixed financial rebates for the implementation of common energy efficiency measures. Incentives were available in 2011 for more than 80 types of improvements and technologies that reduce energy usage, including lighting and light controls, electric HVAC systems, refrigeration, food service equipment, compressed air, and motors. During 2011, small to midsize energy users installed 1,567 prescriptive measures, accounting for 279 MWh in energy savings.

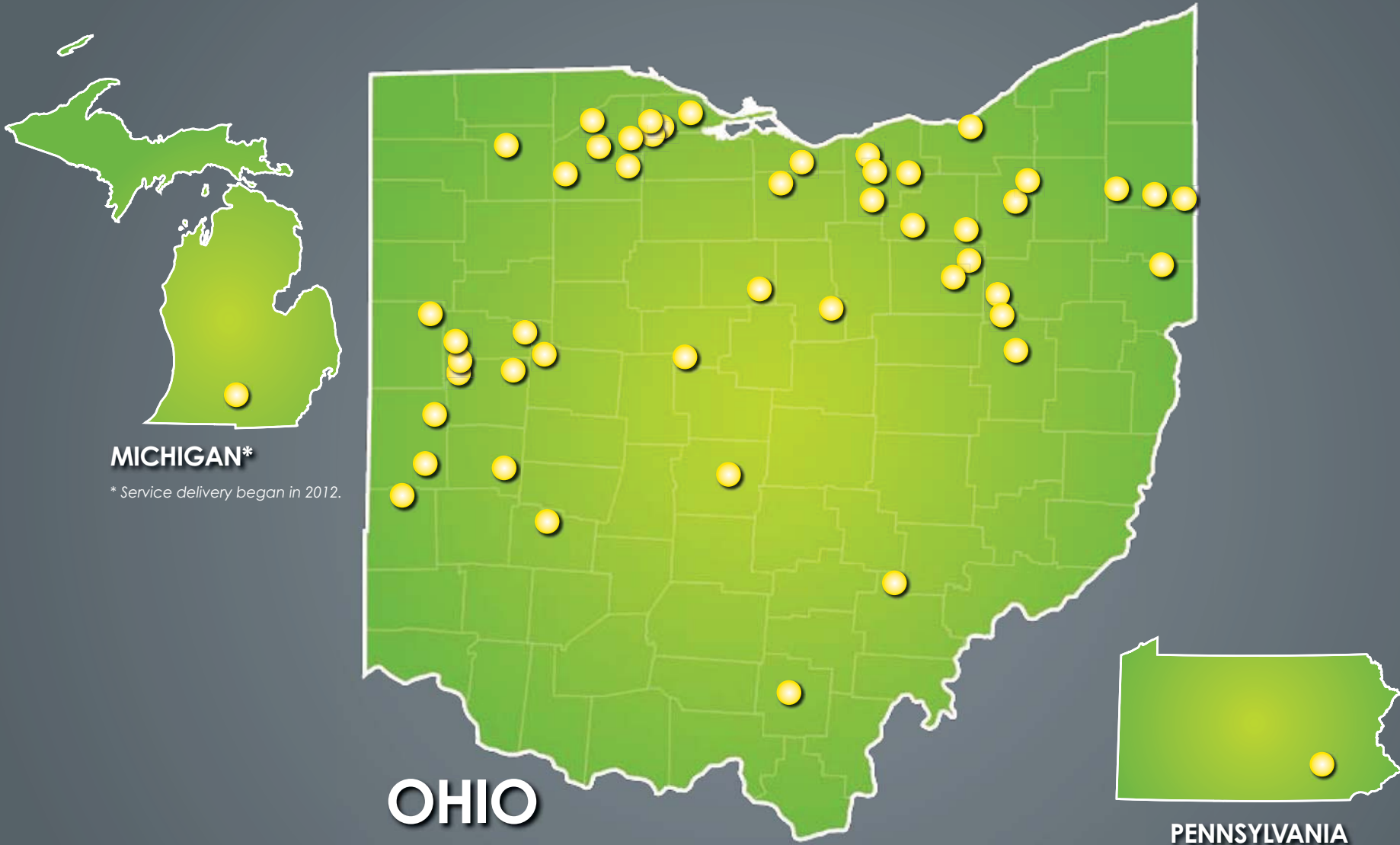
Efficiency Smart's custom program provides a tailored approach to meet the unique needs of businesses with facilities that use more than 500,000 kWh of electricity annually. During 2011, Efficiency Smart added several strategically located key account managers to its staff to work directly with these larger companies and identify opportunities to save them money and energy. Additionally, multiple energy consultants were hired in 2011 to provide technical assistance and engineering advice to help businesses meet their comprehensive and long-term energy efficiency needs.

Overall, industrial businesses completed 39 projects and saved 10,694 MWh of energy during 2011, exceeding Efficiency Smart's aggregate first-year goal for industrial projects by nearly 73 percent. Commercial businesses also fared well in 2011, completing 102 projects and saving 5,780 MWh, exceeding Efficiency Smart's first-year target for the commercial sector by 26 percent.

Efficiency Smart will continue to grow its business energy services in 2012, with increased reach, frequency, and regularity of collaboration with commercial and industrial utility customers. New services, such as a local Contractor & Vendor Outreach program, are also being introduced. More information about Efficiency Smart's new and enhanced 2012 offerings can be found on page 21 of this report.



# THREE STATES, 49 COMMUNITIES, ONE MISSION.



# 2011 IN REVIEW

## EFFICIENCY SMART EXPENDITURES

	Industrial Services	Commercial Services	Residential Services	Efficiency Smart Services and Initiatives
<b>Efficiency Smart Expenditures<sup>1</sup></b>				
Expenditures for 2011	\$1,249,015	\$1,059,783	\$1,396,123	\$3,704,921
Annual Budget Estimate	\$2,271,876	\$1,813,230	\$2,638,212	\$6,723,317
Unspent Annual Budget Estimate	\$876,487	\$417,841	\$1,242,089	\$3,018,396
% Annual Budget Estimate Unspent	39%	23%	47%	45%
<b>Annual MWh Savings<sup>2</sup></b>				
MWh for 2011	10,694	5,780	1,978	18,452
3-Year MWh Goal	30,000	22,000	23,000	75,000
% of 3-Year MWh Goal	35.6%	26.3%	8.6%	24.6%
<b>Coincident kW Savings</b>				
Coincident Peak kW for 2011	1,508	1,324	240	3,072
<b>Total Resource Benefits Savings<sup>3</sup></b>				
Total Resource Benefits for 2011	\$6,865,437	\$4,079,097	\$1,162,743	\$12,107,277
<b>Lifetime Customer Savings</b>				
Lifetime Customer Savings for 2011 (\$)	\$12,320,140	\$7,220,330	\$2,053,370	\$21,593,840
Lifetime Customer Savings for 2011 (MWh)	151,984	86,011	17,114	255,109
<b>End User Completions of Efficiency Measures</b>				
Completions for 2011	39	102	7,174	7,315
<b>Net Lifetime Economic Value<sup>4</sup></b>				
<b>Overall Net Lifetime Economic Value of 2011 Efficiency Smart Investments</b>				<b>\$6,864,920</b>

<sup>1</sup> Under spending in 2011 was due to higher project yields and lower program expenses. Surplus funds have been reallocated to support new initiatives and increase financial incentives in 2012 and 2013.

<sup>2</sup> Savings goal is based on 2011 subscription and does not include Coldwater, MI.

<sup>3</sup> Total Resource Benefits Savings represents the present value of lifetime avoided electrical energy and demand charges as well as fossil fuel and water savings that result for energy efficiency measures.

<sup>4</sup> Net Lifetime Economic Value is equal to Total Resource Benefits plus operations and maintenance savings, minus the costs paid by Efficiency Smart to operate the program and the measure costs paid by participants.

## AMP EXPENDITURES

Services	AMP Administration
<b>Expenditures</b>	
Expenditures for 2011	\$391,352
Annual Budget Estimate	\$565,854
Unspent Annual Budget Estimate	\$174,002
% Annual Budget Estimate Unspent	31%



# Toledo Molding & Die, Inc.

Bowling Green, Ohio  
Efficient Lighting Project



## Project Partners

John Haan  
Maintenance and Facilities  
Toledo Molding & Die

Kevin M. Maynard  
Former Director of Utilities  
City of Bowling Green

Jan Snyder  
Lighting Contractor  
JS Lighting Solutions, LLC

Suzanne C. Clark  
Director  
Community Development Foundation

## Company Background

Toledo Molding & Die, Inc. (TMD) was founded in 1955 as a model and pattern shop. In the spring of 1996, the company launched a new service of blow molding HVAC components, using a single machine in a leased building. In 1998, ground was broken for a new facility in Bowling Green, Ohio, to house TMD's expanding blow-molding business.

## PROJECT GOALS

Eliminate dark areas within the plant and reduce energy usage.

## SOLUTION

Replace inefficient 1,000-watt and 400-watt high-bay lighting with efficient linear fluorescent T5 high-bay lighting systems, resulting in lower energy consumption, shorter fixture start-up times, and an improved maintenance schedule.

## PROJECT SUMMARY

The focus of TMD's Bowling Green facility is on innovation in equipment, processes, and workforce. This same emphasis on innovation prompted TMD to commission an energy-efficient lighting upgrade project. TMD partnered with JS Lighting Solutions, LLC, to upgrade their existing 1,000-watt and 400-watt metal halide high-bay fixtures to efficient linear fluorescent four-lamp T5 fixtures.

The facility-wide efficient lighting upgrade has made an impact on operations at TMD. The factory has better quality lighting and better fixture placement. This has improved visibility for employees while they operate complex manufacturing machinery. The improved lighting has also increased employee morale and productivity, something important in TMD's quality-focused ISO/TS 16949 and ISO 14001 facility. In addition, the new lights do not produce as much heat as the metal halide high-bay lighting they replaced, so the cooling system does not have to work as hard to cool the machinery.

## PROJECT FACTS AT A GLANCE

Annual kWh Savings:	673,000
Annual Cost Savings:	\$43,800
Lifetime Cost Savings:	\$657,000
Rate of Return on Investment:	117%
Simple Payback:	~ 1 year
Annual CO <sub>2</sub> reduction:	693,396 pounds



# Eagle Elastomer, Inc.

Cuyahoga Falls, Ohio

Efficient Lighting Project



## Company Background

Eagle Elastomer, Inc. is a leader in manufacturing fluoroelastomer custom-mixed compounds, as well as extruded and cured sheet products. Incorporated in 1983, Eagle Elastomer manufactured its first products in August of that year at its original Stow, Ohio, location.

With a philosophy of steady, controlled growth in both its sales and its customer base, Eagle Elastomer consolidated its manufacturing operations in 2001. The construction of a new 25,000-square-foot facility in Cuyahoga Falls, Ohio, allowed Eagle Elastomer to continue its emphasis on product quality, rapid turnaround, and top-notch customer service.

## PROJECT GOALS

Reduce energy usage, operating costs, and heat in the plant while improving lighting quality and productivity.

## SOLUTION

Replace inefficient lighting technology with efficient fluorescent high-bay technology and install occupancy sensors in low-traffic areas.

## PROJECT SUMMARY

In 2011, Eagle Elastomer turned its focus toward energy efficiency when it partnered with the City of Cuyahoga Falls, Ott Electrical Services, Inc., and Efficiency Smart to replace lighting within its plant and warehouse. The company installed high-bay T8 fluorescent lamps in place of older metal halide fixtures, re-lamped and re-ballasted its existing T12 fluorescent fixtures, and added occupancy sensor controls. As a result, Eagle Elastomer has achieved its goals of reduced energy consumption, reduced operating costs, reduced heat, and improved lighting quality and productivity.

## PROJECT FACTS AT A GLANCE

Annual kWh Savings:	33,600
Annual Cost Savings:	\$3,800
Lifetime Cost Savings:	\$55,500
Rate of Return on Investment:	42%
Simple Payback:	< 2 years
Annual CO <sub>2</sub> reduction:	34,700 pounds



## Project Partners

Regan McHale  
President  
Eagle Elastomer

Brian Chandler  
Process Development Manager  
Eagle Elastomer

John Ott  
Owner  
Ott Electrical Services, Inc.

Don L. Robart  
Mayor  
City of Cuyahoga Falls

Becky McCleary  
Public Utilities Customer Advocate  
City of Cuyahoga Falls



# Lighting Services, Inc.

Wadsworth, Ohio (location of featured projects)  
Efficient Lighting Project



## Company Background

Lighting Services, Inc. is a comprehensive lighting solutions company headquartered in northeast Ohio that offers a broad range of lighting retrofit installations, interior and exterior service, and a variety of scheduled maintenance programs. The company's mission is to reduce its customers' operating costs while improving facility environments.

## PROJECT GOALS

Improve the lighting environment at clients' facilities so they enjoy a brighter and more contemporary workplace, while boosting their cash flow through lower utility bills and reduced maintenance costs.

## SOLUTION

Upgrade inefficient lighting technology to brighter, more energy-efficient products.

## SUMMARY OF PROJECTS

Lighting Services, Inc. coordinated with Efficiency Smart to complete three lighting projects at various companies in Wadsworth, Ohio, during 2011. The projects included:

- Replacing more than 700 T12 fixtures with HPT8 fixtures
- Upgrading more than 100 fixtures from T12 and 400W metal halides to HPT8 fixtures
- Replacing nearly 400 T12 and metal halide fixtures with HPT8 fixtures

Each of the three facilities where Lighting Services completed projects in coordination with Efficiency Smart have experienced benefits from the lighting upgrades, including improved light quality, increased productivity, reduced operation and maintenance costs, faster fixture warm-up and restart time, reduced energy usage, and more attractive fixtures.

## PROJECT FACTS AT A GLANCE

Annual kWh Savings:	1,005,948 (combined)
Annual Cost Savings:	\$75,636 (combined)
Lifetime Cost Savings:	\$1,084,302 (combined)
Rate of Return on Investment:	54% (average)
Simple Payback:	~ 2.2 years (average)
Annual CO <sub>2</sub> reduction:	927,422 pounds (combined)

# Buehler's Fresh Foods

## Dover, Ohio Location Efficient Lighting Project



### Company Background

Buehler's Fresh Foods is a chain of family-owned and-operated grocery stores founded in 1929. Headquartered in Wooster, Ohio, the company operates 13 grocery stores, six Ace Hardware stores, a catering service, and sit-down restaurants that serve items from its expansive selection of locally grown foods. The company's market differentiation is derived from its sale of locally-grown produce; sustainable, minimally processed beef; and fresh seafood delivered three times per week.

The company has implemented a number of sustainability measures and has made such measures integral parts of its overall operation. The company sells compost made from 100 percent recycled food products from its grocery stores' food waste and has outfitted the engines of a delivery vehicle and semi-truck to operate on waste vegetable oil previously used in its restaurants' fryers.

### PROJECT GOALS

Improve energy efficiency and reduce costs.

### SOLUTION

Use LED lighting technology to increase energy efficiency and occupancy sensors to reduce unnecessary energy usage.

### PROJECT SUMMARY

Efficiency Smart provides LED lighting rebates through its Business Energy Rebates program. Buehler's Fresh Foods submitted a lighting project through this program for its Dover location. The project included the installation of:

- Four wall-mounted occupancy sensors
- Eleven remote-mounted occupancy sensors
- Eleven LED exit signs in the main and storage areas of the grocery store

Through the use of LED lighting technology and occupancy sensors, Buehler's Fresh Foods was able to make its Dover facility more energy-efficient. This achievement was consistent with the company's commitment to sustainability, and should ultimately reduce energy costs at this location.



### PROJECT FACTS AT A GLANCE

Annual kWh Savings:	19,665
Annual Cost Savings:	\$1,785
Lifetime Cost Savings:	\$16,124
Rate of Return on Investment:	186%
Simple Payback:	~ 1.1 years
Annual CO <sub>2</sub> reduction:	37,336 pounds

### Project Partners

Becky Foster  
Director of Construction and Maintenance  
Buehler's Fresh Foods

Richard P. Homrighausen  
Mayor  
City of Dover

David Filippi  
Superintendent  
City of Dover



# Jackson City Schools

Jackson, Ohio

Efficient Lighting and Refrigeration Project



## Institutional Background

Jackson City Schools (JCS) is a public school system located in southeastern Ohio. JCS is composed of one high school, one middle school, and three elementary schools, and has an enrollment of more than 2,400 students. JCS students have many opportunities to become well-rounded individuals through academic, athletic, and fine arts programs.

## PROJECT GOALS

Reduce energy usage and operating costs while improving lighting.

## SOLUTION

Replace inefficient T12 and standard wattage T8 fluorescent lights with reduced wattage T8s in typical classroom space; replace inefficient metal halide lights with high-bay T8s in gymnasiums and sporting areas; and add motion detection occupancy sensors in teacher workrooms, restrooms, storage rooms and gymnasiums.

## PROJECT SUMMARY

Most JCS buildings were constructed prior to 2000, when less energy-efficient technology existed. Energy Optimizers USA, the contractor for the project, completed a comprehensive energy audit of JCS's facilities. The extensive audit identified several equipment upgrades that would maximize energy savings for JCS.

As part of the project, Energy Optimizers installed energy-efficient T8 fluorescent lights, occupancy sensors, and occupancy controls on common-area vending machines in all JCS buildings. These installations improved lighting, reduced unnecessary run times in low-use areas, and shortened the run time of refrigeration equipment and lighting within the vending machines.

## PROJECT FACTS AT A GLANCE

Annual kWh Savings:	384,000
Annual Cost Savings:	\$20,800
Lifetime Cost Savings:	\$276,500
Rate of Return on Investment:	19%
Simple Payback:	~ 5.2 years
Annual CO <sub>2</sub> reduction:	359,700 pounds

### Project Partners

Phil Howard  
Superintendent  
Jackson City Schools

Greg S. Smith  
President  
Energy Optimizers USA

Bill Sheward  
Director of Public Service/Safety  
City of Jackson

# Village of Oak Harbor

Oak Harbor, Ohio

LED Efficient Street Lighting Project

## Village Background

The Village of Oak Harbor, with a population of 2,759, is located on the north bank of the Portage River, in north-central Ohio. Residents and visitors to the area enjoy ample recreational opportunities at the beaches, marinas, state park, and wildlife refuge near the Lake Erie shoreline. The village has a strong agricultural base as well as many small manufacturing, commercial, and service-related businesses.

## PROJECT GOALS

Reduce energy usage and operating costs while improving the quality and coverage of street lighting.

## SOLUTION

Replace 205 inefficient 175-watt mercury vapor bulbs and 103 inefficient 50-watt high-pressure sodium lamps with new energy-efficient 84-watt LED street light fixtures.

## PROJECT SUMMARY

The Village of Oak Harbor extended a request for proposals for new LED street light fixtures. With support from Efficiency Smart, Oak Harbor considered three proposals and selected a high-quality product based on third-party test performance data.

The full project includes the replacement of 308 fixtures, and Oak Harbor's three-person electric department is performing the work. Due to limited staff resources and additional department responsibilities, the project was split into two phases. Phase I consisted of the replacement of 56 fixtures in 2011. The remaining 252 fixtures are expected to be replaced by mid-2012, during Phase II.

## PROJECT FACTS AT A GLANCE

Annual kWh Savings:	44,600
Annual Cost Savings:	\$4,300
Lifetime Cost Savings:	\$65,500
Rate of Return on Investment:	17%
Simple Payback:	5.2 years
Annual CO <sub>2</sub> reduction:	46,000 pounds



## Project Partners

Robert Pauley  
Village Administrator  
Village of Oak Harbor

Barry Reau  
Superintendent of Public Power  
Village of Oak Harbor

Kim Galway  
Utility Billing Clerk  
Village of Oak Harbor

# LOOKING FORWARD TO MORE CHANGE.

Efficiency Smart's strategy calls for clear targets with measurable results. During 2011, progress was made toward meeting the overall project goals, and Efficiency Smart exceeded its aggregate 2011 energy savings target by approximately 2,500 MWh. While proud of the program's first-year achievements, the Efficiency Smart team recognizes there is still a lot of work ahead to ensure that all communities participating in the program meet or exceed their established three-year energy savings goals.

In 2012, Efficiency Smart will continue to offer the primary services available during 2011, while also offering several additions and enhancements to increase the breadth and depth of savings among participating municipal electric systems. This broader effort includes five new initiatives being introduced in 2012.

The first initiative, Special Promotions for Residential Customers of Underperforming Communities, is a targeting strategy that prioritizes services for communities that had low rates of residential participation in 2011. This initiative will focus on improving savings and participation results by targeting promotional efforts, special services, and financial incentives at those communities.

Three savings enhancement initiatives are being launched in 2012: Increased Key Account and Technical Services for Large Commercial & Industrial Customers, Enhanced Residential Retail Efficient Lighting Promotions, and a Customer & Vendor Outreach program. In addition, one new service offering will begin in 2012, Community-Focused Energy Efficiency Services for Residential and Small Business Customers. Each of these five new initiatives is described in more detail on the opposite page.

In addition to the major new initiatives for 2012, Efficiency Smart has continued to refine and improve various aspects of its existing program services and operations. Incentives for additional energy efficiency technologies will be offered in the Business Energy Rebates program beginning in 2012. Additionally, some residential enhancements under

consideration are more rebate categories for residential customers, such as heating, ventilation, and air conditioning (HVAC); LED products; and home electronics.

Thanks partly to higher yields in completed projects; Efficiency Smart under spent its 2011 budget. The surplus has been carried over to 2012, and part of these funds has been reallocated to the new 2012 initiatives and enhancements. A significant portion of these funds will also be used to strengthen financial incentives in both 2012 and 2013 in support of efforts to increase energy savings across municipal electric systems. Additionally, Efficiency Smart ramped up staffing throughout 2011 and into 2012 to effectively launch new and enhanced service initiatives and help increase community energy savings, and will continue to utilize the in-house expertise of VEIC and employ subcontractors as appropriate.

Efficiency Smart commenced full-time administration of energy efficiency services for the Coldwater Board of Public Utilities on January 3, 2012, making it the 49th community served by Efficiency Smart. Coldwater's program includes standard Efficiency Smart services for residential, commercial, and industrial customers, but it also incorporates additional services and efficiency measures required by the Michigan Public Service Commission.



In addition to Coldwater, Michigan, other AMP members will have the opportunity to enroll in the Efficiency Smart program during 2012. Service delivery to new participants will begin in January 2013. Promotional activities will be conducted in the first half of 2012, and both AMP and Efficiency Smart will coordinate with interested communities to initiate and pass any local legislation necessary for them to join Efficiency Smart.

### Special Promotions for Residential Customers of Underperforming Communities

Efficiency Smart employs several marketing tactics across communities to engage their residents and encourage participation in the program. However, some standard methods may not be sufficient in all communities, especially in those that lack local opportunities to help promote energy-efficient products and services. Through this initiative, promotion of energy-efficient products and services will be customized to address the unique needs of targeted municipal electric systems with low 2011 participation. This approach will leverage local conditions and make energy efficiency more accessible to the communities' residents.

### Increased Key Account and Technical Services for Large Commercial & Industrial Customers

Efficiency Smart uses a customized approach to best meet the needs of the large commercial and industrial customers of its subscribing municipal electric systems. Through this initiative, Efficiency Smart will increase technical and Key Account Management (KAM) services for large commercial and industrial businesses by expanding staff, technical services, and support resources. These enhancements will allow greater reach, frequency, and regularity of services to large business utility customers of participating municipal electric systems. Additionally, special emphasis will be placed on providing every community with the ability to save money and energy through a focus on turning opportunities into energy efficiency projects and increasing visibility within the large commercial and industrial business population.

### Enhanced Residential Retail Efficient Lighting Promotions

Efficient lighting products are an important focus of Efficiency Smart's residential efforts because these products represent the most cost-effective electrical efficiency opportunities for residential customers in participating municipal electric systems. This initiative strengthens and expands retail efficient lighting campaign features from 2011 through enhanced promotional elements, increased product availability, and greater diversity of product offerings at significant discounts.

### Contractor & Vendor Outreach Program

Efficiency Smart works with numerous manufacturers, suppliers, designers, and installers of energy efficiency equipment and systems (also referred to as vendor partner allies) as they help commercial and industrial businesses in subscribing municipal electric systems complete energy efficiency upgrades. Efficiency Smart will further enhance its outreach to these vendor partner allies in order to build relationships with them and encourage additional energy efficiency projects within participating communities. Vendor partner allies will be selected for this program on the basis of several criteria, such as the number of projects successfully completed with Efficiency Smart, customers' satisfaction with their services rebated through Efficiency Smart, and having a business located within or servicing a participating Efficiency Smart community.

### Community-Focused Energy Efficiency Services for Residential and Small Business Customers

Some residential and small business customers served by the municipal electric systems participating in Efficiency Smart may not have the initial resources available to install energy-efficient products. To reach these customers, Efficiency Smart will conduct a direct installation pilot program and partner with other organizations, such as weatherization assistance programs and housing authorities that target similar residential customers. This pilot will also focus on small businesses that use less than 20,000 kWh of electricity annually- and that therefore- are not eligible for Efficiency Smart's standard Business Energy Rebates program.



Photo courtesy of Playhouse Square in Cleveland, Ohio

# THE POWER OF CHANGE.



Photo taken following AMP's Board of Trustees meeting in February.

**Pictured here - back row:** William Zigli, Cleveland, Ohio; Jon Bisher, Napoleon, Ohio; Paul Beckhusen, Coldwater, MI; Michael Dougherty, Cuyahoga Falls, Ohio; Brian O'Connell, Bowling Green, Ohio.

**Front row:** Dave Filippi, Dover, Ohio; Jeff Brediger, Orrville, Ohio; Tracy Reibold, Newtown Falls, Ohio; and Steve Dupee, Oberlin, Ohio.

Efficiency Smart participating communities not represented in this photo:

Amherst, Ohio  
Arcanum, Ohio  
Beach City, Ohio  
Bradner, Ohio  
Brewster, Ohio  
Columbiana, Ohio

Columbus, Ohio  
Custar, Ohio  
Eldorado, Ohio  
Elmore, Ohio  
Ephrata, PA  
Galion, Ohio

Genoa, Ohio  
Glouster, Ohio  
Grafton, Ohio  
Haskins, Ohio  
Hubbard, Ohio  
Hudson, Ohio

Jackson, Ohio  
Jackson Center, Ohio  
Lakeview, Ohio  
Lodi, Ohio  
Lucas, Ohio  
Mendon, Ohio

Milan, Ohio  
Minster, Ohio  
Monroeville, Ohio  
New Bremen, Ohio  
Niles, Ohio  
Oak Harbor, Ohio

Pemberville, Ohio  
Prospect, Ohio  
St. Marys, Ohio  
Tipp City, Ohio  
Versailles, Ohio  
Wadsworth, Ohio

Waynesville, Ohio  
Wellington, Ohio  
Woodville, Ohio  
Yellow Springs, Ohio



A key component of Efficiency Smart's success is the commitment of its participating municipal electric systems to the common goal of energy efficiency. Efficiency Smart staff members work closely with its partner communities toward this shared goal, often tailoring initiatives and localizing outreach to best meet their needs.

One example of localized outreach was a pilot program Efficiency Smart launched during its summer 2011 lighting campaign to help smaller hardware stores compete with larger chains. Although Walmart had the most coupon redemptions overall, some local hardware stores like Main St. Ace Hardware in Bowling Green and Holmesbrook Ace Hardware in Wadsworth outperformed the large retailers in coupon redemptions in their communities.

Trudie Sponsler, manager of the Holmesbrook Ace Hardware, shared that she didn't normally carry the types of products being promoted during the Efficiency Smart campaign and that the number of CFLs sold exceeded her expectations. According to Sponsler, "The Efficiency Smart promotion brought in new and repeat customers who might not otherwise have shopped at our store, many of whom made other purchases in addition to the light bulbs."



Effective promotion methods tested during the hardware store pilot program, such as in-store signage and displays, are now available to any local store that requests them. With a little localization, energy efficiency can have an impact on a community beyond what is realized directly through energy savings.

***"The investment in energy efficiency is a necessary service by all utilities. By partnering with Efficiency Smart, municipal utilities have the opportunity to provide energy efficiency services at a professional level while maintaining a local identity. Efficiency Smart has built all the relationships with vendors and professionals in this industry and yet is very responsive to local needs."***

*Chris Easton, Director of Public Service for the City of Wadsworth*

***"The City of Wadsworth made a commitment to participate in the Efficiency Smart program. In doing so, we wanted to make sure we promoted the program and made a real effort in reaching our manufacturers and other high-volume energy users."***

*Harry Stark, Assistant Director of Public Service for the City of Wadsworth*

Like the City of Wadsworth and other communities enrolled in Efficiency Smart, the City of Cuyahoga Falls has also made a significant commitment to energy efficiency. Cuyahoga Falls strategically planned to participate in the program to further develop what has already been accomplished locally through a long history of energy efficiency and conservation promotion on the part of the Cuyahoga Falls Electric System.

***"Efficiency Smart has highlighted some of the extraordinary benefits available in public power communities that are not offered as part of a long-term, sustainable community energy strategy in investor-owned utilities. Programs like Efficiency Smart can further support public power's competitive edge."***

*Michael Dougherty, Superintendent for the City of Cuyahoga Falls*

***"Efficiency Smart staff has been responsive to our community's energy efficiency needs and to specific residential and commercial characteristics that define these needs."***

*Becky McCleary, Public Utilities Customer Advocate for the City of Cuyahoga Falls*

One way that Efficiency Smart works to meet the varying requirements of participating municipal electric systems is through customized initiatives. In late 2011, Efficiency Smart piloted a program in the villages of Custar and Lucas in which Efficiency Smart staff and volunteers went door-to-door to hand out CFLs, talk to residents about the importance of energy efficiency,

and answer questions about Efficiency Smart. The participants found Custar and Lucas residents very receptive to switching to CFLs and making their homes more energy-efficient, and both municipal electric systems realized significant energy savings as a result of the initiative.



In 2012, Efficiency Smart will expand the door-to-door initiative to other communities that have characteristics similar to those of Custar and Lucas. Numerous other out-reach initiatives are planned for 2012, several of which will be tailored to the unique needs of the communities where they will occur.

Customizing initiatives from community to community will help Efficiency Smart ensure that each of the diverse municipal electric systems it serves will achieve its energy savings goals. Many participants have realized a large amount of energy savings so far, among them the Oberlin Municipal Light & Power System, whose Energy

Services & Sustainability Initiatives Manager, Doug McMillan, discussed some of the benefits of the program beyond saving energy.

**“The Efficiency Smart program has been a valuable resource for customers who are having to do more with less, offering tangible benefits that affect their bottom line. In addition, financial incentives and technical support offered through the program have been a key motivating factor for customers to complete efficiency projects previously identified through industrial assessments and energy audits performed by Oberlin Municipal Light & Power System in coordination with AMP.”**

*Doug McMillan, Energy Services & Sustainability Initiatives Manager for the City of Oberlin*

Like Oberlin, Tipp City has seen increased demand for energy efficiency projects in its community, and according to Christy J. Butera, director of utilities for the City of Tipp City, businesses and residents who have used the program have received great benefit from it.

**“On the commercial end, the program has really taken off and we have quite a few companies receiving the benefits of the program. Being what I call a partial participant in the program, I had no expectations on the commercial side. So the program has exceeded my expectation in every sense.”**

*Christy J. Butera, Director of Utilities for the City of Tipp City*

Like those responsible for energy efficiency in Wadsworth, Cuyahoga Falls, Oberlin, Tipp City, and the other municipal electric systems participating in Efficiency Smart, Jeff Brediger, director of utilities for the City of Orrville, also recognizes the benefits of energy efficiency.

**“The principal benefit of partnering with Efficiency Smart has been raising awareness of energy efficiency. The Efficiency Smart program has created an environment where residents and businesses now understand the importance of energy efficiency in their everyday life. Purchasing decisions are now influenced by the long-term effects of energy usage and potential savings.”**

*Jeff Brediger, Director of Utilities for the City of Orrville*

Numerous benefits are associated with energy efficiency, many of which are described in more detail throughout this report. Regardless of whether a municipal electric system is looking to reduce risks associated with power supply, provide incentives for its customers to become more energy efficient, or to take advantage of other benefits related to energy efficiency, Efficiency Smart partners with municipal electric systems to find ways to meet their needs.

Brediger added, “We believe any municipality acting in the best interests of its residents will want to be a part of this program. The long-term benefits of energy efficiency and the short-term benefits of financial incentives are a win-win for the residents and, in turn, the municipality.”



*The data presented throughout Efficiency Smart's annual report has been calculated based on Efficiency Smart's internal savings claims. This data is still subject to independent evaluation, measurement and verification, and therefore, may not be final. This pocket is for any potential updates to this report, which will be made available at a later date.*



1111 Schrock Road  
Suite 203  
Columbus, Ohio 43229

[www.energysmart.org](http://www.energysmart.org)