Introduction

The Mid-America Regional Council (MARC) formed a partnership with a consortium of city and county governments entitled the Regional Energy Efficiency and Conservation Strategic Initiative (REECS) in 2009. The consortium was made up of 11 of the 14 local jurisdictions in the Kansas City metropolitan region that received Energy Efficiency and Conservation Block Grant (EECBG) funds from the U.S. Department of Energy. The funding was intended to assist U.S. cities and counties to develop, promote, implement and manage energy efficiency and conservation projects and programs designed to:

- Reduce fossil fuel emissions;
- Reduce the total energy use of the eligible entities;
- Improve energy efficiency in the transportation, building, and other appropriate sectors; and
- Create and retain jobs.

Through formula grants, the EECBG program empowered local communities to make strategic investments to meet the nation’s long-term goals for energy independence and leadership on climate change.

The REECS project sought to further DOE’s grant goals by fostering energy sustainability in the Greater Kansas City region through collaboration, education and outreach. Participants in the REECS initiative included:

- Blue Springs, Mo.
- Clay County, Mo.
- Independence, Mo.
- Jackson County, Mo.
- Johnson County, Kan.
- Kansas City, Kan.
- Lee’s Summit, Mo.
- Lenexa, Kan.
- Olathe, Kan.
- Shawnee, Kan.
- Wyandotte County, Kansas City, Kan.

The purpose of this final report is to document the progress that has been made through the REECS project in the past three years. The categories listed below coincide with the eight strategies contain within the REECS Strategic Framework white paper that was published in spring 2010.

Executive Summary

Background

For the past three years MARC and its partners have worked diligently to accomplish the short-term goals set out in the Regional Energy Efficiency and Conservation Strategic Framework. The framework’s eight categories are:

1. Lead by example by implementing innovative energy conservation and efficiency practices in local government
2. Develop adoption and implementation strategies for local building and development codes, specifications and standards
3. Establish effective partnerships among state, regional and local energy programs
4. Implement education, outreach and citizen engagement strategies and programs
5. Create incentives for energy efficiency and conservation
6. Link energy strategies with related sustainability efforts
7. Assess, monitor and report the effectiveness of clean energy strategies
8. Promote emerging solutions and technologies to encourage market transformation

Four of the above were deemed top priorities (signified in bold print) and garnered the greatest efforts of the REECS project team. The funding provided by the member jurisdictions of REECS, a portion of their EECBG grant from the U.S. Department of Energy, allowed significant progress to be made in these four goals. Key findings and top accomplishments are listed below.
Stronger Energy Code adoption

MARC facilitated many meetings and discussion forums over the last two years among community stakeholders to help identify key issues for consideration by local governments. The purpose of this dialogue was to promote understanding of the new energy code provisions, and the potential impacts on homebuyers and the building industry. Discussions were informed by national experts (Building Codes Assistance Project or BCAP and the Midwest Energy Efficiency Alliance or MEAA), local code officials, and the Home Builders Association of Greater Kansas City (HBA). Research was also completed reflecting the impact of adopting energy codes to energy consumption and expenditures. As of the date of this report, Jackson County, Mo., and the Unified Government of Wyandotte/Kansas City, Kan., have adopted the 2009 IECC and the City of Kansas City, Mo., has adopted 2012 IECC building and energy codes, with amendments that mirror amendments made by the City of Overland Park, Kan. (Although not a financial contributor to REECS, the city of Overland Park actively participated in the region’s discussions on energy codes adoption.) Before year’s end it is expected that a significant number of local jurisdictions will follow in adopting stronger energy codes. The ultimate goal of creating regionally consistent codes is on the path to be realized through the REECS project.

Best Practices in Local Government and Sustainable Success Stories

Twenty-seven sustainable success stories have been selected through the REECS program in the last three years, highlighting best practices by local governments, nonprofit organizations and private corporations that exemplify sustainability. This annual recognition provides a means to celebrate the successes in the region and to acknowledge innovations that can be replicated.

Education and Outreach

Wide communications were accomplished through educational events, a regional citizen survey and public outreach materials. Thirteen workshops were held, with 1,050 participants; 450 regional constituents participated in a survey gauging knowledge and current usage of energy conservation measures; 13,000 Green Idea Books were printed and partially distributed; two 30-second commercials were created to be aired on public access channels and other media outlets; and six news articles were written for local governments to run in their newsletters and/or websites.

Research

Ten reports have been issued under the REECS project. Most of the documents provide information to guide residents, local governments’ staff, elected officials, private-sector professionals and other stakeholder groups that have an interest in energy efficiency and conservation. The report that required the most research and has provided the greatest insights is the “Impact of the Adoption of International Energy Conservation Codes on Energy Consumption and Expenditures.” Using modeling software, MARC was able to predict the estimated percentage savings the owner of a new home built to the 2009 IECC standards would have for the different communities as a part of the REECS project. Research also demonstrated that simple behavioral changes can have large impacts on household energy expenditures and consumption. Further research was done using 2012 IECC standards providing cost analysis and energy savings.

CONCLUSION

The greater Kansas City region has seen significant, positive movement in energy efficiency, conservation and renewable energy in the past three years. This can be directly attributed to the efforts of the Regional Energy Efficiency and Conservation Strategy initiative, its members and the support provided by the U.S. Department of Energy (DOE).

The initial white paper, describing the strategic framework set out in the REECS project, identified success criteria to measure the impact of the regional strategies over time. The success criteria included: integration, viability, cost-effectiveness; equity; implementation feasibility; economic stimulus; engagement; and capacity building. The accomplishments listed in this final report verify that these success criteria are being met. There continues to be positive momentum in the Kansas City region to advance this strategic framework – providing certainty that further achievements and successful outcomes are forthcoming.
Strategy 1: Lead by example by modeling innovative practices in local government

The strategic goal of “lead by example” was one of four top priorities for the REECS steering committee. Recommendations included the development of strategies to implement new ideas, assess successes and failures, and encourage replication; and to promote awareness and recognition of innovative practices to elected officials and constituents.

Accomplishments

The REECS framework uses the phrase “lead by example” to recognize the innovative practices that currently exist in our region; acknowledge that new ideas and replicated programs are valued and encouraged; make a statement that exemplary leadership is an integral component of our strategy; and provide the catalyst for further advancements in implementing energy efficiency, conservation and renewable energy solutions.

Through the U.S. Department of Energy’s Energy Efficiency and Conservation Block Grant (EECBG) allocations, the cities and counties that make up the REECS initiative were able to lead the region in energy efficiency and conservation improvements – all are estimating significant annual energy savings. Examples of these accomplishments include:

- major energy improvements in publicly-owned facilities (by conducting energy audits and installing energy efficient systems and equipment);
- adoption of a comprehensive sustainability action plan;
- creation of a loan loss reserve fund and/or rebate programs;
- pilot programs to test high-efficiency street lighting;
- installation of PC energy management systems;
- electric vehicle charging stations installations; and
- designated funding to address community-related EEC projects, which serve disadvantaged residents.

A full list of accomplishments that have been achieved by the local jurisdictions that participated in the REECS project is highlighted in Appendix A.

In addition, the REECS initiative model should be considered a best practice in regional collaboration and cooperation, shared resources and governance, and strategic planning and performance management. This three-year project demonstrated how 11 communities can come together to make real regional progress. Through REECS, local communities learned from one another, strengthening their individual and collective efforts.

Sustainable success stories

The REECS project supported the selection and the recognition of regional, sustainable best practices. The following projects and initiatives were chosen by a juried selection panel from proposals submitted through an annual Request for Proposals (RFP) process. Annual events to present the projects attracted over 100 persons each year.
### Year | List of Honorees
--- | ---
**2011 Honorees** | Sustainability in Action, University of Missouri – Kansas City;  
ReStore, Habitat for Humanity Kansas City;  
Project Living Proof, Metropolitan Energy Center;  
Grown in Ivanhoe, Ivanhoe Neighborhood Council;  
Geothermal Project/Energy Conservation Measures, City of Prairie Village, Kan.;  
Energy Conservation and Education, Eudora USD 491;  
Clothesline Sale, Pembroke Hill School Parents’ Association

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**2010 Honorees** | Center City Neighborhood Revitalization and Greening, Westside Housing Organization;  
Douglas L. Smith Treatment Plant Cogeneration, Johnson County, Kan., Wastewater;  
Freda Markley Early Childhood Center, WSKF Architects;  
KCATA Troost Avenue BRT System, Taliaferro & Browne, Inc.;  
MindDrive – Automotive Design Studio, DeLaSalle Education Center High School, Kansas City, Mo.;  
Natural Stormwater Treatment System, Bowman Bowman Novick Inc. and Burns & McDonnell;  
Platte County Green Build Program, Platte County, Mo.;  
Posty Cards Inc., Expansion Project, Posty Cards Inc.;  
Westside Housing Organization Focus Green Programs, Westside Housing Organization.

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**2009 Honorees** | 18 Broadway, DST Systems;  
405 Southwest Boulevard, Davison Architecture + Urban Design;  
Downtown Development Code, City of Blue Springs, Mo.;  
Festival Recycling Program, City of Lenexa, Kan.;  
Green Initiative, MoDOT;  
K-State Olathe Innovation Campus - Kansas Bioscience Park, Schlagel & Associates;  
Lenexa Central Green, City of Lenexa, Kan.;  
Longview Road Improvement Project, Jackson County Public Works;  
Mission Solid Waste Program, City of Mission, Kan.;  
PlanetReuse, PlanetReuse;  
K-10 Corridor, Johnson County Transit Authority.

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### Future Recommendations and Next Steps
The following are recommendations to continue the goals of the REECS initiative in the area of best practices.

1. Expand REECS initiative’s role in future.
2. Maintain the network of relationships with regional constituents built through the project.
3. Continue to promote Sustainable Success Stories and host recognition events.
4. Promote best practices through Academy for Sustainable Communities (ASC) events.
Strategy 2: Adopt and implement strategies for local building and development codes and ordinances

Adoption of stronger, more regionally consistent energy efficiency building codes for new residential construction has been the top priority for the REECS steering committee. This goal has also seen the most activity in the past year. The 2010 recommendations stated in the strategic framework included: establish consistent minimum standards across the region; design and implement joint public education efforts; promote innovations and code alternatives; strive for consistency; promote benefits of updated standards; and collect and promote best practices.

Accomplishments

Energy conservation codes have been tested and proven to decrease energy usage. They are of such importance that the DOE requires all government entities that accept ARRA funding achieve 90 percent compliance with the 2009 IECCs (or later version) by 2017 and measure compliance each year. To this end, the REECS steering committee set a goal to facilitate adoption of uniform energy conservation and efficiency building codes across the region for new buildings, additions and renovations.

To advance this goal, many local communities are evaluating the International Code Council (ICC) 2012 International Energy Conservation Code (IECC), which includes enhanced energy-efficiency requirements. MARC facilitated many meetings and discussion forums over the last two years among community stakeholders to help identify key issues for consideration by local governments. The purpose of this dialogue was to promote understanding of the new energy code provisions, and the potential impacts on homebuyers and the building industry. Discussions were informed by national experts (Building Codes Assistance Project or BCAP, and the Midwest Energy Efficiency Alliance or MEAA), local code officials, and the Home Builders Association of Greater Kansas City (HBA).

A policy brief has been written as a guide for elected officials as they consider new energy code adoptions. The key findings are listed below:

<table>
<thead>
<tr>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adoption of stronger codes saves energy and money while providing a healthier, more comfortable environment. If a community is currently operating with the 2006 IECC, adoption of the 2009 IECC is projected to reduce energy use by 15 percent. Adoption of 2012 IECC is estimated to reduce energy use by 30 percent. More significant savings would result if communities which either do not have an energy code now or who are using an earlier version of the IECC than 2006.</td>
</tr>
<tr>
<td>2. Adoption of newer energy codes will increase the cost of construction of new single-family homes. BCAP estimates that the added cost to build to 2012 over 2006 IECC is $2,293. Based on input from the HBA, MEEA estimates that the incremental cost of construction would be $3,000 for a 2,400 square foot home with a full basement, with annual energy savings of $570, and a simple payback period of 5.5 years. The HBA estimates increased costs ranging from $11,664 to $20,453 based upon data from three builders who currently build using the 2006 IECC. Finally, an individual builder now building at the 2012 IECC standards quoted an actual cost of slightly less than $7,000. Percentage increase of costs range from 1 to 7 percent.</td>
</tr>
<tr>
<td>3. The combined mortgage and utility payments would be less for a house built to 2012 IECC than one built to 2006 IECC. According to BCAP, monthly utility bill savings are at least five times greater than the additional mortgage payment amount needed to cover the initial up-front cost of installing energy saving features that meet the 2012 IECC.</td>
</tr>
<tr>
<td>4. Amendments to the 2012 IECC are needed to tailor model national language to better fit local markets and building practices. Discussions in Overland Park, Ks., involved HBA and key industry experts, resulting in amendments to the 2012 IECC that were adopted by Overland Park (which reduced many requirements to 2009 IECC levels). Similar conversations in other communities will likely transpire in an effort toward achieving code uniformity among jurisdictions in the region.</td>
</tr>
<tr>
<td>5. Adoption of new energy codes represents a significant step in the Kansas City region's evolution toward energy conservation and sustainability. Local and regional processes have benefited from an approach that includes involving broad stakeholder involvement, tailoring national models to local conditions, learning from existing local best practices, creating processes to learn what works here and, finally, adjusting local policies over time based on lessons learned.</td>
</tr>
</tbody>
</table>
**Future Recommendations and Next Steps**

The following are recommendations to continue the goals of the REECS initiative in the area of adoption and implementation strategies for local building and development codes and ordinances.

1. Monitor of code adoption among local jurisdictions in the Kansas City region.
2. Maintain the network of relationships built through the project with building officials, homebuilders and other stakeholders.
3. Promote further development of baseline design standards that implement energy efficiency best practices.
4. Promote best practices in code adoption and implementation through ASC events and integration with other programs.
5. Promote the need for adequate resources for consistent inspection and enforcement of newly adopted energy codes by local officials.
Strategy 3: Implement education and outreach public involvement strategies

Education and outreach were also seen as top priorities for the REECS steering committee and those that are most appropriate to be delivered on a regional scale. Recommendations included: establish different strategies and messages that reach out to members of the public, business owners and elected officials; promote behaviors that save energy; and promote retrofitting existing buildings.

Accomplishments

Education

On behalf of the REECS initiative, MARC hosted 13 workshops from November 2009 to May 2012. The topics of the training programs and discussion forums explored energy in the context of national trends, regional stakeholders’ current practices, priorities and future expectations, sustainable success stories and exploration of a metro-wide standard response to updated energy codes. The attendance at these 13 workshops was 1,050 participants. A list of events follows:

<table>
<thead>
<tr>
<th>Date</th>
<th>Name of the Event</th>
<th>Presenter(s)</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/23/2009</td>
<td>2009 Sustainable Success Stories</td>
<td>11 awardees</td>
<td>1141</td>
</tr>
<tr>
<td>3/29/2010</td>
<td>Bright Futures Series – workshop 1</td>
<td>David Eisenberg; Phaedra Svec</td>
<td>101</td>
</tr>
<tr>
<td>5/14/2010</td>
<td>Bright Futures Series – workshop 2</td>
<td>Stephen Hardy; Phaedra Svec</td>
<td>111</td>
</tr>
<tr>
<td>11/16/2010</td>
<td>Sustainable Development Codes Framework</td>
<td>Rocky Mountain Land Use Institute (RMLUI) – William Shutkin, Chris Duerksen, Ben Herman</td>
<td>64</td>
</tr>
<tr>
<td>12/3/2010</td>
<td>2010 Sustainable Success Stories</td>
<td>10 awardees</td>
<td>136</td>
</tr>
<tr>
<td>5/9/2011</td>
<td>Urban forestry workshop</td>
<td>David Nowak</td>
<td>75</td>
</tr>
<tr>
<td>9/6/2011</td>
<td>2009-2012 IECC</td>
<td>Isaac Elnecave</td>
<td>55</td>
</tr>
<tr>
<td>9/6/2011</td>
<td>Regional implementation of IECC</td>
<td>Isaac Elnecave</td>
<td>25</td>
</tr>
<tr>
<td>12/2/2011</td>
<td>2011 Sustainable Success Stories</td>
<td>7 awardees</td>
<td>131</td>
</tr>
<tr>
<td>12/15/2011</td>
<td>2012 IECC Discussion Forum</td>
<td>Michael Hairston; Brian Sernulka</td>
<td>68</td>
</tr>
<tr>
<td>4/3/2012</td>
<td>2012 IECC Discussion Forum Follow-up</td>
<td>Tim Ryan, Isaac Elnecave, Mike DeWain</td>
<td>75</td>
</tr>
<tr>
<td>5/1/2012</td>
<td>Energy Efficiency in Urban Design</td>
<td>Reid Ewing</td>
<td>53</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>1,050</td>
</tr>
</tbody>
</table>
Communications and Outreach

The REECS Steering Committee named a Communications and Outreach subcommittee that discussed and finalized a communications plan for the initiative. This plan changed over time due to shifting priorities, funding availability, etc. The high points of the communications plan and key deliverables are listed below.

- **Green Remodeling Idea Book** – The idea book is intended to help area residents make cost-effective remodeling decisions to conserve energy and other resources. REECS has printed 13,000 copies. Copies of Green Remodeling Idea Book were distributed to the public through REECS committee members and other related energy nonprofit organizations, e.g., Habitat ReStore and Heartland Habitat.

- **Promotions** – A marketing ad ran in Greenability, a local general-interest environmental magazine that focuses on home energy efficiency. The ad was deemed a good use of REECS funds because the issue in which the ad ran will see much reuse as an overview of a local, public energy-efficiency home makeover project, Project Living Proof.

- **Regional Citizen Survey** – This regional survey was implemented to determine residents’ knowledge and current usage of energy conservation measures. Hebert Research Inc. conducted the survey. The telephone and online survey had responses from 450 regional residents in all nine metro counties. Key findings from this survey served as the basis of the final REECS outreach effort.

- **Outreach**
  - Consulted on an episode of Imagine KC, a 30-minute program on local public television on energy conservation, which was viewed by thousands of area residents. Through Imagine KC, residents are encouraged to become engaged in community and individual efforts.
  - Created and produced two 30-second commercials for use in social media outlets and aired on targeted public service cable stations to promote compelling messages for member cities and counties to use in outreach efforts.
  - Produced six newsletter articles to run in city and county newsletters and/or other media outlets.

- **Policy Development Promotion** - A policy brief was prepared to educate elected officials in an effort to adopt more stringent, regionally consistent energy efficiency building codes for new residential construction.

**Future Recommendations and Next Steps**

The following are recommendations to continue the goals of the REECS initiative in the area of education, communications and outreach.

1. Promote REECS partnerships and accomplishments as a national best practice.
2. Continue to host ASC events on topics of energy efficiency and conservation.
3. Continue to host Sustainable Success Stories to highlight energy efficiency and conservation best practices.
4. Continue to update MARC’s energy website with national, state and local resources.
5. Integrate energy efficiency messages with other regional energy projects.
Strategy 4: Assess, monitor and report the effectiveness of clean energy strategies

Monitoring and conducting regional research was seen as a key component for the success of goals set by REECS steering committee. Recommendations included: collect appropriate data at different scales to support analysis and evaluation of regional and local policies and programs.

Accomplishments

Research

On behalf of the REECS project, MARC hired Ariel Green, an intern from the University of Missouri-Kansas City. She was given the responsibility of compiling data and preparing research documents that would provide insights on the Kansas City metropolitan region’s energy efficiency and conservation practices. Ariel was able to provide high quality data and analysis to the REECS steering committee that aided in the accomplishments of its project goals. Most relevant and impactful was a report analyzing the energy cost savings and expenditures if adopting 2009 and/or 2012 International Energy Conservation Codes (IECC). This report was applauded by two national energy efficiency and conservation (EEC) organizations as a well-prepared, comprehensive report.

Research reports written on behalf of REECS in 2010 and 2012 are listed below:

<table>
<thead>
<tr>
<th>Report Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>REECS Framework White Paper</td>
<td>This white paper outlines an approach developed in collaboration with area communities and stakeholders. It includes actionable, short- and long-term goals framed within the context of a regional strategic framework.</td>
</tr>
<tr>
<td>Energy Efficiency Rebate Guide</td>
<td>This report was written in 2010 identifying the many energy-efficiency and conservation programs (EECPs) throughout the region available to homeowners. This guide offers one single source for the many opportunities to save energy and money so that residents in the Greater Kansas City region can more easily adopt sustainable practices.</td>
</tr>
<tr>
<td>Utility Energy Efficiency Rebates and Programs</td>
<td>Similar to the Energy-Efficiency Rebate Guide, this report offers a single source for utility rebates and programs for residents living in the 11 REECS communities.</td>
</tr>
<tr>
<td>EEC Practices by Subject &amp; Jurisdiction</td>
<td>Report on the status of metro energy and building codes, which gives current regulations adopted in 55 cities within the region (residential and commercial).</td>
</tr>
<tr>
<td>Green Practices Within the Community</td>
<td>MARC researched and compiled information from each community to provide a snapshot of where the region currently stands in regard to energy conservation. This information was compiled in 2010 and updated in 2011.</td>
</tr>
<tr>
<td>Green Toolkit</td>
<td>This guide compiled information relating to climate protection plans, energy audits and improvements, green infrastructure, green product procurement policies, IECC, renewable energy and water conservation and reuse.</td>
</tr>
<tr>
<td>Impact Of International Energy Conservation Codes On Energy Consumption And Expenditures in the Greater Kansas City Area</td>
<td>The purpose of this report is to assess the impact of the adoption of IECCs on residential buildings with respect to cost and consumption savings in comparison with the current standards in each respective jurisdiction. Using EnergyGauge® software to compare current standards with the IECC, MARC was able to estimate the potential cost and consumption savings resulting from the adoption of the 2009 IECC and the 2012 IECC.</td>
</tr>
<tr>
<td>Regional Solar Energy Policies</td>
<td>Status of solar energy codes and policies in the region.</td>
</tr>
<tr>
<td>Cost benefit analysis of implementing 2012 IECC for KC region</td>
<td>BCAP (Building Code Assistance Program) prepared an analysis of cumulative homeowner profit after paying incremental construction costs for new single family homes meeting 2012 building energy codes.</td>
</tr>
</tbody>
</table>
It should be noted that MARC received a great deal of cooperation in collecting and analyzing the data that appears in these reports from the REECS member cities and counties and other regional jurisdictions’ staff. Special recognition needs to go to representatives of Kansas City Power & Light (KCP&L) and Missouri Gas Energy (MGE) for providing energy usage data and to BCAP and MEEA for their expertise and willingness to provide technical assistance to MARC staff and regional stakeholders.

**Future Recommendations and Next Steps**

The following are recommendations to continue the goals of the REECS initiative in the area of EEC research.

1. Update reports and data, if resources are available.
2. Promote BCAP, MEEA and DOE’s cost analysis and findings to local jurisdictions to promote adoption of IECC.
3. Distribute updated data when available.
Strategy 5: Link energy strategies with related sustainability efforts

Finding and promoting regional, sustainable solutions was a secondary goal but an important one for the REECS steering committee. Recommendations included: coordinate with various energy grant objectives; convene diverse stakeholder groups; further expand regional strategies; and promote open communications and periodic review with other sustainable initiatives.

Accomplishments

The REECS white paper identified key success criteria, one of which was “integration.”

Integration – Does our approach appropriately complement, reinforce and leverage other related sustainability initiatives (e.g., transportation, air and water quality, solid waste and recycling, greenways and open space conservation, workforce development and green collar job creation)?

The ability to link energy strategies with related regional sustainability efforts indicates whether the REECS accomplishments will have long-term benefits for the region.

Along with the EECBG funds that were received from the U.S. Department of Energy through 14 of the region’s larger jurisdictions, many other resources have been invested in the metropolitan region. Below is a listing of those resources that have been retained by MARC and its community partners that have complemented, aligned and/or leveraged the efforts of the REECS project.

<table>
<thead>
<tr>
<th>Funding / Source</th>
<th>Amount of Investment</th>
<th>Community Match</th>
<th>Alignment with REECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>EnergyWorks KC – DOE EECBG competitive grant</td>
<td>$20,000,000</td>
<td>$0</td>
<td>EE retrofit for neighborhoods, policy development, communications, replication, capacity building and workforce development.</td>
</tr>
<tr>
<td>Smart Lights for Smart Cities – DOE EECBG competitive grant (small cities category)</td>
<td>$4,063,994</td>
<td>$0</td>
<td>Installation and testing of 5000 high efficiency street lights in 25 smaller jurisdictions in the region – promote EE alternatives to local governments, states and utility partners.</td>
</tr>
<tr>
<td>SunShot Solar Partnership Outreach Program – ICMA/ NARC/APA (DOE grant)</td>
<td>$54,000</td>
<td>$0</td>
<td>Promotion of Solar technology as an alternative energy source for local governments.</td>
</tr>
<tr>
<td>Solar Ready KC – DOE SunShot Rooftop Solar Challenge grant</td>
<td>$450,000</td>
<td>$65,000</td>
<td>Decrease soft costs in solar by the promotion of solar-friendly permitting processes and zoning ordinances, creating financing options and educate state agencies on streamlined net metering and interconnection process regulations.</td>
</tr>
<tr>
<td>KCP&amp;L Smart Grid – DOE grant</td>
<td>$24,000,000</td>
<td>$24,000,000</td>
<td>Implement smart grid technology in urban core neighborhoods, which will promote energy efficiency and energy conservation.</td>
</tr>
<tr>
<td>Creating Sustainable Places – HUD Regional Sustainable Communities Planning Grant</td>
<td>$4,250,000</td>
<td>$171,233</td>
<td>Implementing sustainable development planning in six major transportation corridors and enabling further planning in multiple demonstration projects. This includes the development of planning tools that will gauge energy usage and cost saving from different land use types.</td>
</tr>
<tr>
<td>Livable Communities – FHWA</td>
<td>$125,000</td>
<td>$125,000</td>
<td>Tool development and research on livability principles, which includes EEC principles.</td>
</tr>
<tr>
<td>Sustainable Development Code Framework – HUD Challenge grant</td>
<td>$403,432</td>
<td>$206,733</td>
<td>Development of sustainable development framework (which include energy efficiency components) in eight first suburb cities, which can be replicated region wide.</td>
</tr>
<tr>
<td>Livable Communities Pilot Program – USDOT STP funds</td>
<td>$825,000</td>
<td>$0</td>
<td>The alignment of the Livable Communities Pilot Program and Creating Sustainable Places to fund sustainable development demonstration projects.</td>
</tr>
<tr>
<td>Natural Resource Inventory Update – EPA Wetlands grant</td>
<td>$80,000</td>
<td>$0</td>
<td>Enhance the Natural Resources Inventory project to include ecological services, which will enhance green infrastructure investments.</td>
</tr>
<tr>
<td>U.S. Forestry grant</td>
<td>$252,000</td>
<td>$103,000</td>
<td>Regional forestry assessment followed by development of a sustainable community forest policy and planning framework to support regional and local implementation efforts.</td>
</tr>
<tr>
<td>TOTAL INVESTMENT</td>
<td>$54,503,426</td>
<td>$24,670,966</td>
<td>$79,174,392</td>
</tr>
</tbody>
</table>
As part of the HUD-funded Creating Sustainable Places initiative, MARC is developing a land use scenario planning capability based on a GIS model called Envision Tomorrow. Alternative land use and development patterns will be modeled to assess economic, environmental and social benefits. A greenhouse gas emissions calculator will estimate emissions from buildings and transportation associated with each alternative scenario. Energy efficiency, conservation and renewable energy efforts will benefit from such quantifiable metrics resulting from more sustainable planning and design efforts around the region.

**Future Recommendations and Next Steps**

The following are recommendations to continue the goals of the REECS initiative in the area of linking energy strategies with related sustainability efforts.

1. Continually promote the integration of the REECS framework into other regional initiatives.
2. Maintain the network of relationships built through the project.
3. Integrate energy analysis with Creating Sustainable Places and HUD Challenge grant.
   a. Envision Tomorrow EE app
   b. Sustainable Development Codes Framework
4. Promote successes of REECS in future grant initiatives.
5. Integrate EEC in future water, recycling, forestry, urban agriculture, air quality and sustainable development initiatives.

**Strategy 6: Create incentives for energy efficiency and conservation**

Incentives from the Federal and state governments along with regional utilities have been helpful to the REECS initiative. Recommendations highlighted in the REECS white paper included: the development of strategies to implement new ideas, assess successes and failures, and encourage replication; and to promote awareness and recognition of innovative practices to elected officials and constituents.

**Accomplishments**

Understanding the incentives for energy efficiency, energy conservation and renewable solutions that are available from the different levels of government and local utilities companies continues to be challenging. The programs are rapidly changing; have different, increasingly complex structures; vary in terms and applicability; offer multiple options; many have cumbersome application processes; and some incentive options have been discontinued. There will continue to be a need to provide simple and easy access to these programs and have one place where individuals can get complete information.

As part of the REECS project, MARC published the Energy-Efficiency Rebate Guide and a guide to Utility Energy-Efficiency Rebates and Programs in the Greater Kansas City area. Both documents are available on the MARC energy website www.marc.org/energy. The continued challenge is to keep these resource guides updated. In addition, this type of information will be available through the Metropolitan Energy Center’s website, www.kcenergy.org (the City of Kansas City, Mo.’s EnergyWorksKC grant), along with www.beyondthebulb.com, a regional website that will go live in June 2012.

The research currently underway on a potential PACE (Property Assessed Clean Energy) program presents long-term financing options for commercial energy efficiency projects. The promotion of an established PACE program will be widely distributed to regional stakeholders by MARC and its partners.

**Future Recommendations and Next Steps**

The following are recommendations to continue the goals of the REECS initiative in the area of incentives and financial options.

1. Keep information on financial options on regional websites current.
2. Create PACE financing mechanism(s) as appropriate, and market financing opportunities, if or when they become available.
Strategy 7: Establish effective partnerships among state, regional and local energy programs

Establishing effective partnerships among state, regional and local energy programs is an integral part of the success any regional project. The REECS white paper recommendations included: continued relationship building, research ways to coordinate and leverage resources, continue to coordinate with area utilities and seek out additional partnerships.

Accomplishments

Much work has been done in establishing effective partnerships among state, regional and local energy programs. The Kansas City region has a long history of successful partnerships, cooperative planning initiatives and creative problem-solving efforts. Information sharing, collaboration and coordination of services are key components of the REECS framework.

The region is made up of two states, nine counties, 120 cities, and a growing number of for-profit businesses and nonprofit agencies that deal with energy efficiency, conservation and renewable energy. Communication among multiple levels of government and service providers is difficult to coordinate and is seen as the biggest challenge to effective partnerships. During the process of discussing stronger energy codes, many national, state, regional and local constituents were engaged in the process. In particular, staff from the Kansas Energy Office and the Missouri Department of Natural Resources were helpful in framing the issues and giving a state’s perspective on adopting stronger codes. The Bright Futures workshop series in 2010 and the IECC discussion forums held in 2011-12 attracted participants from both states’ energy offices.

Additional partnerships were forged with the Greater Kansas City Homebuilders Association, the Johnson County Building Officials (with direct assistance from Tim Ryan, Overland Park, Kan., chief building official) and the electric and gas utility companies (KCP&L, Missouri Gas Energy, Independence Power &Light, and Board of Public Utilities.) By far the most beneficial partnership that developed in the REECS project was with the Midwest Energy Efficiency Alliance (MEEA) and the Building Code Assistance Program (BCAP). These two national organizations provided valuable data, cost analysis and technical assistance to the project. At no charge to the project, staff from MEEA and/or BCAP made seven trips to Kansas City to either advise or present to our regional stakeholders.

Future Recommendations and Next Steps

The following are recommendations to continue the goals of the REECS initiative in the area of partnership development.

1. Promote continued partnerships with REECS members and other relationships established during the grant period.
2. Forge additional partnerships with interested EEC stakeholders.
3. Continue to work with state energy programs to support local and statewide implementation efforts.
Strategy 8: Promote emerging solutions and technologies to encourage market transformation

The REECS steering committee has agreed to continue its existence to take advantage of emerging regional efforts in the field of energy. Recommendations highlighted in the REECS white paper included support of workforce development efforts in EnergyWorks KC; endorse and support Smart Lights for Smart Cities project; and provide oversight of the SunShot Rooftop Solar Challenge initiative.

Accomplishments

In the past year three years, the Kansas City region has received significant federal and state resources to tackle energy efficiency and energy conservation. Successful efforts have been made to leverage these funds to promote energy issues and renewable technologies in the broader context of regional sustainability. These efforts are described in detail under the accomplishment in Strategy 5.

Solar has emerged as a strong alternative energy solution in the region. Efforts have been made to promote partnerships around solar, e.g., 2013 Solar Decathlon bid, and the SunShot Rooftop Solar Challenge grant award, to reduce soft costs associated with local government processes. Five of the REECS members are partners with MARC and KCP&L in the SunShot solar grant. The REECS steering committee has agreed to provide oversight and guidance for this grant initiative.

The REECS steering committee will also be expanding in the coming months to include a larger stakeholder representation. This will allow this group to broaden its agenda to include future Better Building efforts and to assist in the formation of a regional PACE program.

Future Recommendations and Next Steps

The following are recommendations to continue the goals of the REECS initiative in the area of emerging technologies and energy market transformation.

1. Strive to retain SunShot Rooftop Challenge grant for year two and three.
2. Continue to promote Better Building agenda to region.
3. Support the formation of a regional PACE program.
4. Encourage implementation of high-impact energy efficiency initiatives.
5. Assist with building the energy efficiency workforce of the future
## Conclusion

The greater Kansas City region has seen significant, positive movement in energy efficiency, conservation and renewable energy in the past three years. This can be directly attributed to the efforts of the Regional Energy Efficiency and Conservation Strategy (REECS) initiative, its members and the support provided by the U.S. Department of Energy (DOE).

The initial white paper, describing the strategic framework set out in the REECS project, identified success criteria to measure the impact of the regional strategies over time.

<table>
<thead>
<tr>
<th>Success criteria</th>
<th>Critical questions to be answered</th>
<th>REECS accomplishments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration</td>
<td>Does our approach appropriately complement, reinforce and leverage other related sustainability</td>
<td>Strategy 5 accomplishments highlight the significant integration that has occurred that has aligned/leveraged close to $80 million in regional investments.</td>
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<tr>
<td></td>
<td>initiatives?</td>
<td></td>
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<td>Viability</td>
<td>Is the proposed action financially, technologically and politically viable?</td>
<td>The REECS collaboration between 11 local governments, where each contributed a percentage of their EECBG funds made the project viable. Also having a consistent approach and message on updated energy codes has provided political viability.</td>
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<td>Cost-effectiveness</td>
<td>Were life-cycle costs meaningfully assessed?</td>
<td>There was a great deal of cost analysis and cost effectiveness research completed in the REECS project, specifically in the area of implementing updated energy codes for new single-family home construction. This analysis was instrumental in the recent energy codes adoption process.</td>
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<td>Equity</td>
<td>Are the distributions of costs and benefits equitable and reasonable? Do energy projects,</td>
<td>The REECS project did not address the equity issue directly but the local government members of REECS strategically invested their EECBG funds to assist their vulnerable and disadvantage communities. Best examples include the Unified Government of Wyandotte County/ Kansas City, Kan. and the city of Independence’s rebates and low cost loan programs.</td>
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<tr>
<td></td>
<td>programs and policies advance the interests of vulnerable and disadvantaged communities?</td>
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<td>Feasibility</td>
<td>Does the proposed action contribute to short- and long-term efficiency goals? Is there a cumulative</td>
<td>The REECS framework’s eight strategies identified both short- and-long term goals. The REECS steering committee further prioritized the short-term goals in order to achieve the most important short-term outcomes.</td>
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<td>impact over time?</td>
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<td>Economic stimulus</td>
<td>Do energy programs and policies support economic development activities and the retention or creation</td>
<td>REECS project did not address the economic stimulus of EEC, but did inform other regional efforts through which economic impacts are being accomplished in other DOE grant funded programs, e.g., EnergyWorks KC.</td>
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<td>of new jobs?</td>
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<tr>
<td>Engagement</td>
<td>Is our approach inclusive, involving everyone with an interest in meeting the energy efficiency needs?</td>
<td>The REECS project funded a citizen awareness survey that engaged 450 residents in the nine county region. Its public outreach efforts included the distribution of 13,000 copies of the Green Remodeling Idea Book, two 30-second TV spots, six newsletter articles, all geared to providing updated information to engage the general public. The REECS project informed an episode of Imagine KC, a 30-minute program on local public television on energy conservation, which was viewed by thousands of area residents. Through Imagine KC, residents are encouraged to become engaged in community and individual efforts.</td>
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<td></td>
<td>How can public engagement and education increase the potential impact of and public support for the</td>
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<td>proposed action?</td>
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<tr>
<td>Capacity building</td>
<td>Does the proposed approach build capacity at the local and regional levels to continue to address</td>
<td>The REECS project addressed capacity building as one of its four top priorities. 13 educational programs serving 1050 regional stakeholders were conducted.</td>
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<td></td>
<td>these issues over the long term?</td>
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The accomplishments listed in this final report verify that these success criteria are being met. There continues to be positive momentum in the Kansas City region to advance this strategic framework – providing certainty that further achievements and successful outcomes are forthcoming.
### REECS Members

#### Clay County, Mo.

Implemented four energy efficiency maximizing projects which included:

1. Installed geothermal environmental system at the Jesse James Farm and Museum. Estimated saving include: 2,753 Btu's of anticipated potential energy expended and reducing 243 annual metric tons of CO2.
2. Installed frequency drives on current HVAC units. Estimated savings include: 1.169 Btu's of anticipated potential energy savings, and reduction of 103 annual metric tons, CO2.
3. Replaced 14 aging HVAC units with new, highly energy efficient HVAC environmental units and monitored by an automated building energy management system. Estimated savings include: 4,813 Btu's of anticipated potential energy expended and the reduction of 424 annual metric tons of CO2.
4. Installed new internal storm windows, encompassed rehabilitation, restoration and/or replacement of 60 locally manufactured windows. Estimated savings include: 9,905 Btu's anticipated potential energy expended and the reduction of 874 annual metric tons of CO2.
5. Energy Cost Saving Efficiencies: Based upon 2009 energy costs, Clay County's energy cost savings in dollars for all four projects is estimated to be $36,988 annually.

#### City of Blue Springs, Mo.

- Installed energy efficient lighting at sporting fields.
- Replaced inefficient HVAC systems at public buildings.
- Retrofitted lighting throughout city facilities.

#### City of Independence, Mo.

- Performed energy audits on 38 city-owned facilities and retrofitted four facilities with energy efficient windows, lighting, and/or HVAC system upgrades.
- Provided funding to a nonprofit community agency to install ground source heat pump.
- Created and launched loan loss reserve fund through credit union partner.
- Established commercial and industrial improvement rebates.
- Replaced all traffic control signals with LED lighting.
- Provided high efficiency lighting to school district for flashing signs (including two solar).
- Conducted pilot test on LED streetlights in three different settings: a city-owned parking lot; a commercial roadway and a new residential sub-division.

#### City of Kansas City, Mo.

- Implemented high efficiency lighting upgrades to trail segment connector in south KC.
- Made modifications to development code to address multiple sustainability issues, from transportation efficiency to renewable energy and water resource management.
- Instigated a process to upgrade energy codes standards to 30 percent more energy efficient.
- Installed various energy efficiency upgrades in several city facilities, including solar power applications.
- Implemented Sustainable Energy Education and Communications (SEEC) online training modules for all staff.
- Installed PC power management system, saving energy by turning off PCs at times they are unused.
- Replaced incandescent traffic signals with LEDs.
- Constructed a traffic signal synchronization center to computerize all traffic signals and get real-time information for system maintenance.

#### City of Lee’s Summit, Mo.

- Commissioned the drafting of a comprehensive sustainability action plan that included stakeholder engagement and city council adoption.
- Converted traffic signals to LED.
- Synchronized the traffic signals along a major corridor with retail and commercial development.
- Replaced inefficient HVAC system at a community center.
- Installed energy efficient lighting at sporting fields.
| City of Lenexa, Kan. | Installed new software to track and monitor utility usage in the city. Retrofitting lighting throughout the city hall complex, including upgrading fixtures with electronic dimming ballasts, T8 lamps, specular reflectors and new lenses. In addition, occupancy sensors were placed in most rooms to ensure that lights are turned out any time a room is empty. This also included an HVAC retrofit in the city hall complex. The expected energy savings is approximately a 5.9 percent annually. Reviewed current UDC building codes to sustainability principles. A Guidebook for Development Strategies and a companion book, The UDC Audit were issued. This information will be used to update the city’s Comprehensive Plan and as the foundation of its sustainability initiative. |
| City of Olathe, Kan. | Retrofitted more than 600 LED Signals and more than 400 LED pedestrian heads. Upgraded boilers and water heaters to energy efficient units at an elderly residential housing facility. Upgraded and retrofitted lighting at ten facilities. Installed two electric vehicle charging stations in a downtown parking garage. Retrofitted solar panels on eight storm sirens. |
| City of Shawnee, Kan. | Created an induction and LED streetlight pilot project by installing 77 lights to save energy and reduce costs. The results of the first year demonstrated a 56 percent reduction in energy usage and a 45 percent cost savings. Implemented major lighting upgrades at three city facilities and replaced HVAC systems at three different city facilities. Developed and implemented a material conservation project to educate residents about pay-as-you-throw trash collection and curbside recycling, as well as introduced glass recycling through Ripple Glass bin locations within the city. |
| Jackson County, Mo. | Adopted 2009 IECC. Installed PC power management system, saving energy by turning off PCs at times they are unused; upgraded servers in server room. Installed new energy efficient windows for the Independence courthouse annex. Conducted energy audits on county facilities. Replaced the AC system at the Examiner building and courthouse annex. Installed high efficiency lighting at election board facility and the Grain Valley service center. |
| Johnson County, Kan. | Performed investment-grade energy audits on 19 county-owned buildings comprising over 1.1 million square feet of space. Have committed $786,000 in capital improvement program funding to begin implementing recommendations from report. Partnered with Ripple Glass to purchase seven glass recycling bins in Johnson County. The weight of the glass collected each quarter is routinely 375 to 400 tons. Collected glass is processed into cullet for use in manufacturing fiberglass building insulation. Implemented a special event recycling program that enables county residents and community groups to rent recycling bins for group events. Implemented a home composter program that has reached over 1000 Johnson Co. residents. Purchased four electric vehicle charging stations. Purchased 44 LED outdoor lights that replaced metal halides at three county facilities. Partnered with the cities of Merriam and Gardner, Kansas, to support their participation in the Take Charge Challenge, a statewide competition between cities to reduce energy consumption. Merriam’s campaign resulted in a 5 percent decrease in energy consumption. |
| Unified Government of Wyandotte County/ Kansas City, Kan. | Adopted 2009 IECC. Improved energy systems in 100 low-income, single-family, inner-city homes. Administered an appliance rebate program which affected 900 homes. Retrofitted the Court Services Building with energy efficient lighting systems and new boilers. Administered funding for energy efficiency improvements in more than 300 single-family homes through energy audits. |
Acknowledgements

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