Alliance to Save Energy – 2014 Stars of Energy Efficiency Award Submission
Association of Monterey Bay Area Governments Energy Watch Partnership

Overview

Pacific Gas and Electric Company (PG&E) has a longstanding history of championing energy efficiency and helping customers save energy and money. In 2013 we offered over 130 programs containing hundreds of energy efficient products and services to our 15 million customers across our 70,000 square mile service area. A significant portion of our Portfolio is delivered through strategic partnerships with local governments and communities. In 2008, the California Public Utilities Commission adopted the landmark California Energy Efficiency Long Term Strategic Plan, setting forth a vision for local government partnerships: "By 2020, California's local governments will be leaders in using energy efficiency to reduce energy use and global warming emissions both in their own facilities and throughout their communities."

In 2013, PG&E partnered with 21 local government and communities to deliver 97 million kWh, 14 thousand kW and approximately 2 million Therms. These partnerships serve as a primary delivery channel supporting cities, counties, and other agencies seeking significant energy savings and greenhouse gas emission reductions on the community-scale. No two partnerships are alike yet each one leverage the significant role that local governments play in terms of community-wide energy usage, extending the reach and effectiveness of PG&E's energy efficiency programs. In this nomination we'd like to recognize the accomplishments of the Association of Monterey Bay Area Governments (AMBAG) Energy Watch partnership in helping PG&E achieve its energy savings goals.

AMBAG Energy Watch.

AMBAG's mission is to provide strategic leadership and services to analyze, plan and implement regional policies for the benefit of the Counties and Cities of Monterey, San Benito and Santa Cruz in Northern California, balancing local control with regional collaboration. AMBAG and PG&E have partnered to deliver the AMBAG Energy Watch Program, a regional leader in energy efficiency. The goal of AMBAG Energy Watch is to provide energy efficiency assistance to residential customers as well as the local municipalities, school districts, non-profits, hospitality businesses, and special district agencies in the region to help them save money, save energy, and contribute more of their funds toward their mission. AMBAG staff work with the incorporated cities and counties to develop greenhouse gas emission inventories at the municipal and community-level, then utilizes this information to develop jurisdiction-specific energy action plans. Additionally, AMBAG provides technical support in the form of interns, trainings, oversight and facilitation of plan development, and monitoring and tracking.

Accomplishments

The AMBAG Energy Watch Program has delivered over $7 million dollars in incentives since its inception achieving energy savings of 57.5 million kWh, 3.5 thousand kW and 200,000 therms. Specific accomplishments include the following.

Energy Management Consumption:

- Trained local government staff to use EPA's Portfolio Manager
- Benchmarked energy use for 18 jurisdictions using the Portfolio Manager tool
- Started providing quarterly facility energy use reports to 18 Monterey Bay jurisdictions
- Analyzed benchmarking data and created Energy Benchmarking Reports for AMBAGS 21 jurisdictions
- Over 200 municipal facilities have been benchmarked

Climate and Energy Action Planning:

- Local government Operations Baseline Green House Gas Inventories, Baseline Community Wide Green House Gas Inventory and Community-wide Green House Gas Inventory updates for the Greater Monterey Bay's 21 jurisdictions
- Climate Action Plan – energy modeling and mitigation measure selection and quantification for 7 jurisdictions
- Energy Action Strategies – modeling energy consumption and drafting strategies for 14 jurisdictions

Municipal Complex Energy Projects:

- 106 projects completed since 2006 delivering energy savings of 11 million kWh, 1,600 kW and 193,000 therms.

Customer Testimonials - The best measure of success is hearing feedback from the customers who've had the opportunity to benefit from the AMBAG Energy Watch partnership:

"*The resources and expertise of AMBAG's Energy Watch staff was instrumental to our efforts to complete Santa Cruz County's Climate Action Strategy. From the technical support and tools to complete emissions inventories to the training and advise on energy measure modeling, AMBAG's role has been critical. I look forward to continue working with Energy Watch staff on implementation and monitoring of our energy efficiency and renewable energy strategies in the future.*"
David Carlson, Resource Planner – County of Santa Cruz

"*The City went in to this collaboration because we were definitely looking at reducing our fixed costs we experience in our energy utility bills. The Energy Watch program became rapidly our favorite project. They work with us, identifying projects that we then subsequently implemented in the City as well as the Presidio of Monterey. Working together with AMBAG has been highly successful. We regard the staff members of AMBAG actually as staff members of the City and we enjoyed collaboration with them tremendously".*
Hans Uslar, Deputy City Manager – Monterey

Caesars Entertainment (Caesars), the world's most geographically diversified casino-entertainment company, is committed to environmental sustainability and energy conservation. Responsible environmental stewardship is a clear business imperative: It saves money, reduces risk, offers opportunity to meet guest preferences, and engages the organization in a shared objective to support vibrant communities. Faced with the challenge that buildings consume more than 30% of the total energy used in the United States and are a significant contributor to greenhouse gas (GHG) emissions, Caesars has implemented an integrated sustainability strategy called CodeGreen. The CodeGreen strategy focuses on minimizing core environmental impacts and includes an aggressive plan to conserve energy and reduce carbon emissions.

- Caesars has invested nearly $70 million in energy projects during the past nine years and has completed over 162 major efficiency retrofits across its North American resorts. Operational procedures have been implemented in guestrooms, convention spaces and food and beverage outlets to reduce energy usage.
- Between 2007 and 2012, Caesars achieved an overall 18.7 percent reduction in energy use per air-conditioned square foot of space. In aggregate, improved energy efficiencies across operations yielded absolute annual electric savings of more than 145 million kilowatt hours in 2012 relative to the 2007 base year. This is enough electricity to power more than 13,600 average homes or to meet the electricity needs of more than 30,000 people each year.
- Caesars also exceeded its goal of reducing absolute GHG emissions by 10% between 2007 and 2013. From 2007 to 2012, the company expanded its physical footprint by nearly 18 percent but was still able to reduce absolute GHG emissions by 11.4%, achieving its goal a year early.

To achieve energy reductions, Caesars has structured its program to identify and prioritize high-value opportunities, test and validate technologies, scale deployments across over 59 million square feet of resort space and measure results. Specific examples of the types of projects completed under the CodeGreen program include the installation of over 12,000 digital thermostats with integrated occupancy sensors in guestrooms, the deployment of over 70,000 high-efficiency LED MR16 light bulbs, the installation of occupancy control sensors for lighting and the installation of over 10,000 low-flow showerheads and aerators. Through these efforts, Caesars is on track to achieve its short-term energy reduction target of 20 percent in energy intensity by 2015, which equates to more than $25 million in annualized savings, as well as its long-term energy and carbon reduction goals of 40% per square foot of conditioned space by 2025.

Caesars has made significant progress with respect to realizing energy efficiencies in an industry that has set very high standards with regard to maintaining exceptional guest service. By implementing a comprehensive energy management program, Caesars has been able to use efficiency as a platform for innovation that has yielded significant environmental benefits, improved brand value and delivered measurable bottom line savings. A comprehensive reporting infrastructure has been a critical component of Caesars' integrated energy management program and includes capturing all utility data in an on-line database and converting data into several dashboard reports that allow energy and carbon to be better managed. These reports are available to property leadership through the company's Intranet and allow progress to be tracked against environmental goals. Caesars' CodeGreen effort is also differentiated by stakeholder engagement and organizational commitment for success. With cross-departmental CodeGreen teams at every property, Caesars has garnered nearly 90 certifications and awards for engagement, supply chain, water, energy, and overall programs.

Alliance for Energy Awards Entry for Harford County Public Schools

Located about 30 miles northeast of Baltimore, Harford County Public Schools (HCPS) is the educational home for more than 38,000 students in grades K–12. With sustainability of its operations ranked as one of HCPS's core values, the school system established the Harford Environmental Leadership Program (H.E.L.P.). For the past five years, H.E.L.P. has fostered system-wide environmental stewardship and sustainability through resource conservation, energy management, and sustainability education. One of its biggest successes has been its efforts in improving the energy efficiency within its schools.

Due to budget constraints, many of the facilities had outdated and inefficient equipment. The Operations team methodically analyzed its properties and developed a long-term energy plan to conserve resources and minimize costs. Initially, the goal was to replace T12 lamps with more efficient lamps such as T8s and T5s, but replacing T12s turned out to be just the beginning. After teaming up with BGE's Smart Energy Savers Program®, which offered financial incentives for energy-saving upgrades, HCPS decided to roll out more extensive energy efficiency plans. HCPS maximized incentive dollars offered through the program to not only upgrade old and inefficient lighting, but HVAC systems and kitchen equipment as well.

School by school, HCPS systematically replaced the old T12 lamps and ballasts in classrooms, offices, and hallways with energy-efficient T8 and T5 systems, helping lower lighting-related energy use by up to 50%. On the outside, installation of new motion sensors and LED exterior wall pack lighting helped to reduce energy use and minimize light pollution, which benefited HCPS's environmental education center and neighboring residents. Student stargazers and parents praised the new lighting for providing a better stargazing experience and improved safety and security.

HVAC systems were also in need of energy efficiency improvement. In several schools, variable frequency drives (VFDs) were installed on HVAC equipment to control the speed and frequency at which motors operate; this allowed energy managers to adjust the motor speed based on occupancy, reducing energy use. Additionally, temperature controls were installed in classrooms, offices, and hallways. HCPS also leveraged incentive dollars from the BGE program by installing a chilled water system in one of its facilities. Currently, HCPS is building energy efficiency into the design for a new building at one of its middle schools, specifically incorporating high-performance lighting and occupancy sensors, as well as a high-efficiency HVAC system.

The benefits of HCPS's drive and dedication for energy efficiency have been abundant. They are now able to take money previously used to operate their facilities and divert it to programs that directly benefit students and teachers. And, the learning environment has significantly improved as a result of the upgraded lighting and HVAC systems. Schools are brighter and the temperature is always just right. Studies have shown that a better physical environment is conducive to higher student achievement. Also, by employing new technology to reduce environmental impacts, HCPS has turned its school buildings into teaching tools for students.

Importantly, the school system's carbon footprint and overall sustainability have benefited greatly. HCPS plans to continue to enhance energy efficiency in its facilities to increase energy savings even more in the coming years, thereby, setting an example for other schools, businesses, and nonprofit organizations in Maryland to follow.

HCPS's completed energy efficiency upgrades will save an estimated 4,031,075 kWh/year and $443,000/year in energy costs.

Finally, in an effort to educate the community on energy efficiency, HCPS, with the help of the BGE Smart Energy Savers Program, produced a video and customer spotlight to showcase their various energy-saving upgrades.

Los Angeles Department of Water & Power – Galaxy Star of Energy Efficiency

In 2012, the Los Angeles Department of Water and Power (LADWP), together with its partner utility Southern California Gas Company (SoCalGas), began an innovative collaboration designed to expand efficiency incentives to joint customers in our shared territory in the city of Los Angeles. This collaboration, established through a Master Inter-Utility Agreement, launched an integrated partnership that goes well beyond typical single-measure utility programs to develop and implement a full suite of joint efficiency programs. Benefits of this "tri-resource" partnership (electric-gas-water) accrue not only to our customers, but also leverage costs and reduce duplication in a geographic area served by the largest natural gas investor-owned utility (IOU) and the largest publicly-owned (POU) electric and water utility in the country.

The innovative structure of this partnership, and the strong support from executive management at both utilities, was able to overcome the challenges of bringing together two large bureaucracies with very different regulatory structures to deliver a wide range of joint programs to our customers. The Master umbrella agreement establishes the partnership and sets forth general terms and conditions under which efficiency programs can be developed and implemented, including disclosure guidelines for customer information, reporting of energy, water and natural gas savings, and administrative requirements. Individual program agreements (program orders) tier from the Master agreement and do not require separate LADWP Board approval. This allows the partnership the flexibility to evolve over time, incorporating new programs and amending others to meet the needs and priorities of both utilities and customers. And, this holistic approach to building efficiency supports state and local environmental mandates and initiatives to reduce greenhouse gases produced in energy generation.

In the 12 months following implementation of the partnership, LADWP and SoCalGas launched 10 new joint programs, greatly expanding the number and type of incentive programs available to all customer sectors in Los Angeles. LADWP customers are now eligible for statewide programs, including residential and commercial new construction incentives, which were previously restricted to IOU customers. The partnership provides a single point of contact for all three resources and increases maximum incentive levels. Combined, the utilities budgeted over $140 million for the first two years of the partnership. As programs take time to ramp up to full potential, actual expenditures were less and are not yet available. Similar budget commitments are expected in future years of the partnership. Energy savings installed/enrolled this first year of program implementation total 30,439,500 kWh and 319,439 therms (new construction savings not counted) and include:

- Retrocommissioning Express (commercial): 2,181,000 kWh and 44,059 terms enrolled
- Energy Upgrade California (single family residential): 348,500 kWh and 25,849 therms
- Multi-family direct install water devices (residential): 148,351 therms
- Small Business Direct Install: 27,910,000 kWh installed & 101,180 therms enrolled
- California Advanced Homes (new construction): 3.4 GWh and 82,543 therms enrolled
- Savings By Design (commercial new construction): 34 projects with letter of intent

Other joint programs combine utility resources to support research and development for new codes and standards and special outreach efforts to local large businesses and schools. The 4 million consumers of Los Angeles (approximately 1.4 million meters) provide a vast potential for reaching additional customers through the two utilities' marketing efforts and local contractors. Encouraged by the early success of LADWP and SoCalGas, this streamlined public-private partnership model has already been replicated in three other cities in SoCalGas territory.

MGM Resorts International – Contact: Regina Stepanov 702.692.2313
2014 Star of Energy Efficiency Awards
Category: "Galaxy" Star of Energy Efficiency
Submitted: March 28th, 2014

The "Green Advantage" Way
MGM Resorts is committed to be a global leader in sustainability and stewardship of the environment. With board and executive oversight, our company operates more intelligently and efficiently by extending sustainable business practices to existing resorts and new projects, following a strategic sustainability plan. The primary component of our sustainability platform, known as the Green Advantage, is energy and natural resource conservation. The electricity consumption of MGM Resorts properties each year is equivalent to a small city, or the annual usage of approximately 120,000 average U.S. homes. This concentration of usage enables us to identify, test, deploy, and measure energy savings concepts and technologies on a wide scale. Efforts are made via cooperation between property operations and "Green Teams" along with the company's Corporate Sustainability Division.

A Comprehensive Approach
In developing energy conservation enhancements MGM Resorts selects potential projects that demonstrate the company's leadership and commitment in its ability to be deployed on a large scale, both inside and outside of MGM Resorts, enables the practical taking of operational risk to achieve results beyond expectations, and allows us to act as first movers on appropriate technologies and practices that will distinguish us in our industry.

Following such criteria and strategic implementation, energy saving enhancements made to date includes innovations in facility energy management systems, mechanical upgrades, lighting enhancements, and operational improvements. Savings results include:

- Since 2007, MGM Resorts has saved a cumulative total of over 420M kWh, enough to power 37,000 average U.S. homes for a year.
- On a carbon equivalent basis, MGM Resorts has reduced annual emissions by 100,000 metric tons since 2007.

Project Highlights and Energy Savings
The following are examples of energy conservation enhancements successfully completed or scheduled for implementation at MGM Resorts:

1. **Building management systems –** In 2014, MGM Resorts upgraded the Building Management System (BMS) at Monte Carlo. This project improved control of property heating, ventilation, and air conditioning (HVAC) components. Benefits include more energy efficient building performance, reduced operations and maintenance expense, improved air quality, and more effective integration of the planned expansion of the property – **projected final savings over 4.3M kWh.**
2. **Solar energy installation –** In 2013, Mandalay Bay committed to install the second largest rooftop solar array in the United States, largest convention center solar array in the world, covering over 20 acres of rooftop with more than 20,000 solar panels. Installation will be 6MW, generating 9.5M kWh annually – **providing nearly 20% of total power demand.**
3. **Employee driven energy savings –** In 2013, MGM Resorts launched MY Green Advantage, a social media platform aimed at educating employees on green practices related to work and home. By harnessing the collaborative strength of our 62,000 employees we are able to promote positive environmental impact and behavior changes specific to energy consumption **– over 4M kWh in savings through sustainable actions.**
4. **Lighting retrofits –** In 2013, MGM Grand Detroit completed a light-emitting diode (LED) lamp retrofit of its 61 acre parking garage. Cited as one of the nation's largest LED parking garage jobs ever, the project consists of 3,117 LED lamps – **80% reduction in annual energy use.** Further company-wide surface parking lighting retrofits have resulted in additional savings – **2.7M annual kWh savings.**
5. **Retro – commissioning** – In 2013, MGM Resorts has engaged an external energy analytics team to develop and execute retro-commissioning (RCx) processes focused specifically on enhancing the performance of integrated central plant systems providing heating/cooling to six different properties in Las Vegas, NV – **annual savings for CityCenter alone are projected over 2.3M kWh.**

Leaders in Sustainability
At MGM Resorts we believe that as leaders in sustainability it is our responsibility to design, demonstrate, and share energy conservation practices. We do so via our operations as well as our influence in local, national, and international forums (such as the U.S. D.O.E. Better Building Alliance), including facility and central plant tours and educational forums.

Alliance to Save Energy Star of Energy Efficiency Nomination: City of New York, Department of Citywide Administrative Services, Energy Management

I would like to nominate, the City of New York, Department of Citywide Administrative Services, Energy Management for the Alliance to Save Energy's Galaxy Star of Energy Efficiency Award. The City has successfully accelerated its existing energy efficiency program by developing an internal market for energy efficiency. Through a variety of programs fostering competition among its largest energy consumers as well as education and incentive programs, the City has encouraged creativity, created a shared sense of responsibility along with metrics for energy efficiency value, and expedited its program. This diversified approach, a shift from a prior top-down strategy, has allowed for increased engagement among stakeholders, and an increase in the number, types, and quality of projects. This efficiency "marketplace" will enable the City to achieve its energy reduction goal in a more cost-effective manner and with greater speed.

In Fiscal Year (FY) 2006, the operation of New York City's government resulted in the emission of 3.9 million tCO2e, and the City's government used approximately 6.5% of New York City's overall energy. In July 2008, the City released its Long-Term Plan to Reduce Energy Consumption and Greenhouse Gas Emissions of Municipal Buildings and Operations (Long-Term Plan), a road map for achieving the goal of reducing Greenhouse Gas (GHG) emissions from City government operations 30% from FY 2006 levels by 2017 ("30x17") . A funding stream equivalent to 10% of the City's energy budget (an annual investment of $80 million) was established to fund energy efficiency projects. The plan relied heavily on a strategy of comprehensive building energy efficiency retrofits managed by a single agency on behalf of all other agencies.

New York City has achieved some success in reducing greenhouse gas emissions through energy efficiency: a 19% reduction in annual GHG emissions through the end of FY12. Additionally, through January of 2014 the City has completed $106 million in retrofit projects resulting in energy annual savings of over 400 billion British Thermal Units, including 66.6 million kWh of electricity, 594 thousand therms of natural gas, 192 thousand gallons of oil, and over 71 thousand Mlbs of steam. In FY 14 the City developed and rolled out a number of programs designed to expedite results by creating an efficiency marketplace. The programs include:

- **Accelerated Conservation and Efficiency Program (ACE)** – A competitive inter-agency program providing $150 million for quick energy efficiency and clean heat retrofits, prioritizing projects with quick implementation timelines, and high energy savings. The ACE Program overall is expected to contribute over 5% of the City government's 30% reduction by 2017.
- **Expenses for Conservation and Efficiency Leadership (ExCEL)** – A competitive interagency program providing $1.6 million to fund energy-reducing operations and maintenance measures, tools and equipment to assist facilities personnel, training programs, and outreach and communication efforts. The ExCEL program is expected to reduce 840 metric tons of annual greenhouse gas emissions.
- **Energy Smart Competition** - The City's highest energy consuming agencies will compete to have the largest reductions in annual usage. Agencies that beat the citywide average reduction in energy usage are rewarded with City funding. The goal of the competition is to identify and reward City agencies that have shown excellence in meeting the stringent 30x17 energy usage reduction goals.
- **Energy Management Institute** – A targeted training program for energy management professionals in city agencies at no cost to the agencies.
- **Innovation Demonstration for Energy Adaptability (IDEA) –** A program designed to enable growth of small energy businesses and new technologies by leveraging existing City infrastructure to "testbed" emerging technologies. Goals of the program include increasing market demand for efficiency solutions, facilitating innovation and helping the City direct its future investments in newer technologies.

Results and Conclusions

- Expedited implementation and faster realization of energy savings
- Improved capital allocation and cost effectiveness for energy projects
- Increased innovation and project diversity across facilities
- By creating an internal market-place for energy efficiency, the City was able to decrease its project management burden, and quickly identify and select projects with the best return on investment
- By rewarding energy reductions, the City was able to encourage energy efficient behaviour as well
- Ambitious energy reduction goals require diversified strategy, project types and implementation methods
- There is a difference between a policy plan and an implementation plan; in order to execute an effective long-term strategy, you must re-evaluate and innovate to adapt to current conditions

Alliance to Save Energy - Star of EE Nominations 2014

Public Service Electric and Gas Company's (PSE&G's) highly successful Hospital Efficiency Program is a $129 million multi-year initiative that is funding the installation of energy efficiency measures (ECMs) for a critical market segment; hospitals and healthcare facilities, in the utility's New Jersey service territory. The program is unique in that the utility bears all of the upfront capital costs and the customer share of the project cost is paid though on-bill financing interest free. The elimination of the need for out-of-pocket capital, coupled with the on-bill repayment component for the hospital facility, is vital to the success of PSE&G's program.

Since program inception in 2009, 36 hospitals have participated, 24 of which are now complete. The program currently has a waiting list of another 19 projects, pending additional program funding. PSE&G has invested $106.6 million to date in upfront funding and achieved 48 million kWh savings, 5,900 kW and 2.54 million therms for the 24 completed projects. The savings were realized over three years, 2011-2013, as no projects had yet completed in 2009/2010 due to program start-up and construction lead-times. The energy efficiency improvements will save $9.5 million in utility costs annually (an average of $396,000.00 per hospital) and about $190 million over the 20 year lifespan of the upgrades. The following estimates of additional annual savings apply: estimated annual emissions savings electric (Metric Tons) CO2 33,000; NOX 61; SO2 142. Estimated annual emissions savings gas (Metric Tons) CO2 13,271 and NOX 9.07.

Hospitals are a high energy-usage sector which provides critical care for all members of society, are a significant source of employment in the state of NJ, and face unique challenges requiring more than traditional energy efficiency rebate program strategies. Market barriers include reduced funding, treating the uninsured, replacing aging equipment, rising energy costs, and a general lack of capital for energy improvements. PSE&G's innovative program enables hospitals to make an investment in energy efficiency as well as improve the comfort of hospital facilities for patients and staff. Hospitals receive an investment grade audit (IGA) at no cost, along with a detailed report of recommended cost-effective ECMs which must have a simple payback of 15 years or less to be eligible for program consideration. PSE&G provides an incentive by "buying-down" the cost of the ECMs up to seven years, but to not less than two years, along with as up-front funding for the total cost of the ECMs. The program provides a "whole building" approach to energy efficiency to achieve deep savings; many energy efficiency programs "cap" the amount of a project or limit the types of energy efficiency measures eligible. At project completion, the hospital repays a portion of the total project cost, typically 35 to 40 percent on their PSE&G bill, over a period of 36 months at zero percent interest. The hospitals repayment portion is often equal to or less than, the annual energy dollar savings realized through the ECMs. Once the hospital's portion is re-paid, the facility can apply the future savings to their bottom line or re-invest it in new equipment, upgrades, renovations, etc.

To date PSE&G has invested $106.6 million over 5 years and achieved 48 million kWh savings and 2.54 million therms for the 24 projects completed during the period 2011- 2013. The average annual savings over those three years was 16 million kWh/yr. and 847 million therms/yr. with 2011 being the banner year to date due to program start-up and construction cycles, with 32 kWh saved and 1.71 million therms.

PSE&G has been able to successfully address energy inefficacy in the hospital sector through its proven and replicable program delivery model utilizing upfront financing and a comprehensive approach to energy efficiency, thus facilitating significant cost and energy savings to a critical market segment. The program has generated interest and applause from both utilities and national industry groups, and for these reasons PSE&G believes its Hospital Efficiency Program is worthy of national recognition.

Alliance to Save Energy
"Galaxy" Star of Energy Efficiency Award Submission
Puget Sound Energy

Since 1979, no other Pacific Northwest utility has helped its customers save more energy than Puget Sound Energy (PSE). Since 2003, PSE has saved, in terms of first-year savings reported at customers' meters, over 2.8 billion kWh of electric energy, enough to power over 250,000 average residential homes for one year.

PSE has a comprehensive conservation program – from rebates for homeowners on energy efficient furnaces and appliances, to engineering consultation for commercial and industrial projects, to tailored grants for retrofits and upgrades in energy-intensive buildings. PSE understands that customers' energy needs are growing, and one of the most cost-effective ways to meet their needs is to invest in programs that help people use energy as efficiently as possible.

In 2008, Puget Sound Energy (PSE) became the second utility to implement Opower's Home Energy Reports program, which is designed to help customers conserve energy. The Home Energy Report program includes online tools and outbound communications that provide customers with more information about their energy use and helpful energy saving advice so they can make better choices about their use. By applying behavioral science principles to the messaging and design throughout the program, customers are encouraged to be more energy efficient.

After a successful five years with the Home Energy Report (HER) program, PSE approved a plan to expand the Home Energy Report services to include 124,000 residential customers. Additionally, all 1.25 million PSE customers will soon have access to energy insights and helpful tips through the Opower-enabled web portal. PSE has also expanded the energy reporting services to target 10,000 small and medium business (SMB) in a pilot program that will start in late 2014. These programs not only help PSE meet efficiency targets, but also drive higher levels of engagement and customer satisfaction. Seven out of ten HER recipients are glad that PSE sends them the HER, with more than half (58%) finding the energy saving tips useful.

Taken together, PSE's comprehensive efficiency portfolio is working. In 2013 alone, PSE energy-efficiency programs saved enough electricity to power more than 30,000 homes and natural gas to heat more than 9,000 homes. Over the next decade, there is potential to help customers save another 311 average-megawatts of electricity and 33 million Therms of gas

The Samsung Recycling Direct Program

Samsung Electronics is applying for the Alliance to Save Energy's "Galaxy" *Stars of Energy Efficiency Award* in recognition of the ***Samsung Recycling Direct*** (SRD) electronic waste "e-waste" recycling program and its efforts to advance sustainable and responsible recycling and facilitate the replacement of older, energy inefficient models with new energy-efficient products.

For nearly a decade Samsung has demonstrated an extraordinary sense of societal accountability and corporate dedication not only in its production and promotion of high-efficiency products but also its responsible and effective recycling of e-waste. Samsung recognizes e-waste as a serious environmental, economic, social and security concern. As consumer demand increases and technology constantly evolves, older electronics are replaced and the volume of e-waste generated is increasing. It is estimated that 20 to 50 million metric tons of e-waste are disposed worldwide and more than 10 million tons are produced in the U.S. annually.

Through Samsung's exceptional leadership in electronic waste management in the "Samsung Recycling Direct" (SRD) program—a combination of Samsung's recycling and energy efficiency programs—it has increased the capacity for responsible recycling of e-waste across the U.S.. Further by partnering directly with respected take-back and recycling companies, government, public, private and non-governmental organizations, Samsung has driven positive market opportunities, consumer awareness and current policy legislation, targeting e-waste incentives and producing energy efficiency and energy-saving benefits at home and abroad.

Since its creation in 2008 the SRD program has collected and responsibly recycled more than 350 million pounds of e-waste; in 2014 it projects processing more than 115 million pounds of e-waste nationwide. The e-waste recycling process is much more energy efficient than mining of raw materials. It also leads to less pollution and less dependence on already scarce minerals. For example, according to EPA, recycling one million laptops can save the energy equivalent to the electricity used in about 3600 U.S. homes in a year; and one metric ton of circuit boards can contain 40 to 800 times the amount of gold and 30 to 40 times the amount of copper mined from one metric ton of ore in the U.S.. Recycling when done responsibly also has direct benefits on the economy through job creation and society through improved health and quality of life domestically and overseas.

Beyond responsible processing and removal of obsolete electronics through the SRD program's 900 fixed collection sites and convenient recycling facilities in all 50 states, Samsung also facilitates purchasing energy-efficient products through this recycling program. Specifically it has integrated an online consumer-focused "trade-in" program that links new energy-efficient purchases with e-waste collection. Samsung also educates customers directly through grassroots initiatives working alongside the Boys and Girls Club of America and its partnership with ENERGY STAR. Further, Samsung has participated in numerous local e-waste collection initiatives that include energy-efficient product sweepstakes for participants to help drive awareness around responsible recycling and the ENERGY STAR label. Receiving recognition from Wisconsin, New Hampshire, Boston, Dallas and Salt Lake City, Samsung's SRD program is heralded as a model public-private partnership, worthy of replication.

While it is often challenging for manufacturers to move together given their divergent priorities, Samsung's commitment to voluntarily lead responsible recycling ahead of mandated legislation combined with its multi-stakeholder approach has effectively driven industry forward. The first to create an innovative approach to recycling and set the bar for industry best practice, Samsung is now honored to stand alongside more than 60 corporations, 70 environmental and numerous cities in support of responsible e-waste solutions. The SRD program exemplifies Samsung's commitment to products and services that deliver innovation and enable consumers to do right by the environment and foster broader economic and societal benefits at home and abroad.

"Galaxy" Star of Energy Efficiency
Seattle City & Light

Seattle City Light (SCL) holds the record for the longest continuously operated energy conservation program in the country, which has been running since 1977. SCL serves Seattle, Washington and seven suburban cities. It is the 10th largest public electric utility in the US, and delivers power to nearly one million Seattle-area residents and businesses. It holds the distinction of being greenhouse gas neutral since 2005, the first electric utility in the nation to achieve it. Since that time, its energy conservation programs have helped customers reduce their consumption by 1.5 billion kWh, saving customers over $500 million in utility bills.

SCL offers a wide range of energy efficiency programs for its residential, commercial and industrial customers. Residential programs include rebates for purchasing and installing efficient appliances, subsidizing compact fluorescent light bulbs, and HomeWise weatherization grants for low-income households.

In 2009, SCL partnered with Opower, a cloud-based software company, to provide 20,000 customers with a Home Energy Reports (HER) program to motivate customers to reduce energy usage. In 2011, SCL expanded the Home Energy Reporting services to another 30,000 customers, bringing the entire recipient population to 50,000. The reports use advanced analytics to evaluate customers' energy usage patterns, combined with behavioral science techniques proven to motivate action. Customers enrolled in the program receive monthly paper reports that include tailored information to help them reduce their energy consumption. Customers can also access an online portal with the same information, plus some additional tools to help them reduce their consumption. Each report provides participants with new information including:

- *Information on the customer's home energy use*: Customers are able to see their home's energy use in the context of the energy use of your similar homes that are nearby and similar in size.
- *Progress tracking*: Customers will be able to see how their home's energy use changes over time and across seasons.
- *Tips for Energy Efficiency*: On each report, customers can find ways to save energy, including information on the rebates and other special programs offered.

The program also includes an online portal, which offers customers access to the same information provided on the paper reports as well as the following:

- More tips on how to reduce
- The opportunity to set an energy reduction goal and track their consumption.
- The opportunity to share their energy reduction actions or commitments with other customers (by selecting "I'll do it" or "Already do it" for given tips) and view what other customers are doing.

The HER program has saved customers 45,900 MWh of electricity to date, or over $3 million in customer bill savings. One third of customers indicated that receiving a report has made them more satisfied with Seattle City and Light as an energy provider, and over half of customers (55%) said that receiving the Home Energy Report has motivated them to reduce their home energy use.

Alliance to Save Energy – 2014 Stars of Energy Efficiency Award Submission
Sierra Business Council

Overview

Pacific Gas and Electric Company (PG&E) has a longstanding history of championing energy efficiency and helping customers save energy and money. In 2013 we offered over 130 programs containing hundreds of energy efficient products and services to our 15 million customers across our 70,000 square mile service area. A significant portion of our Portfolio is delivered through strategic partnerships with local governments and communities. In 2008, the California Public Utilities Commission adopted the landmark California Energy Efficiency Long Term Strategic Plan (Strategic Plan). The Strategic Plan set forth a vision for local government partnerships: "By 2020, California's local governments will be leaders in using energy efficiency to reduce energy use and global warming emissions both in their own facilities and throughout their communities."

In 2013, PG&E partnered with 21 local government and communities to deliver 97 million kWh, 14 thousand kW and approximately 2 million Therms. In this nomination we'd like to recognize the accomplishments of the Sierra Business Council partnership as playing a key role in helping us achieve our goals.

Preserving a High Quality of Life to Sierra Residents and Businesses

Unlike most energy efficiency companies, the non-profit Sierra Business Council (SBC) is a mission-driven, member supported non-profit organization. SBC fosters thriving communities throughout the Sierra Nevada region via "on the ground" local projects that promote, develop and amplify the area's social, environmental and economic capital. Its members and partners span the Sierra and beyond and cross the entire political spectrum. In its 20-year history, SBC has published several award-winning publications, including "Planning for Prosperity", "Investing for Prosperity" and others that have defined a path for the Sierra as well as other rural regions throughout the country and the world towards a sustainable future. In addition, through SBC's Climate Planning program, it works closely with Sierra Nevada cities and counties and has conducted 46 greenhouse gas emissions inventories for both municipal operations and community-wide activities.

The Sierra Nevada Energy Watch (SNEW) is community partnership between SBC and PG&E which delivers cost effective energy efficiency projects to businesses, non-profits and local governments in 14 counties of the Sierra foothills region. The mission of SNEW is to reduce energy consumption while promoting green economic development, social fairness and long-term environmental quality. SNEW serves residential, small commercial and municipal customers. These services include comprehensive energy efficiency retrofits for small business and residential customers, strategic energy plans for municipalities and extensive community outreach and workforce development programs.

Accomplishments

Since its inception in January 2010, SNEW has brought close to 8 million dollars in economic stimulus to the 14 county region in the form of energy efficiency project rebates, lower energy bills, and income to contractors installing the projects and most notably, helped save customers over 21 million kWh of electricity. One unique and creative component of SNEW is its Innovative Pilot Program *Green Prosperity Initiative.* This project includes three components: 1) establishing an Energy and Climate Leadership (ECL) Institute for the purpose of developing grassroots leadership; 2) providing an Energy Efficiency Training Program (EETP); and 3) enhancing energy use information and management for small businesses and municipalities. The overarching goal is to demonstrate that climate change, with its expected environmental impacts, also presents regional economic opportunities to respond to the imperative to mitigate those expected impacts by decreasing energy usage. The ECL Institute is designed to develop and support collaborative leadership across key members of Sierra communities for the purpose of driving projects which reduce greenhouse gas emissions in their communities. The EETP component provides a paid training for local contractors to increase the suite of services offered to potential customers to include energy audits, solar plumbing, energy retrofits, and other installations in areas where local capacity is lacking. The third component assesses the success of implementing no-cost energy-monitoring software aimed at small businesses to determine the extent to which it drives energy efficiency savings through the identification of achievable solutions and lower overall energy costs.

Best Practices

- **ECL:** 8 Community Groups will attend a week long Leadership Institute to gain the skills, tools, and resources needed to design and implement a "quick start" program that will result in energy savings.
- **EETP:** 28 participants were accepted into the EETP, and received a 40-hour classroom training and 60-hour field course, training participants on energy assessments, solar plumbing, retrofits and upgrades, and other energy efficiency installations.
- **SMB-focused Energy Monitoring Software:** Evaluate the impacts of 75 small commercial facilities and 10 municipal facilities in receiving "personalized energy-use feedback" on their decisions to invest in conservation behavior and EE retrofits to reduce energy costs and GHG emissions. Capture lessons learned from pilot participants' behavior patterns and experiences and share with the Products team to inform the development of additional SMB tools and enhancements to SMB portion of My Energy online.

The Alliance to Save Energy 2014 Star of Energy Efficiency Awards
U.S. Army Energy Performance Contracting Team

Nomination Category: "Galaxy" Star of Energy Efficiency – Group

Group Name: U.S. Army Energy Performance Contracting Team, consisting of the Office of the Assistant Secretary of the Army for Installations, Energy and Environment; Office of the Assistant Chief of Staff for Installation Management; U.S. Army Installation Management Command; U.S. Army Materiel Command; and U.S. Army Corps of Engineers.

The U.S. Army Energy Performance Contracting Team collaborated with multiple offices and Commands to exceed the President's Performance Contracting Challenge (PPCC) to implement energy savings projects through performance-based contracting. The PPCC directed the Federal Government to award $2B in new Energy Savings Performance Contracts (ESPCs) and Utility Energy Services Contracts (UESCs) over a 25 month implementation period, ending December 31, 2013. These contracts enable the Army to partner with Energy Service Companies and utilities, who finance efficiency projects and are repaid from the value of energy savings realized from their investment over the life of the contract.

Through the team's collective efforts, the Army executed and awarded $498M in contracts, which was 29.7% above its $384M goal. Army demonstrated leadership within the Federal Government by awarding approximately 40% of all Federal Energy Savings Performance Contracts and approximately 25% of the $2B Federal goal. It was the only Federal entity to significantly exceed its goal and has a process and team in place to continue successfully developing energy efficiency projects through performance-based contracting.

During the PPCC timeframe, the U.S. Army awarded 17 ESPC and 11 UESC projects in FY 2012, 13 ESPC and 11 UESC projects in FY 2013, and 5 ESPC projects in the beginning of FY 14. These projects are projected to save 1.396 Trillion British Thermal Units (BTU) per year. According to the U.S. Energy Information Administration, an average American home consumes 89.6 Million BTU/yr, thus efforts by the U.S. Army Energy Performance Contracting Team is projected to save as much energy as consumed by 15,581 homes in the United States each year.

The use of these contracts has helped overcome budgeting uncertainties during this fiscally constrained environment, as they have provided an alternative means of financing energy efficiency projects when appropriated funds were not available. Examples of projects include energy efficient lighting upgrades, building envelope improvements, central energy plant upgrades, and modifications to energy intensive process equipment.

The collective efforts of the U.S. Army Energy Performance Contracting Team support the Alliance to Save Energy mission by achieving a healthier economy through public-private partnerships, a cleaner environment through more efficient fuel consumption, and greater energy security through enhancing Army mission effectiveness by reducing energy demands and freeing up resources that can be used to achieve the mission at hand.

Alliance to Save Energy Stars of Energy Efficiency Awards
"Galaxy" Star of Energy Efficiency
UC/CSU/IOU Energy Efficiency Partnership Program: A Decade of Savings

***OVERVIEW*:** Like most university systems, the University of California (UC) and California State University (CSU) Systems face the challenge of educating growing numbers of students while grappling with shrinking budgets and rising energy costs. Concurrently, the State of California's investor owned utilities (IOUs) are aggressively harvesting cost-effective, reliable energy savings which meet their customers' needs -- recognizing that a dollar saved on energy costs is a dollar available to educate another student. In 2003, a plan was put in motion to maximize the synergies between these entities, resulting in the successful UC/CSU/IOU Energy Efficiency Partnership Program. Ten years later, the Partnership is still thriving and continues to offer campuses a means to pursue dynamic, cost-effective energy efficiency projects while significantly contributing to IOU energy savings goals.

The Partnership is an ambitious statewide endeavor, unprecedented in both scope and scale. It represents the first and largest program in California in which four IOUs – Pacific Gas & Electric Company, San Diego Gas & Electric, Southern California Edison, and Southern California Gas Company – work collaboratively with specific statewide partners, namely the UC and CSU systems, representing 14 and 23 campuses respectively. The program has become the nation's most comprehensive energy efficiency program serving the higher education sector, designed and implemented to achieve sustained energy savings and to influence energy policy in the education sector.

The program uses five key strategies: (1) energy efficiency retrofits; (2) monitoring-based commissioning (MBCx); (3)Savings by Design for new construction; (4) emerging technology demonstrations; and (5) training and education. This multifaceted approach combines innovative technology, processes, and program management to deliver a comprehensive program with far-ranging impacts for California and beyond. The MBCx strategy is particularly innovative, it introduces the use of new and permanent metering and trending capabilities combined with operator training, to identify immediate energy use reduction opportunities and ensure long-term savings through the ongoing optimization of building operations. As a critical component of the program, hundreds of engineers, consultants, and campus facility staff have received hands-on training in continuous commissioning using advanced metering and data visualization tools. This program has essentially transformed the California commissioning marketplace as many of these professionals have carried their knowledge into other market sectors.

***RESULTS*:** The Partnership is currently celebrating its 10th anniversary providing campuses an incentivized platform and technical assistance to pursue energy projects that have dramatically reduced energy costs for existing buildings while striving to go above and beyond code requirements for new construction. As testament to its ongoing success the CPUC has continued to authorize this high impact program since 2004 and is currently supporting its 5th program cycle. Most recently, the Partnership has made exceptional progress towards the 2013-2014 program cycle goals, totaling nearly 4,400 kW (~78% of goal), over 33.3 million kWh (~93% of goal), nearly 1.6 million therms (~62% of goal), and providing over $9.6 million in incentives (~67% of goal). At this rate the Partnership is once again set to exceed program goals and will be prepared to enter the 2015 program year with a strong pipeline of projects. The overall program, including utility administrative costs, was held to a cost effectiveness threshold test as defined by the CPUC, which is based on acceptable total resource cost ratios applicable to programs funded with public-good dollars.

As previous successful program cycles allowed campuses to complete more straight-forward energy efficiency projects, the IOU's maintenance of the generous $.24/kWh and $1/therm incentive rate has allowed campuses to fund more complex, long-term efforts that result in deeper energy savings. Since the first cycle of 2004-2005, the partners have continued to exceed their electric and gas savings goals, delivering cumulative annual savings of nearly 45 MW, 373 million kWh/yr, 18.7million therms/yr, and $95 million in paid incentives for over 1,000 projects. These results are verified on a campus level, rechecked through a technical due-diligence process by each utility, and ultimately confirmed by an independent measurement and verification process.

The Partnership is designed to achieve replicable results and serve as a catalyst for future energy efficiency gains by:

- Training university staff and their contractors, focusing on improving the energy efficiency knowledge base of both the operating staff of existing buildings and project managers involved with new building construction.
- Documenting annual "Best Practices" in various categories, including building operations, energy efficiency system retrofits, and new construction. These are captured in a case study format and distributed system-wide.
- Serving as a model for other higher education partnership endeavors, including California's Community College System, California Department of Corrections and Rehabilitation, and the State of California.

The UC/CSU/IOU Partnership is proud of its accomplishments earned over a decade of energy efficiency efforts which have dramatically reduced campus energy costs while contributing a significant source of energy savings towards IOU portfolios.

West Linn Paper Company is an independent paper manufacturer. Ours is the oldest active paper mill in the nation, and the only coated free-sheet manufacturer in the western United States. Our products are sold throughout North America and are used for high-end advertising materials, direct mail, magazines, catalogs, and commercial printing.

Our production facility is located at the foot of the Willamette Falls, just a few miles outside of Portland, Oregon. Our unique location and the natural beauty that surrounds us serve as a daily reminder that our business relies on sound environmental practices and careful management of our natural resources. Energy efficiency is key to our continued success in a challenging marketplace.

West Linn Paper Company has reduced the amount of electricity required to produce a ton of paper by 74 kWh and the amount of natural gas by 1.28 MMbtu since 2005. This represents a 14% reduction in electricity intensity and an 18% reduction in natural gas intensity, and the combined impact saves us an estimated $2.6 million per year at today's energy prices.

Our quest for energy efficiency has taken a step-wise approach. We've identified a number of projects – some large and some small – with conservation goals in mind and have gradually implemented them over the years, investing about $1.6 million a year. One of the more unique projects was to install gravity-powered aerators in our wastewater treatment lagoon, replacing a number of electric units that had been used previously. The project, which was accomplished entirely in-house, cost less than $50,000 and saves 300 kWh of electricity (and $130,000) a year.

Some of the other energy conservation projects we've implemented include:

- Lighting retrofits
- Steam piping insulation
- Replaced aging motors with higher-efficiency models
- New, high efficiency burners on our natural gas boilers, and new control systems
- Replaced vacuum pumps with high efficiency equipment designed for current applications
- Improved compressed air system, and greater attention to leak repair
- Installation of variable-frequency drives
- Managed use of electrical transformers to reduce core losses

We recognized early on that our use of water and our energy demand were closely linked, so many of our conservation projects have resulted in water consumption reductions as well as energy. We now require about 17% less water to produce a ton of paper as we did in 2005. Some of the projects targeting water conservation, but with significant associated energy savings include:

- Whitewater recycling
- Automated filter plant backwash system
- Filter plant backwash reuse

The energy conservation efforts have reduced our demand for fuel, lowered our production costs and reduce our impact on the environment. Our goal is to reduce our Greenhouse Gas intensity by 25% by 2015, and with the success of the projects implemented, we're nearly there. Our 2012 emissions were 24% of our 2005 baseline.