CITY OF HAYWARD
HEART OF THE BAY

DATE: October 2, 2013

TO: Council Sustainability Committee

FROM: Director of Public Works – Utilities and Environmental Services

SUBJECT: Summary of Community-Wide and Municipal Energy Use and Efforts to Improve Efficiency

RECOMMENDATION

That Committee receives and comments on this report.

SUMMARY

While other reports have provided updates on overall implementation of the Climate Action Plan, this report focuses on City-wide electricity and natural gas use and efficiency. This report has four main sections:

- Energy Efficiency Programs for the Community
- Energy Use by the Community
- Energy Efficiency at City Facilities
- Energy Use at City Facilities

BACKGROUND

The City's Climate Action Plan (CAP) was adopted by Council in July 2009; however, energy efficiency and generation of renewable energy have been a priority for much longer. Following is a list of key actions the City has taken to reduce energy use.

- On April 8, 2005, the City of Hayward became a participant in the U.S. Mayors Climate Protection Agreement and committed to reducing greenhouse gas (GHG) emissions seven percent below 1990 levels by 2012.
- In June 2006, the City of Hayward joined the Alameda County Climate Protection Project and ICLEI's Cities for Climate Protection Campaign.
- In 2006, the first GHG emission inventory was completed for both community-wide activities and municipal operations.
- In 2007, the Mayor formed the City Council Sustainability Committee.
- In 2008, the City adopted a Green Building Ordinance requiring LEED Silver certification for new municipal facilities.
- In 2008, the City adopted a Green Building Ordinance related to private development.
- In 2009, the City adopted a Climate Action Plan with GHG reduction targets for 2020 and 2050 and actions necessary to achieve those targets.

- In 2011, "Green" was moved from a supporting Council priority to a primary Council priority and the Public Works Department was reorganized into two Departments. Public Works – Utilities and Environmental Services was created with Environmental Services Division staff focused on CAP implementation, water conservation and energy efficiency, solid waste and recycling, and water pollution control programs.
- In 2013, jurisdictions throughout Alameda County worked with staff at StopWaste to establish the Alameda County Energy Council so that cities and the County may work together to secure grant funding and partner on CAP implementation programs.

DISCUSSION

Energy Efficiency Programs for the Community – Staff has partnered with several entities including PG&E, the Department of Energy, StopWaste, and the East Bay Energy Watch to offer energy efficiency programs to homeowners and businesses in Hayward.

Energy Efficiency and Conservation Block Grant Programs – In 2009, Hayward was awarded a $1,361,900 formula-based Energy Efficiency and Conservation Block Grant (EECBG) from the U.S. Department of Energy through the American Recovery and Reinvestment Act (ARRA). As required by terms of the program, grant funds were spent during calendar years 2010 through 2012. The City hired QuEST to serve as its contract Sustainability Coordinator to help administer the grant as well as assist with general CAP implementation.

Implementation of the CAP included a number of activities including exploration and initial development of a Residential Energy Conservation Ordinance (RECO) and Commercial Energy Conservation Ordinance (CECO), and implementation of a number of City sponsored energy efficiency programs. Energy efficiency program activities such as Large Energy Users, Non-profit and Government Agencies, Residential, and LED streetlights are covered in detail in a separate report by PG&E (see Attachment I). While Council ultimately decided to not adopt a RECO, addressing energy use by the City's existing housing stock will be critical to meeting overall GHG reduction targets. Staff is still committed to addressing this issue and has included new policy language in the draft General Plan (see related report on the Committee's October 2 agenda).

A total of $618,425 in energy efficiency incentives were provided to business and homeowners through the EECBG. The programs assisted Large Energy Users, Non-profit and Government Agencies, and single-family homes. An additional $136,085 in incentives was used by the City for installation of LED streetlights. When combined with matching incentives from PG&E, a total of $1,182,867 in incentives were provided to business and home owners as well as the City. These incentives helped drive more than $1,918,500 in energy efficiency investments. As a result of these investments, participants are saving $639,146 in energy expenses while reducing 1,176 tonnes of CO2 per year. Table 1 summarizes the spending, project costs, and energy savings for each of the programs funded by the EECBG.

Table 1. Summary of EECBG-Funded Programs

Programs	Savings		Cost/Incentives					
	Electricity Savings (kWh)	Natural Gas Savings (therms)	Cost Savings	Project Costs	Hayward Incentives	PG&E Incentives	Total Incentives	Task Spending
Large Energy Users	2,653,226	91,838	$489,822	$1,084,931	$238,305	$357,196	$595,502	$238,305
Non-Profits & Governmental Agencies	892,590	353	$142,814	$378,039	$251,885	$71,160	$323,045	$ 251,885
Residential	3,709	5,525	$4,654	$319,526	$128,236		$128,236	$128,236
LED Streetlights	136,085	-	$1,856	$136,085	$136,085		$136,085	$136,085
Energy Eff. & Conservation Strategy Development								$21,189
Green Cities California Membership								$6,750
Sustainability Coordinator								$513,502
California Youth Energy Services (CYES) Program								$15,000
Green Packages								$49,948
Residential and Commercial Energy Audits								$1,000
Totals	3,685,610	97,716	$639,146	$1,918,582	$754,511	$428,356	$1,182,867	$1,361,900

Energy Upgrade California – Hayward staff worked with other cities in Alameda County and StopWaste to support Energy Upgrade California[1]. Each city in Alameda County contributed a portion of their EECBG funds (Hayward's contribution is listed in the above table as "Green Packages") for StopWaste to provide contractor training, marketing, and technical assistance. In addition, Hayward spent $128,000 to provide incentives matching those provided through PG&E. There were 25 residents who received Hayward's matching incentives and the completed projects resulted in total energy savings for all program participants of 3,709 kWh and 5,525 therms. For comparison, the average California home uses approximately 6,000 kWh and 400 therms annually.

East Bay Energy Watch – The East Bay Energy Watch (EBEW) is a collaboration between PG&E, local governments, and non-profit and for-profit energy service providers in the East Bay dedicated to providing innovative energy efficiency solutions for residents and businesses in communities throughout Alameda and Contra Costa Counties. EBEW is administered by QuEST, the same firm hired as the City's Sustainability Coordinator for 2009 through 2012. A summary of EBEW activities for the 2010 – 2012 program cycle is included as Attachment II. The programs, many of which were leveraged with the City's EECBG funds, achieved reductions in electricity use of 9,206,775 kWh and natural gas use of 7,514 therms. Various programs served 190 non-residential customers including 29 nonprofits and 32 schools. On the residential side, the California Youth Services (CYES) program served a total of 411 households in 2010 and 2011.

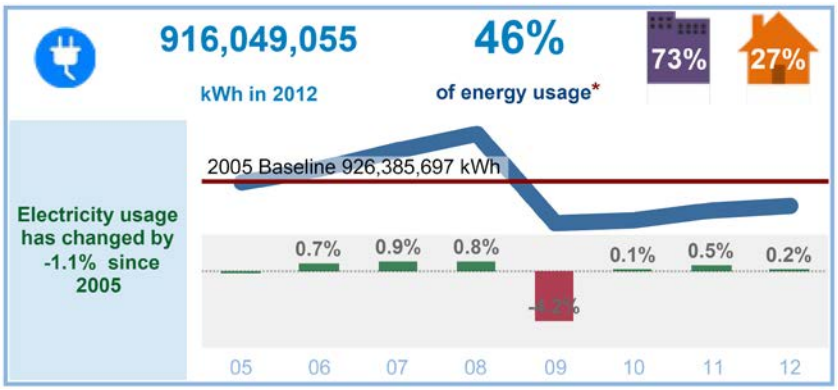
[1] https://energyupgradeca.org/overview

Other Current and Future Energy Efficiency Programs – The following programs are currently available to Hayward residents, property owners and businesses.

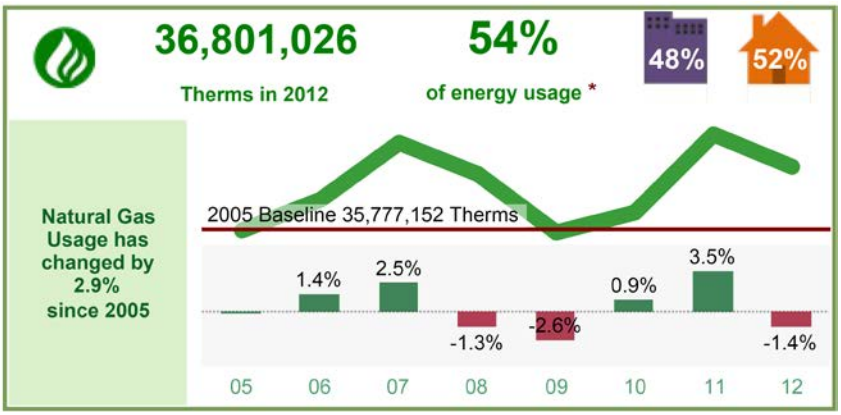
- Energy Upgrade California – The incentives currently available are the "Home Upgrade" and the "Advanced Home Upgrade" programs[2]. The Home Upgrade incentives involve installing three or more measures from a flexible menu of options. Different measures have different point values. A maximum of 250 points and $2,500 in rebates are possible. The Advanced Home Upgrade requires a comprehensive energy assessment of the home and rebates and incentives depend on the energy savings of the project. Incentives can be up to $4,500 for a 45% increase in efficiency.
- Home Energy Analyzer – This free online tool[3] just became available to Alameda County residents in September 2013. People can log in using their PG&E login information and the website analyzes their PG&E data to provide detailed energy usage information and tips for reducing electricity and natural gas use.
- Energy Upgrade California Multifamily Program – This program, launched in July 2013, offers cash rebates and free energy consulting for multifamily properties that undertake energy upgrades. The program assists in planning energy saving improvements designed to save about 10% of a building's energy usage and provides $750 per unit in rebates to help pay for upgrades[4].
- PAYS – Staff is currently developing a Pay As You Save (PAYS) program that will initially be offered to owners of multi-family properties. It will allow energy and water efficiency improvements to be installed with no upfront cost and with project costs paid for over time on water bills. An update on the PAYS program is being presented to the Committee on October 2.
- East Bay Energy Watch – The East Bay Energy Watch serves commercial customers within Alameda and Contra Costa Counties. PG&E customers are eligible for a no-cost comprehensive energy assessment of their building. Energy Watch professionals perform assessments and make recommendations for cost effective retrofits and improvements that are designed to save money on utility bills[5].

[2] More details are at http://www.pge.com/en/myhome/saveenergymoney/energysavingprograms/euca/index.page
[3] This site is available at http://www.homeenergyanalyzer.org/
[4] More details are at https://multifamily.energyupgradeca.org/local#bayarea
[5] More information is available at http://www.eastbayenergywatch.com/commercial

Energy Use by the Community – Overall energy use (electricity and natural gas) has increased by approximately 1 percent between 2005 and 2012. As shown below, electricity usage decreased by 1.1 percent between 2005 and 2012.



Natural gas usage increased by 2.9 percent between 2005 and 2012.



Annual totals are provided in Attachment III and show that 926,390,000 kilowatt hours (kWh) of electricity were consumed in 2005 and 916,050,000 kWh were consumed in 2012. Community-wide, 35,780,000 therms of gas were consumed in 2005 and 36,800,000 were consumed in 2012.

Year to year changes may be due to conservation and efficiency programs, but changes in weather and economic activity are also important considerations. As shown in Attachment IV, emissions related to residential natural gas use increased by 3.2 percent from 2010 to 2011 and then decreased by 3.8% in 2012. The decrease between 2011 and 2012 could be partially due to the fact that 2012 had fewer heating degree days[6] compared to 2011. Non-residential natural gas use increased by 3.8 percent from 2010 to 2011 and increased again by 1.4% in 2012.

[6] "Heating degree days", or "HDD", are a measure of how much (in degrees), and for how long (in days), outside air temperature was lower than a specific "base temperature" (or "balance point"). They are used for calculations relating to the energy consumption required to heat buildings. In 2011, Hayward experienced 3,170 HDD and in 2012, 3,146 HDD.

Residential natural gas use was approximately 19,136,534 therms in 2012. As noted above, during 2010 through 2012, 25 homes[7] participated in Hayward's incentive program and completed retrofits through the Energy Upgrade California program. These homes were responsible for 5,525 therms of natural gas savings, which is equal to a 0.03 percent of 2012 usage. Non-residential natural gas use was 17,664,492 in 2012. Efficiency programs, such as the Large Energy Users program, saved approximately 94,900 therms, or 0.54 percent in 2010 through 2012.

As shown in the Attachment IV, emissions associated with electricity increased from 2011 to 2012 by 14.6 percent and 15.9 percent respectively in the residential and non-residential sectors. However, overall electricity use increased by only 0.2 percent between 2011 and 2012. The increase is primarily due to the change in the emissions factor between 2011 and 2012. While emissions per unit of natural gas use remains constant from year to year, the GHG emission factor for electricity varies from year to year.

A GHG emission factor is a measure of the pounds of carbon dioxide (CO2) emitted per kilowatt-hour of electricity or per therm of natural gas. The electricity that PG&E delivers to customers comes from a mix of generation sources, such as natural gas, coal, hydropower, wind, solar, and nuclear power. PG&E's emission factor for delivered electricity incorporates the annual energy and associated emissions from each generation source for the given year. Variance in PG&E's mix of electricity sources largely account for changes in PG&E's GHG emission factor from year to year.

Attachment V has a detailed breakdown of PG&E's energy mix for 2011 and also has the emission factor for 2003 through 2011. The exact emissions factor for 2012 has not yet been published, but it is estimated to be 453, which is a 15 percent increase over 2011. This Energy Summary also includes more information about Hayward's use of electricity and natural gas by the residential and non-residential sectors as well as numbers of photovoltaic installations per sector by year.

Energy Efficiency at City Facilities – This section summarizes recent electricity and natural gas efficiency improvements at City facilities. The City also has several renewable energy facilities, a summary of which was provided to the Committee on July 10, 2013[8].

Peak Day Pricing – Hayward's water system participates in PG&E's peak day pricing program, which is available for customers who can modify their electricity needs to avoid daily and seasonal peak periods. The program runs from May through October each year. In 2012, the City saved $8,613 by participating in the peak day pricing program. Many of Hayward's water pump stations electricity meters were enrolled mid-way through the 2012 season. Savings in the 2013 season are expected to be significantly higher.

[7] While 25 homes received incentives from the City of Hayward for completed retrofits, approximately 40 homes completed retrofits in total. Detailed energy savings for the additional 15 homes is not available.

[8] See http://www.hayward-ca.gov/CITY-GOVERNMENT/COUNCIL-STANDING-COMMITTEES/COUNCIL-SUSTAINABILITY-COMMITTEE/2013/CSC-CCSC071013full.pdf

HVAC at City Hall – With assistance from the Municipal Implementation Team (MIT) program, a component of the East Bay Energy Watch, an efficiency project was completed in City Hall in 2013. The project included adjusting the heating, ventilation, and air conditioning (HVAC) operating schedule, installation of a computer control energy management system (EMS) upgrade, replacement of associated motor actuators for hot water valves and damper motors in the variable air boxes, which cuts down on the airflow in the building. This work is estimated to result in annual savings of $77,813.

HVAC at Police Department – With assistance from the MIT program, a project with the same scope as above was completed in the Police Department in September 2013. The project also included repairing the economizer and resetting the chilled water setpoints and is estimated to save approximately $35,000 per year.

LED Streetlights – In August 2011, City contractors completed installation of approximately 70 LED streetlights on Tennyson Road between Mission Boulevard and Tampa Avenue using EECBG funds. Since July 2013, City contractors have been replacing over 7,700 high pressure sodium streetlights (HPS) with light emitting diode (LED) throughout the City. The project is funded through a California Energy Commission (CEC) loan. Installation of the new fixtures began in early July and is expected to be completed by October 2013. The project has the potential to reduce energy costs by 60 percent and also realize a major savings in maintenance costs. In addition, the public will notice an improvement in the color and quality of light throughout the City. The CEC loan will be repaid through the energy savings, resulting in no upfront cost to the City.

Lighting Upgrades at Multiple Facilities – As authorized by the City Council on March 15, 2011, a California Energy Commission loan facilitated lighting system upgrades at the Police Department, City Hall, Fleet Maintenance building, City Hall parking garage and the Cinema Place parking garage. The lighting upgrades in the offices included occupancy sensors, energy efficient fluorescent fixtures, a computer controlled light timer, and LED exit lights. The project was supported by $138,111 in rebates from PG&E and will result in annual energy savings worth $111,981. The CEC loan also supported the installation of solar photovoltaic panels at the Streets Building and Utilities Building.

Lighting Upgrades at Parking Structures – Lighting upgrades in the parking garages were supported by the California Energy Commission's Energy Technology Assistance Program (ETAP), which utilized funding from Federal American Recovery and Reinvestment Act. The new system in the parking garages utilizes wireless motion and photocell sensors with a wireless mesh network to turn on the lights when the garage is occupied, and turn them off when it is not. The high-pressure sodium light poles on the top of the garages were also replaced with low-draw LED lights.

Energy Efficiency in Water and Wastewater Systems – With support from PG&E, the Cal Poly Irrigation Training and Research Center (ITRC) recently completed an audit of the City's water distribution, wastewater collection, and wastewater treatment systems. Staff intends to use the results of the audit to complete efficiency improvements in these systems in the near future.

Energy Efficiency at the Water Pollution Control Facility – Staff at the Water Pollution Control Facility (WPCF) has a long history of making improvements to operations and equipment to save energy. Since 2007, staff has operated the trickling filters on a three-hour rotating schedule. This practice avoids the need to use two trickling filters in parallel and a 250-horsepower recirculation pump, which reduces electricity demand during peak periods. In August this year, a new air compressor was installed with a project cost of approximately $10,500 and a PG&E incentive of approximately $4,000. The new compressor will result in annual cost savings of approximately $5,600. Over the last several years, variable frequency drives have been installed on motors that drive the larger pumps. This equipment has resulted in significant savings as it replaced motors that operated either on or off.

In addition, several operational strategies have been put in place for larger systems aimed at offsetting peak energy costs:

- Summer and winter mode pumping schemes;
- Flow diversion during peak hours. Flows are brought back to process during low flow peak hours; and
- Methane gas storage to be used when peak hours are in force.

WPCF staff are currently investigating the possibility of reducing the run time for blowers, each of which require a 200-horsepower motor. Another process under investigation is running the digesters in various modes to attain the best digester gas production with the goal of achieving continuous production for the cogeneration system.

Finally, staff recently received an Energy Audit Report for the WPCF documenting several energy efficiency opportunities, including more efficient lighting and improved control of trickling filter pumps. The report also recommends further optimization of the plant's load management strategy. Some energy cost reductions can be achieved at relatively low investment levels while others will require substantial capital investment. Implementation of the recommended improvements will be addressed and prioritized in the WPCF Master Plan currently being prepared.

Other Efficiency Improvements – Finally, the following improvements have been made to City facilities in the last few years:

- All urinals City-wide, were replaced with "pint" urinals, using 16 ounces (1/8 of a gallon) of water per flush.
- Electric Hand Dryers were installed in all City Hall restrooms to replace paper towels.
- Illuminated "Exit" signs were replaced with LED signs.
- Stickers were added to light switches in City Hall to encourage conservation.
- Lighting in the shop at the Hesperian water pumping station was recently upgraded from sodium lights to LED fixtures, which will result in a 40% increase in efficiency.
- Cool roofs were installed on Fire Stations 2 and 4, and on the Streets building.

Upcoming Efficiency Improvements – Staff is currently working on developing the following efficiency projects:

- A cool roof is being installed on the Fleet building in September 2013.

- Staff is currently studying the feasibility of adding skylights to the Barnes Court building, which can reduce the need for artificial lights.
- Staff is currently studying the feasibility of adding photo sensors in the Weekes Branch Library so that lights near windows will automatically dim or turn off when there is adequate sunlight.

Energy Use at City Facilities – This section includes information about energy use at City facilities for 2003 through 2012.

Benchmarking of City Facilities – In 2011, staff began tracking energy use at City facilities using the Environmental Protection Agency's ENERGY STAR Portfolio Manager online tool. On April 4, 2012, staff presented the Committee with a report[9] including energy data for 2005 through 2011. The Portfolio Manager program can measure and track energy and water consumption, as well as greenhouse gas emissions. Benchmarking building energy provides metrics that help inform and prioritize energy efficiency opportunities. Using the online tool, energy used in each municipal building is benchmarked, meaning it is compared to that of other similar buildings engaged in similar activities nationwide. The relative rank of a building's energy consumption can be used to classify a building as more efficient, less efficient, or as efficient as an average building.

Portfolio Manager requires a short list of inputs that include gross floor area, weekly operating hours, and number of workers that occupy a building during a shift, in addition to monthly energy data. The statistical models used in Portfolio Manager also convert all fuel types to thermal units (kBtu, or thousand British thermal units)[10] as source energy[11], which accounts for the generation of the energy used; variability due to weather is also normalized in these models[12], enabling comparisons of energy performance for buildings in Hayward and New York City, for example.

As noted in Attachment VI, energy data from 2012 reveals that most Hayward buildings were more efficient than the national median source energy intensity (*energy use intensity* or *EUI* is calculated using kBtu per foot^2 of floor area). This was derived by interpreting the percent difference of each building's energy intensity from the national median energy intensity (for that particular type of building): a negative percent difference indicates lower energy use and better energy performance than the national median, and a positive percent difference indicates higher energy use and poorer energy performance than the national median.

According to Portfolio Manager, the most efficient buildings are the City Hall Parking structure (99 percent below the national median), Cinema Place Parking structure (92 percent below the national median), Fire Station No. 8 (48 percent below), and Fire Station No. 6 (40 percent below). It is likely that the parking structures scored well because the national median may be based on underground garages with ventilation systems.

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[9] See Item #3 at http://www.hayward-ca.gov/CITY-GOVERNMENT/COUNCIL-STANDING-COMMITTEES/COUNCIL-SUSTAINABILITY-COMMITTEE/2012/CSC-CCSC040412.pdf

[10] http://www.energystar.gov/ia/business/tools_resources/target_finder/help/Energy_Units_Conversion_Table.htm

[11] http://www.energystar.gov/ia/business/evaluate_performance/site_source.pdf?5077-2141

[12] http://www.energystar.gov/ia/business/evaluate_performance/Methodology_Weather_20110224.pdf

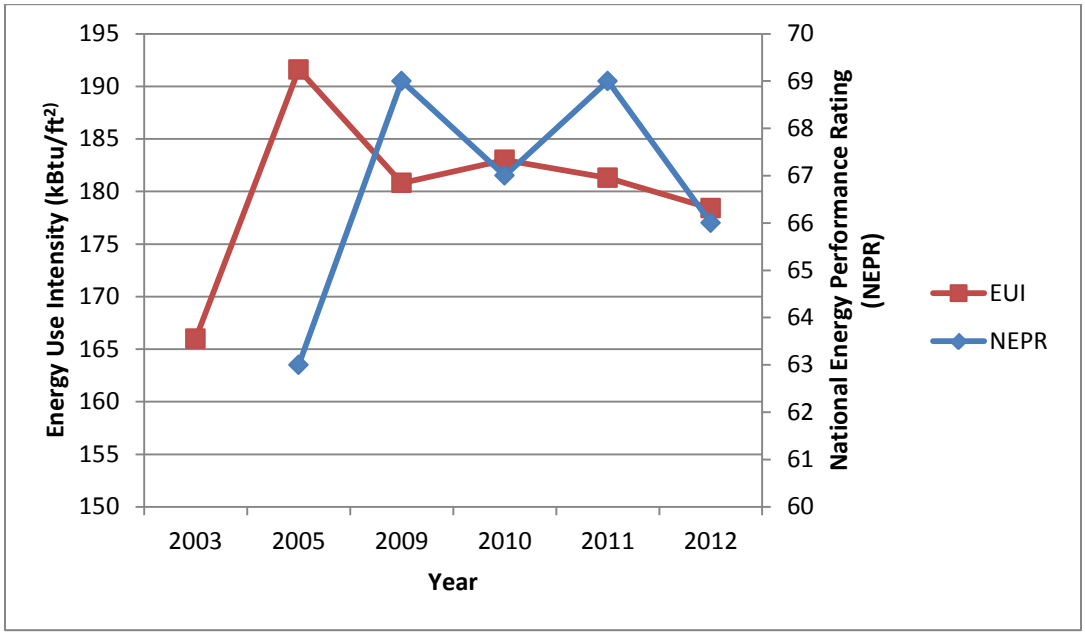
According to Portfolio Manager, the least efficient buildings are the Police Department (97 percent above the national median), Fire Station 7 (48 percent above), and Fire Station 3 (20 percent above). For the Police Department, the program uses a national median EUI of 154.4 kBtu/ft^2; however, this is the same as that for used for the fire stations, so is not a very good comparison. Due to operations that occur in the Police Department, including the dispatch center, staff will investigate whether or not different standards should be used for the Police Department and the fire stations.

Clearly, there are some flaws in making national comparisons, but the program may be more useful in making year to year comparisons for each facility. Data from Portfolio Manager reveals that the Cinema Place parking structure's EUI decreased by almost half from 2011 to 2012. Fire Station No. 6 had a significant decrease from 2009 to 2010 and Stations 7 and 8 had significant increases from 2009 to 2010. Energy use at the Main Library has increased significantly over the years. This may be due to the 36 additional computers that were installed in 2006/2007. The computers serve as a public Internet access center, so they are all powered on 48 hours per week. Both the Fleet Management/Streets and the Utilities Buildings had significant decreases from 2011 to 2012, most likely because solar panels were installed on these buildings in 2012. City Hall had a significant increase in energy use from 2003 to 2005 and then steadily decreased since 2005.

Energy Star Rating for City Hall – While all building types can be ranked using EUI, certain types of buildings are eligible to also receive a National Energy Performance Rating on a 1 to 100 scale. Office buildings are one of these types and City Hall is eligible for this rating since it is categorized as an office building in Portfolio Manager. City Hall received a National Energy Performance Rating of 67 in 2010 and a rating of 69 in 2011, but then decreased to 66 in 2012 (see following Figure 1). A rating of 66 indicates that City Hall is as energy efficient as other office buildings in the 66th percentile of surveyed buildings. This rating also means that City Hall is more efficient than 65% of other office buildings. Buildings receiving National Energy Performance Ratings of 75 or higher may be eligible to apply for an ENERGY STAR award[13].

[13] https://www.energystar.gov/istar/pmpam/help/Applying_ENERGY_STAR_Label.htm

Figure 1. Energy Use Intensity and ENERGY STAR National Energy Performance Ratings of City Hall for 2003 - 2012



According to Figure 1 above, while EUI has declined since 2010, City Hall's National Energy Performance Rating improved in 2011, but then went down in 2012. Because the Rating is based on a comparison to other similar buildings nationwide, City Hall will need to become more efficient at a pace that exceeds similar buildings. Staff anticipates that with the recent completion of lighting and HVAC improvements, the score for City Hall will improve during the next year. Staff is very interested in achieving a score of 75 and an ENERGY STAR designation for City Hall.

NEXT STEPS

Staff will continue to seek opportunities to improve efficiency at all City facilities as well as throughout the community. As noted above, it will be necessary to address energy efficiency in existing buildings in order to meet GHG emission reduction targets. Staff anticipates that, upon direction from the Committee and Council and direction provided in the new General Plan when it is adopted, the City will achieve emission reductions in existing buildings with increased disclosure of energy performance, financing for efficiency improvements, public awareness campaigns, and increases in the generation of renewable energy. Staff will also continue to monitor energy usage data and will provide annual updates to the Committee as data becomes available. In addition, staff will present a similar report to the full City Council in the near future.

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Recommended by: Alex Ameri, Director of Public Works – Utilities and Environmental Services

Approved by:

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Fran David, City Manager

Attachments:

Attachment I	PG&E's Solutions & Service Activity Report
Attachment II	PG&E's East Bay Energy Watch Activity Report
Attachment III	Energy Usage Summary
Attachment IV	Energy Related Emissions Summary
Attachment V	PG&E's Energy Summary for Hayward: 2005 – 2012
Attachment VI	Energy Use by City Facilities: 2003 – 2012

Pacific Gas and Electric Company®

Energy Solutions & Service Activity Report (2010-2012 Program Cycle)
City of Hayward, CA
Submitted June 13, 2013

1. Executive Summary

The City of Hayward began a community-wide energy reduction campaign in 2011 and were quite innovative in their approach to reduce energy and GHG emissions. Hayward enlisted the help of QuEST and PG&E for this targeted approach and by the end of 2012 their efforts resulted in over 1.75 MW of savings.

During the 2010-2012 program cycle, Hayward was a formula recipient of the ARRA program's EECBG (Energy Efficiency and Conservation Block Grant). Hayward decided to use its EECBG to fund three different energy efficiency incentive programs. These programs focused on 1) Large Energy Users, 2) Nonprofits and Governmental Agencies, and 3) Residential building owners. All results of the commercial-based programs were tracked in order to report energy savings and GHG reduction goals back to the US Department of Energy.

2. Large Energy Users (LEU) Program

- **The Large Energy Users (LEU)** program focused on Hayward's most "energy intensive" businesses that use a minimum of 1,500,000 kWh of electricity annually. In partnership with the PG&E East Bay Account Managers, Hayward awarded up to $50,000 per business to match PG&E incentives for those projects that saved energy through PG&E's Customized Retrofit Incentive Program. The eight beneficiaries of this matching incentive program included Berkeley Farms, Shasta Beverage, California Auto Dealers Exchange, Thermo Fusion, General Growth Properties, Pepsi Beverage, Kaiser Foundation and Morgan Advanced Ceramics. The combined savings from the LEU program was 536 kW, 3,486,910 kWh and 84,735 therms.

3. Nonprofits and Governmental Agencies (NGA) Program

- **The Nonprofits and Governmental Agencies (NGA)** program awarded up to $10,000 per agency to assist mostly in lighting retrofits and HVAC tune-ups. This program was successful in reducing 353 kW and 892,590 kWh. It ran through the East Bay Energy Watch program. Details are outlined in that report.

4. Hayward Residential / Energy Upgrade California™ (EUC) Program

- **The Hayward Residential/Energy Upgrade CA** program matched incentives that were available to home owners who incorporated qualifying home improvement projects to lower energy use.

Energy Upgrade California™ is a program of the California Public Utilities Commission in collaboration with the California Energy Commission, California counties, cities, nonprofit organizations, and the state's investor-owned utilities. Funding for the program comes from the utilities' ratepayers under the auspices of the California Public Utilities Commission in addition to incremental funding from the Department of Energy. There were 25 residents who received Hayward's matching incentives and the completed projects resulted in energy savings of 3,709 kWh and 5,525 therms.

5. Municipal Energy Efficiency Projects

- ENERGY TECHNOLOGY ASSISTANCE PROGRAM. Along with these ARRA funded programs, the City of Hayward completed several projects to further reduce energy at their municipal sites. They participated in the CEC-funded Energy Technology Assistance Program (ETAP) and installed bi-level lighting at two of the city parking garages, Foothill and Mission. This resulted in 23.5 kW and 231,000 kWh savings. Hayward also updated lighting at City Hall, Fleet Services and the main Police Facility which afforded another 47 kW and 188,000 kWh in savings.
- LED RETROFITS. Hayward updated over 140 of the City's streetlights to LED technology for an annual savings of 60,836 kWh. Hayward is in the process of retrofitting over 7,800 streetlights city-wide in 2013.
- CITY OF HAYWARD WATER POLLUTION CONTROL FACILITY.
    - The City of Hayward Water Pollution Control Facility has been very active in working with PG&E in upgrading their facility to be more efficient. They are planning to install a new cogeneration system and have already implemented a FOG (Fats, Oils & Greases) receiving station. PG&E assisted the WPCF staff with an audit of the facility and their application for Self-Generation Incentive Program (SGIP) funding to offset the costs of the new cogeneration technology.
    - In order to advise the staff on their decisions regarding these new technologies, meetings were coordinated between the WPCF Staff and the various Customer Generation and Tariff departments within PG&E. Through these discussions and much research regarding how the plant would fare on several different rate programs, Hayward chose to switch to the RES-BCT tariff. These RES-BCT tariffs allow local governments to generate electricity at one account and based on the value of any exported electricity, transfer bill credits (in dollars) to another account owned by the same local government within the same city or county.
    - The City of Hayward has projected annual savings of $410,000 from the new cogenerator contribution for plant usage and excess energy of 1.66 million kWh. These savings are to be spread amongst four drinking water reservoir pump stations and one

sanitary sewer lift station. The City of Hayward is the first city in the PG&E service area to apply for the Renewable Energy Self-Generation Bill Credit Transfer RES-BCT tariff.

6. Conclusions and Looking Forward to 2013-2014

Hayward has been unique in regards to the decision the city made to use its ARRA funds to directly support the businesses in their city. This has resulted in a broad partnership between the city and the school district as well as the local businesses and Hayward Chamber of Commerce. The partnership between PG&E and the City of Hayward is strong and many more initiatives are in progress this 2013-14 program cycle to further the joint goal of creating a more efficient Hayward community.

East Bay Energy Watch[1] Activity Report (2010-2012 Program Cycle)
City of Hayward, CA
Submitted June 13, 2013

1. Executive Summary

From January 1, 2010, through December 31, 2012, Hayward reduced electricity use by 9,206,775 kWh and natural gas use by 2,714 therms through the East Bay Energy Watch (EBEW) in partnership with Pacific Gas and Electric Company (PG&E). The energy savings taken together represent a greenhouse gas (GHG) reduction of 1,680 MT CO_2.

Energy efficiency activities, including installation and outreach efforts this past program cycle, were the following:

- **Small business outreach campaigns** provided one-stop shopping for energy efficiency upgrades, making it easier for business owners to install energy improvements to their buildings and operations. More than 40 businesses received audits during these campaigns.
- The City of Hayward is currently working to make **municipal energy efficiency improvements** to the City Hall and Police Station. These projects will be completed with help from EBEW's Municipal Implementation Team in the upcoming year and therefore fall under the 2013-2014 program cycle.
- Many of **Hayward's residents** took advantage of 'green house calls' offered though the California Youth Energy Services (CYES) program, in which energy saving devices are installed or upgraded in homes by youth.
- **Energy Star benchmarking** was completed for most City buildings and facilities, allowing the City to track its energy reduction efforts and compare energy performance with peer buildings in other cities.
- Enrollment in **My Energy**, PG&E's online tool, was completed for City energy accounts, enabling the City to monitor energy use and costs, and to track its energy reduction efforts and progress toward goals.
- The City hosted two **solar outreach events** with help from EBEW's SmartSolar program, to educate Hayward residents about the energy and financial benefits of rooftop solar systems. Through these events, thirteen residents expressed interest in solar, and three requested and received solar assessments.

[1] The East Bay Energy Watch is a Local Government Partnership managed by Pacific Gas and Electric under the auspices of the California Public Utility Commission. The East Bay Energy Watch serves both Alameda and Contra Costa Counties as well as the municipalities within each county.

The remainder of the report provides details of energy- and GHG-related accomplishments and activities for the 2010-2012 EBEW program cycle.

2. Annual Highlights and Trends

Highlights for 2010-2012 program cycle include a comparison of energy savings throughout each year as well as savings across business sectors within Hayward.

- Total energy savings in 2010 equaled 2,535,221 kWh, 2,204,958 kWh in 2011, and 4,466,596 kWh for 2012 (Table 1).
- In 2010, Offices and Manufacturing / Transportation sectors accounted for the majority of the energy savings within Hayward, at 44% and 31% respectively. In 2011, the Offices sector accounted for 29% of the energy savings. In 2012, the Retail sector accounted for 17% of the energy savings.

3. Energy Efficiency Activities Update

- ENERGY EFFICIENCY FOR BUSINESS. In partnership with PG&E and EBEW, the City launched two energy efficiency outreach campaigns during the 2010-12 period, the Nonprofit and Governmental Agency campaign and the Green Hayward campaign.
    - **Nonprofit and Governmental Agency (NGA) Energy Efficiency Incentive Program:** This program was initiated by Hayward in 2011. The city allocated $250,000 in Energy Efficiency and Conservation Block Grant (EECBG) funds to assist NGAs with energy efficiency programs that provide energy audits and financial incentives. The NGA program awarded up to $10,000 per agency to assist mostly in lighting retrofits and HVAC tune-ups. The Best program, administered via Kema as part of the East Bay Energy Watch, was used to target these customers and encourage installation of more efficient technologies. From the efforts of this initiative, 29 Hayward NGAs participated and implemented projects for a savings of 892,590 kWh and 353 kW and 750 therms.
    - **Hayward Unified School District Projects:** One of the biggest successes to come out of the NGA program involved the Hayward Unified School District (HUSD). HUSD was considering some much-needed lighting retrofits but the District lacked the initial investment. The City of Hayward decided to allocate $50,000 of the NGA program funds to the Hayward Unified School District to assist them in completing a gym lighting retrofit at Mt Eden High School. HUSD maintenance staff was so satisfied with the results of this initial project that they considered other lighting projects at the schools through PG&E's On Bill Financing program. In the summer of 2012, the District, in collaboration with PG&E's 3rd party Kema/Best lighting

program, completed lighting retrofits projects at 32 schools. The overall energy savings is over 2,000,000 kWh. The synergy that developed from these lighting projects furthered a partnership between PG&E, the City and School District to reach joint energy efficiency goals.

- **Green Hayward Campaign:** The goal of this campaign was to encourage Hayward's small and medium businesses (electric demand less than 200 kW) to install energy saving retrofits. The program was designed to directly meet the needs of Hayward's businesses by providing one-stop shopping for their energy efficiency needs. City Manager Fran David signed a letter of support for the program with hope of increasing participation and the letter was mailed to approximately 2,000 Hayward businesses. The businesses targeted were those that had not participated in PG&E rebate programs in the past. Special attention was paid to the industrial customers that had discontinued T12 lighting technology installed in their facility. Over the course of the campaign period from October through December, 572 businesses were contacted by PG&E reps and approximately 328 audits were performed. The PG&E visits included assistance with PG&E's "My Energy" web-based usage tool, billing & rate questions. Through this effort, 41 projects were installed with savings over 1,379,207 kWh.
- Commercial energy savings resulting from EBEW audits and project installations for the 2010-2012 program cycle totaled 9,092,152 kWh and 190 non-residential customers were served. Overall, 286 projects (some customers had multiple projects) were installed via East Bay Energy Watch programs. *Campaign contacts: Andrea Schumer (PG&E), 925.459.8033 and Tim Bankroff (QuEST), 510.981.2030.*

- RESIDENTIAL ENERGY EFFICIENCY CAMPAIGNS. The Rising Sun Energy Center was active in Hayward during the summers of 2010 and 2011, providing no-cost energy efficiency home visits, or 'Green House Calls', to local residents through the California Youth Energy Services (CYES) program. Through this program, 18 local youth were trained in energy conservation, replacing incandescent light bulbs with CFLs and offering other energy conservation measures. A total of 411 units were served.
  - **2010 CYES Highlights:** In 2010, CYES provided employment and training to nine youth, ages 15-22. These youth provided 212 households with energy savings hardware and information, 93% of which were in Hayward proper. Energy Specialists installed the following materials in Hayward homes at no cost: 1,562 compact fluorescent lamps, 297 efficient-flow showerheads & aerators, 71 retractable clotheslines, 25 CFL torchiere lamps, and 106 power strips. Of the households served in Hayward, 45% were renters, 88% were low-moderate income

households, and 38% were primarily non-English speaking. The CYES Marketing team attended many community events throughout the spring and summer. The following events were season highlights: CSU East Bay Green Expo, City of Hayward Cinco de Mayo Celebration, Alameda 4C Children's Faire, Hayward Downtown Street Party, and Hayward Farmer's Markets.

  - **2011 CYES Highlights:** In 2011, CYES provided employment and training to nine youth, ages 15-22. These youth provided 199 households with energy savings hardware and information, 94% of which were in Hayward proper. Energy Specialists installed the following materials in Hayward homes at no cost: 1,081 compact fluorescent lamps, 205 efficient-flow showerheads & aerators, 31 retractable clotheslines, 41 CFL torchiere lamps, and 133 power strips. Of the households served in Hayward, 62% were renters, 87% were low-moderate income households, and 48% were primarily non-English speaking. The CYES Marketing team attended many community events throughout the spring and summer. The following events were season highlights: City of Hayward Green Expo, South Hayward Community Festival, 4C Children's Faire, and Cinco de Mayo con Orgullo.
  - *Program Contact: Julia Hatton (Rising Sun Energy Center), 510.665.1501; Andrea Schumer (PG&E), 925.459.8033.*

- MUNICIPAL ENERGY PROJECTS. Energy efficiency projects are to be completed at the City Hall and Police Station in 2013. Some of the measures associated with these projects include HVAC scheduling, supply air reset, HVAC controls-air flow reduction, economizer repair, and chilled water reset. The projects are expected to save the City over 430,000 kWh and 4,800 therms. *MIT Contact: Brendan Havenar-Daughton (QuEST), 510.981.2065; Andrea Schumer (PG&E), 925.459.8033.*
- SMARTSOLAR.[2] The City hosted several outreach events, including a Solar Fair in July 2012 and an Energy Upgrade California Workshop in November 2011. There were thirteen residents who expressed interest, six of whom were contacted through the Solar Fair and seven of whom were contacted through the EUC workshop. Three residents were enrolled and received a solar assessment. *Program Contact: Michael Denevan (Community Energy Services Corporation), 510.981.7765.*
- BENCHMARKING CITY BUILDINGS. EBEW staff benchmarked 18 buildings including City Hall, the Fire Stations, the Police Department and several others (Appendix A). In most cases, each

[2] SmartSolar, administered by Community Energy Services Corporation, exclusively served the City of Berkeley until July 2011 under a contract with the U.S. Department of Energy. In July 2011, SmartSolar's service territory expanded to include all jurisdictions served by EBEW throughout Alameda and Contra Costa Counties. The program is funded for the 2013-2014 program cycle.

building's EUI can be reliably compared to the national median EUI as an indicator of relative efficiency. EBEW delivered a presentation of benchmarking results to the City Council's Sustainability Task Force in April 2012. EPA ENERGY STAR Portfolio Manager should be used in concert with PG&E's My Energy tool to monitor energy use trends. *Benchmarking Contact: Tim Bankroff (QuEST), 510.981.2030; Andrea Schumer (PG&E), 925.459.8033.*

- ONLINE ENERGY MANAGEMENT. The City is currently enrolled in PG&E's My Energy online portal which allows users to pay energy bills and track energy consumption. The City has most of its accounts registered in the My Energy online tool. *My Energy Contact: Tim Bankroff (QuEST), 510.981.2030; Andrea Schumer (PG&E), 925.459.8033.*

4. Energy Efficiency Savings Update by Sector

i. RESIDENTIAL ENERGY EFFICIENCY PROJECTS

Residential energy savings installed by CYES equaled 114,622 kWh for the 2010-2012 program cycle; a total of 302 households were served.

Feedback for the program is positive. A recent participant stated,

"Very personable and helpful representatives of your organization. With their knowledge and the installation of new light bulbs, clothesline and faucet aerator I'm sure we'll be saving energy and reducing our PG&E bill and water, too!"

ii. COMMERCIAL ENERGY EFFICIENCY PROJECTS

Commercial energy savings resulting from EBEW audits and project installations for the 2010-2012 program cycle totaled 9,092,152 kWh and 190 non-residential customers served.

5. Summary of Energy Savings in Hayward

Table 1. Energy Savings & Greenhouse Gas Reductions by Year.

Year	Energy Savings (kWh)	GHGs Reduced (MT CO_2)
2010	2,535,221	380
2011	2,204,958	440
2012	4,466,596	860

Over the course of the program cycle, EBEW installed projects in Hayward that achieved energy savings equivalent to emissions of 1,680 Metric Tons of CO_2. This is approximately equal to taking 280 passenger cars off of the road for one year[3].

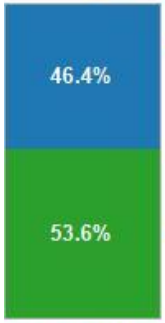
[3] Assumptions: California Air Resource Board's EMFAC model, which indicates an average passenger car in California emits 5.96 metric tons of CO_2 per car per year. Based on 2010 scenario year and 12,000 miles per year per car. Avoided emissions based on PG&E average emissions factor. More information is available at http://www.pgecurrents.com/2013/02/20/pge%E2%80%99s-clean-energy-reduces-greenhouse-gas-emissions/

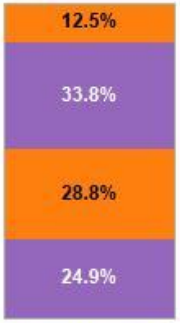
Incorporated City of HAYWARD PG&E Energy Overview 2005 to 2012

MAIN

Pacific Gas and Electric Company

Energy Usage Summary

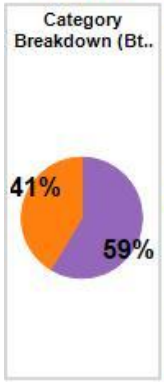


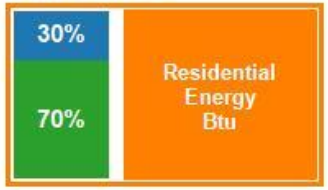


Overall Energy Usage (in Btu)

	2005	2006	2007	2008	2009	2010	2011	2012	From 2005 to 2012
TBtu	6.74	6.81	6.93	6.90	6.67	6.71	6.85	6.81	54
Trends		1.0%	1.8%	-0.4%	-3.3%	0.5%	2.1%	-0.7%	1.0%

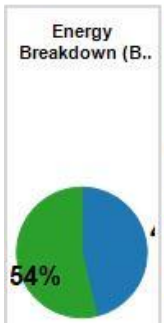
Natural Gas
Electricity
Non-Residential
REsidential
Legend





	2005	2006	2007	2008	2009	2010	2011	2012	2005 to 2012
TBtu	2.78	2.80	2.83	2.81	2.81	2.80	2.87	2.78	22
Trends		0.9%	1.0%	-0.6%	-0.2%	-0.2%	2.3%	-2.8%	0.3%

	2005	2006	2007	2008	2009	2010	2011	2012	2005 to 2012
TBtu	3.96	4.01	4.10	4.09	3.87	3.91	3.98	4.02	32
Trends		1.1%	2.3%	-0.2%	-5.5%	1.1%	1.9%	0.9%	1.5%



	2005	2006	2007	2008	2009	2010	2011	2012	2005 to 2012
GWh	926.39	932.49	940.72	947.93	908.41	909.63	914.04	916.05	7,396
Trends		0.7%	0.9%	0.8%	-4.2%	0.1%	0.5%	0.2%	-1.1%

	2005	2006	2007	2008	2009	2010	2011	2012	2005 to 2012
M Therms	35.78	36.27	37.19	36.69	35.74	36.07	37.32	36.80	291.9
Trends		1.4%	2.5%	-1.3%	-2.6%	0.9%	3.5%	-1.4%	2.9%

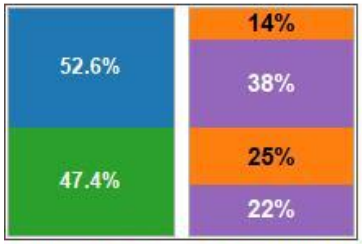
Incorporated City of HAYWARD PG&E Energy Overview 2005 to 2012

MAIN

Pacific Gas and Electric Company

Energy Related Emissions Summary

From 2005 to 2012



Natural Gas | Electricity | Legend | Residential | Non-Residential

Overall Energy Related Emissions

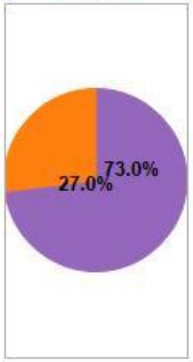
	2005	2006	2007	2008	2009	2010	2011	2012	2005 to 2012
000's MTCO2	395.35	385.37	468.60	470.31	426.63	375.01	361.01	383.53	3,265.81
Trends		-2.5%	21.6%	0.4%	-9.3%	-12.1%	-3.7%	6.2%	-3.0%

PG&E Emission Factors

	2005	2006	2007	2008	2009	2010	2011	2012	
Electricity EF	0.489	0.456	0.636	0.641	0.575	0.445	0.393	0.453	lbs CO2 per kWh
		-7%	39%	1%	-10%	-23%	-12%	15%	% change..
Natural Gas	11.70	11.70	11.70	11.70	11.70	11.70	11.70	11.70	lbs CO2 per therm

52.6%

Electricity Emissions



Residential Electricity Emissions

	2005	2006	2007	2008	2009	2010	2011	2012	
000's MTCO2	53.77	51.08	71.58	73.08	66.20	50.95	45.11	51.70	463.48
Trends		-5.0%	40.1%	2.1%	-9.4%	-23.0%	-11.5%	14.6%	-3.9%

Non Residential Electricity Emissions

	2005	2006	2007	2008	2009	2010	2011	2012	
000's MTCO2	151.71	141.79	199.68	202.53	170.72	132.66	117.83	136.53	1,253.44
Trends		-6.5%	40.8%	1.4%	-15.7%	-22.3%	-11.2%	15.9%	-10.0%

47.4%

Natural Gas Emissions

Residential Natural Gas Emissons

	2005	2006	2007	2008	2009	2010	2011	2012	
000's MTCO2	103.43	103.92	105.22	103.75	103.03	102.96	106.29	102.23	830.82
Trends		0.5%	1.2%	-1.4%	-0.7%	-0.1%	3.2%	-3.8%	-1.2%

Non-Residential Natural Gas Emissions

	2005	2006	2007	2008	2009	2010	2011	2012	
000's MTCO2	86.44	88.57	92.13	90.95	86.67	88.44	91.79	93.07	718.06
Trends		2.5%	4.0%	-1.3%	-4.7%	2.0%	3.8%	1.4%	7.7%

PG&E Energy Summary for Hayward 2005 to 2012

Contact Government and Community Partnerships at GHGDataRequests@pge.com for more information

Pacific Gas and Electric Company

This document will help you understand drivers of Hayward's energy usage and the ways the community and PG&E are partnering to decrease energy consumption.

Overall energy usage

This is the breakdown between Non-Residential and Residential energy usage in 2012 for Hayward.

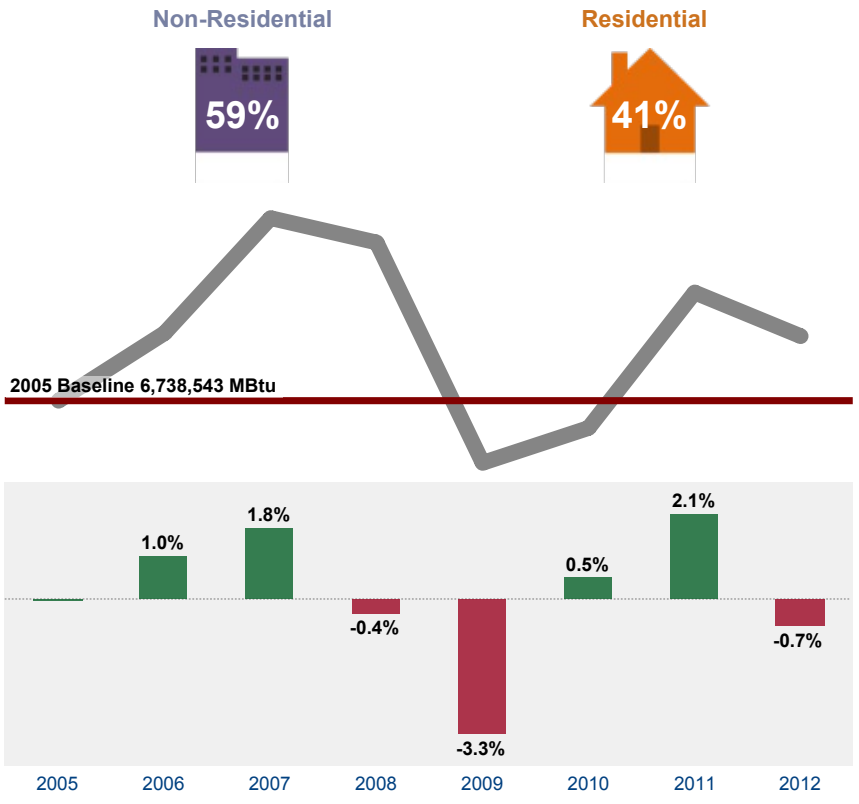
6,805,662

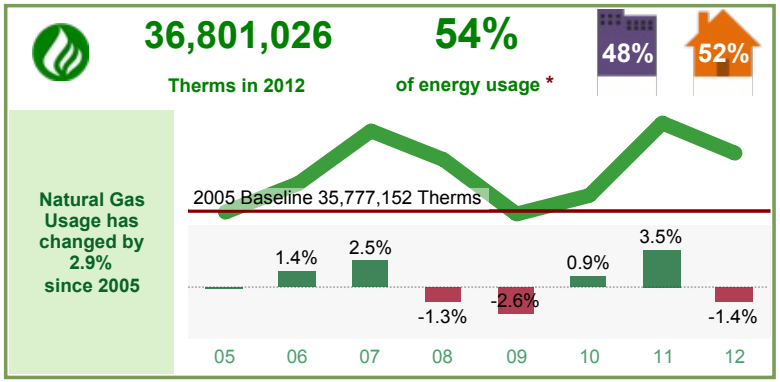
million British thermal units in 2012*

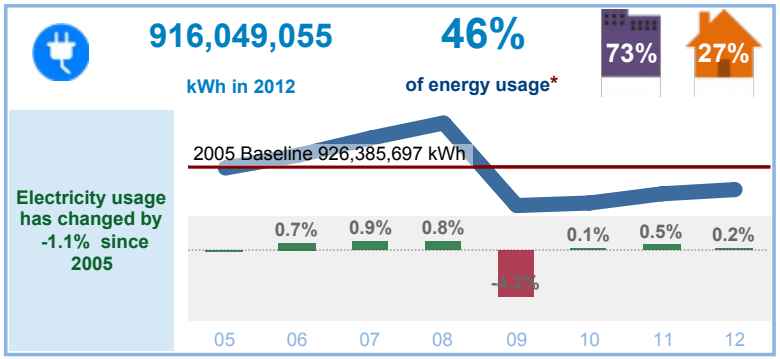
Energy usage has changed by 1.0% since 2005

This is the Year over Year change in overall energy usage from the prior year

*Consumption has been converted to British thermal units (Btu) to compare electricity and natural gas usage

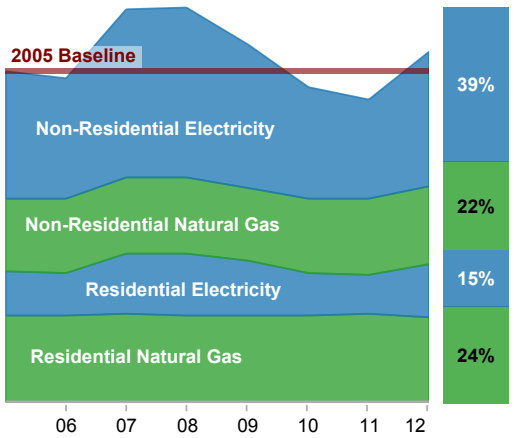






Energy Related Emissions

CO2 Emissions from energy usage changed by 5.9% since 2005



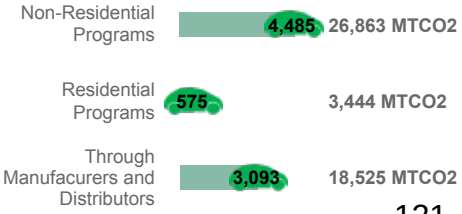
418,827 MTCO2

GHG emissions from energy usage in Hayward 2012

48,832 MTCO2 Avoided since 2006 through PG&E programs

equivalent to

8,152 cars off the road for one year



Pacific Gas and Electric

Where Electricity Comes From

PG&E's delivers some of the cleanest electric power in the nation. Here's how we did it in 2011

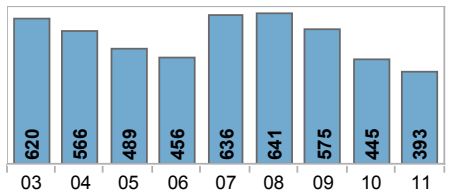
Natural Gas	25%
Nuclear	22%
Large Hydroelectric	18%
Renewables	19%
Unspecified	15%
Other Fossil	1%
Coal	0%

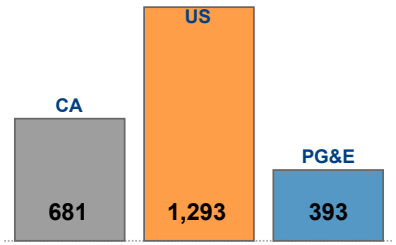
2011 Renewables

- Biomass and Waste 23%
- Elibible Hydroelecric 19%
- Geothermal 26%
- Solar 1%
- Wind 31%

PG&E's average emissions from delivered electricity was less than half the U.S. Average in 2011

(shown in lbs CO2 per MWh)



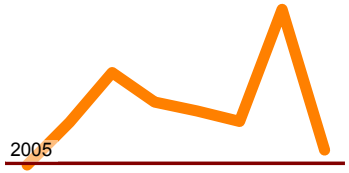


pounds CO2 emitted per megawatt hour

Residential Energy

Usage

41% of community energy usage (Btu) is from residential customers



Energy usage has changed by 0.3% since 2005

30%

Residential electricity usage changed by 3.8% since 2005

70%

Residential natural gas usage has changed by -1.2% since 2005

Averages

Averages

Monthly Household Averages in 2012

Multi Family	344 kWh per month	-1.4% since 2005
Single Family	432 kWh per month	0.9% since 2005
Multi Family	24 therms per month	-6.3% since 2005
Single Family	35 therms per month	1.6% since 2005

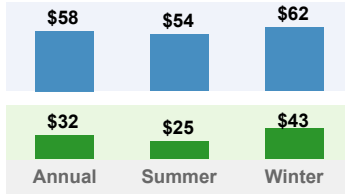
Climate Zone Average: 410 kWh

Climate Zone Average: 36 therms

Climate Zone 03

By Season

Average Monthly Bill



Renewables

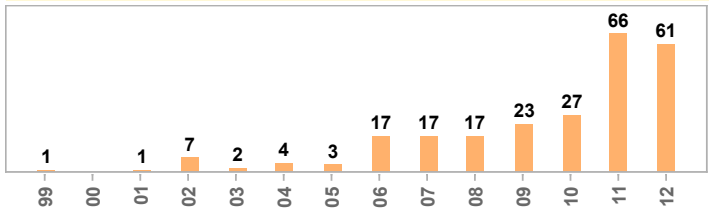
Photovoltaics

246 SItes

878 kW

CEC AC Capacity

Residential sites interconnected to the PG&E grid 99 to 12



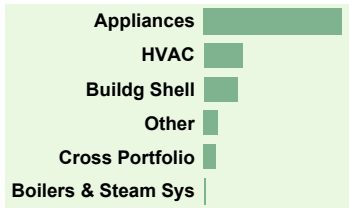
Energy Efficiency

3,444 MTCO2

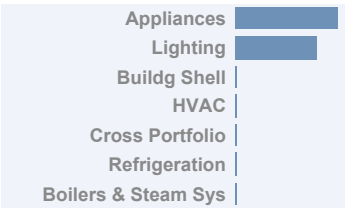
Annual avoided emissions since 2006 through PG&E programs

CO2

214,000 Therms Saved

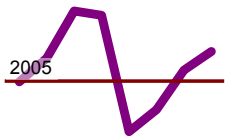


8,995,000 kWh Saved



Non-Residential Energy Usage

59% of Hayward energy usage (Btu) is from non-residential customers

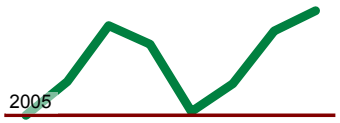


Non-residential energy usage has changed by 1.5% since 2005

58%

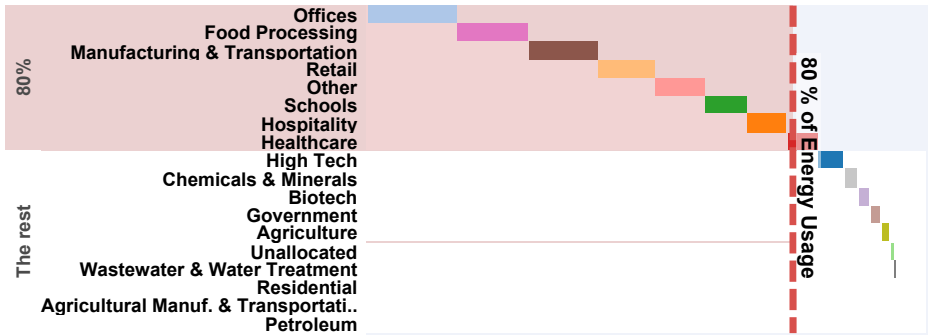
Electricity usage has changed by -2.9% since 2005

42%



Non-residential natural gas usage has changed by 7.7% since 2005

The top 8 Segments were responsible for 80% of energy usage in 2012



Renewables

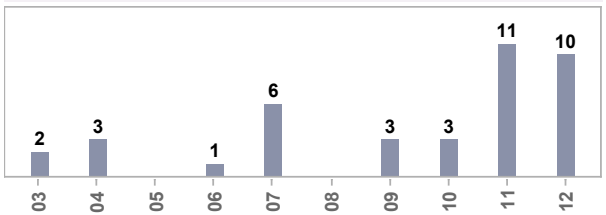
Photovoltaics

38 Sites

6,813 kW

CEC AC Capacity

Sites Interconnected to the PG&E grid 03 to 12



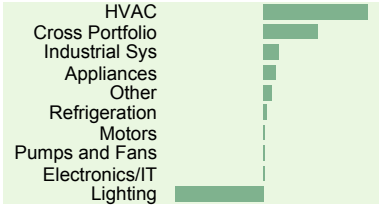
Energy Efficiency

26,863 MTCO2

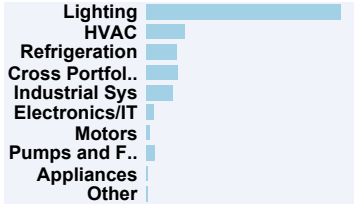
Annual avoided emissions since 2006 through PG&E programs

CO2

844,000 Therms Saved



94,309,000 kWh Saved



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Energy Use by City Facilities - 2003 through 2012

Facility	Address	National Median Source EUI (kBtu/ft²)	Year Ending 12/31/2003		Year Ending 12/31/2005		Year Ending 12/31/2009		Year Ending 12/31/2010		Year Ending 12/31/2011		Year Ending 12/31/2012	
			Source EUI (kBtu/ft²)	% Difference from National Median	Source EUI (kBtu/ft²)	% Difference from National Median	Source EUI (kBtu/ft²)	% Difference from National Median	Source EUI (kBtu/ft²)	% Difference from National Median	Source EUI (kBtu/ft²)	% Difference from National Median	Source EUI (kBtu/ft²)	% Difference from National Median
16 Barnes Court	16 Barnes Court	60	38.8	-35.3	38.3	-36.2	45.9	-23.5	48.1	-19.8	46	-23.3	44.6	-25.7
Cinema Place Parking Gar	22695 Foothill Blvd	123.1	Not Available	Not Available	Not Available	Not Available	18.5	-85	18.3	-85.1	18.2	-85.2	9.6	-92.2
City Hall	777 B Street	215.2	166	-22.3	191.6	-9.9	180.8	-16.1	183	-14.8	181.3	-16.3	178.4	-17.1
City Hall Parking Garage	22625 Mission	123.1	Not Available	Not Available	Not Available	Not Available	1.4	-98.9	1.6	-98.7	1.3	-98.9	1.3	-98.9
Fire Station 1	22700 Main St	154.4	151.3	-2	150.3	-2.7	153.9	-0.3	153.6	-0.5	150.6	-2.5	145.6	-5.7
Fire Station 2	360 W Harder Rd	154.4	120.5	-22	137.3	-11.1	105.3	-31.8	101.3	-34.4	104.3	-32.4	101.8	-34.1
Fire Station 3	31982 Medinah St	154.4	160.1	3.7	170.7	10.6	180.9	17.2	156.1	1.1	176	14	185.3	20
Fire Station 4	27836 Loyola Ave	154.4	153.1	-0.8	174.3	12.9	157.6	2.1	139.6	-9.6	135.9	-12	144.2	-6.6
Fire Station 5	28595 Hayward Blvd	154.4	102.1	-33.9	102.6	-33.5	118.9	-23	116.5	-24.5	118.1	-23.5	120.1	-22.2
Fire Station 6	1401 W Winton Ave	154.4	120.2	-22.2	127.9	-17.2	144.4	-6.5	87.2	-43.5	86.7	-43.8	92.8	-39.9
Fire Station 7	28270 Huntwood Ave	154.4	175.5	13.7	178.4	15.5	181.3	17.4	213.7	38.4	218.1	41.3	228.1	47.7
Fire Station 8	25862 Five Cnyns Pkwy	154.4	49.8	-67.7	50.7	-67.2	60.2	-61	83.5	-45.9	84.2	-45.5	81.1	-47.5
Fire Station 9	24912 Second St	154.4	126.5	-18.1	81.8	-47	137.9	-10.7	133.3	-13.7	136.4	-11.7	136.8	-11.4
Fleet Mgmt/Streets	24505 Soto Rd	100.4	130.6	30.1	133.4	32.9	141.9	41.3	136.7	36.2	142.9	42.3	125.5	25
Main Library	835 C Street	235.6	196.7	-16.5	182.8	-22.4	207.9	-11.8	216.7	-8	255.7	8.5	244.3	3.7
Police Department	300 W Winton Ave	154.4	290.5	88.1	305.4	97.8	308.2	99.6	312.9	102.7	308.6	99.9	303.9	96.8
Utilities Building	24499 Soto Rd	123.1	95.5	-22.4	101.5	-17.5	103.1	-16.2	110.3	-10.4	112.9	-8.3	78.7	-36.1
Weekes Branch Library	27300 Patrick Ave	235.6	136.6	-42	126	-46.5	128.5	-45.5	129.7	-44.9	132.4	-43.8	129.7	-44.9