Title: Energy and Water Efficiency Programs

Subject: Report on Customer Efficiency and Sustainability Programs

From: City Manager

Lead Department: Utilities

Recommendation
This is an informational report, and no action is required.

Executive Summary
As a response to requests from Council Members, staff has prepared an informational report on the programs provided by the Utilities and Planning Departments for energy efficiency and sustainability. Attachment A includes a list of current programs, programs being designed for near-term implementation and program initiatives under evaluation for potential future implementation. This list was developed to assist Council in its review of environmental activities and in planning future policies.

Background
The citizens of Palo Alto are exceptionally dedicated to maintaining the environment, and the City has long stood at the national forefront of conservation efforts. The Planning and Utilities Departments have taken a leadership role in developing and implementing environmentally sound programs. For more than thirty years, the City of Palo Alto Utilities Department (CPAU) has created multiple, innovative programs and services designed to promote efficiency and sustainability of natural and other resources.

These initiatives assist both residential and business customers address environmental issues as well as reduce costs and utilities usage.

Discussion
For Palo Alto residents, CPAU offers individualized evaluations of home water and energy usage, and then provides feedback on ways that householders can reduce consumption of these resources. CPAU also provides residential customers with a personal analysis of their utilities consumption compared to that of individuals or families occupying similar residences. Consumption data is provided anonymously to protect customer confidentiality.
CPAU actively develops incentives for residents who take advantage of energy efficiency programs. Customers receive cash rebates for the installation of efficient household appliances, equipment and infrastructure. CPAU also provides homeowners with simple devices that help conserve water and energy.

The City leads the nation in green construction policies that mandate exceptional energy savings for both residences and businesses. At the same time, it offers programs that encourage builders to address sustainability and efficiency issues in the early stages of designing a construction project. Planning and Utilities coordinate in this effort, and CPAU provides rebates for new construction that exceeds requirements as well as for the installation of certain solar systems.

In the commercial arena, CPAU offers programs similar to those extended to residents, along with efforts designed to meet the distinctive needs of business. These include energy and water audits, rebates for a variety of equipment and building upgrades.

CPAU continues to explore potential initiatives for future adoption that will assist businesses in expanding their green status. These initiatives include instituting no-interest business loans for the installation of efficient electrical equipment, rebate programs designed specifically for hotels and monitoring programs that track energy and water use in completed construction projects.

Looking ahead, CPAU is investigating the potential impact, resource requirements and effectiveness of emerging technologies and initiatives. Among these are rebate programs designed for multi-family dwellings and a residential no-interest loan program, similar to that offered to commercial operations.

Resource efficiency and sustainability continue as priorities for Palo Alto’s Utilities and Planning Departments. With the decades-long track record of success in devising and implementing green programs, Palo Alto maintains a long-term commitment to building on the City’s leadership in environmental efficiency and sustainability. Staff will continue to review new technologies and programs to continue to meet Council policies now and as they evolve over time.

**Resource Impact**
This is an informational report of ongoing activities. No additional resources are being requested at this time for implementation of the programs. When new programs or partners are instituted, the information is sent to Council for review and approval. Additional staff to meet updated efficiency goals will be presented in the FY 2012 budget request.

**Policy Implications**
These programs conform to the Council approved Long-term Electric Acquisition Plan (LEAP) and Gas Utility Long term Plan (GULP) Guidelines, which recognize cost-effective energy efficiency measures as a principle resource and require that they take priority over the
purchase of renewable and conventional supply sources. Energy efficiency also enables the community to reduce its carbon footprint and will help achieve the Council approved greenhouse gas reduction targets by 2020.

**Environmental Review**

This informational report does not meet the definition of a project, pursuant to section 21065 of the California Environmental Quality Act (CEQA), thus no environmental review is required.

**ATTACHMENTS:**

- Attachment A: List of Programs (PDF)

Prepared By: Joyce Kinnear, Manager

Department Head: Valerie Fong, Director

City Manager Approval: James Keene, City Manager
Current Programs

Residential Smart Energy Program:
The City gives financial rebates to residents who install energy efficient appliances and equipment in their homes or on their property. Among these are home heating and cooling systems, insulation, water heaters, insulation and power strips. Palo Alto also pays rebates to customers who have their older model, inefficient refrigerators and freezers recycled through a City program. Additionally, the city sponsors programs to encourage consumers to install Compact Fluorescent Light (CFL) and Light Emitting Diode (LED) bulbs and fixtures, including LED holiday lights.

Residential Home Energy Reports:
CPAU provides City residents with individualized reports comparing their home energy use with that of 100 similarly sized homes. An interactive online web portal (www.cityofpaloalto.org/HomeEnergyReports) also offers tips and suggestions on reducing electric and natural gas usage. In November 2010, the first month of implementation, this program has been positively received, with only 31 opt-outs from over 18,600 reports.

Residential Energy Assistance Program (REAP):
The City provides low-income residents---at no cost---home lighting and heating system upgrades as well insulation for walls and roofs and weatherstripping for doors and windows.

Residential Green@Home:
CPAU offers free in-home audits through a program coordinated by Acterra, a local, non-profit, volunteer environmental organization. At the end of the audit, participants receive personalized efficiency tips along with simple efficiency-improvement items including, Compact Fluorescent lamps), faucet aerators and energy monitors.

Residential Water Programs
Through a partnership with the Santa Clara Valley Water District (SCVWD), Palo Alto provides residents with programs to improve their water-use efficiency. These programs include indoor and outdoor home water-use audits, as well as rebates for toilets, washing machines, landscape upgrades and weather-based controllers for irrigation systems.

PaloAltoGreen:
Residents and businesses who are willing to pay a small price premium offset their own home or business electric use with 100% renewable energy.

Green Building Program:
The Green Building Program requires building permit issuance based on a project’s scope of work. The program mandates that all new construction achieve 15% energy savings beyond that required by the state energy code, and provides financial incentives to achieve additional savings for projects that exceed those minimum requirements.

The program requires all non-residential renovation costing more than $100,000 to obtain an ENERGY STAR® Portfolio Manager Rating from the U.S. EPA, allowing an owner or property manager to track future energy and water consumption of the building project. The applicant
inputs utility data and receives an energy score on a scale of 1 to 100, relative to similar buildings nationwide.

The program also requires all residential renovations with a cost of more than $100,000 to receive a California Whole-House Home Energy Rating (HERS II) developed by the California Energy Commission. This rating provides on-site evaluation of the energy performance of the home and offers analysis of the cost-effectiveness of potential energy efficiency improvement projects.

New Construction Rebates

Both residential and commercial utilities customers who exceed Green Building Program requirements when going through the permit process for new construction are eligible to receive incentive payments. The Planning and Utilities Departments coordinate the customer application and payment processes.

Commercial Advantage Program

Business customers are offered rebates for many items of equipment, including the following: installing lighting upgrades, wall and ceiling mounted motion sensors, LED exit signs, boilers, pipe insulation, variable frequency drives, computer power management software, night covers for refrigerated display cases, anti-sweat heater controls for coolers/freezers, auto-closers for cooler doors, window film, and custom electric and natural gas saving projects. Non-profit organizations can get extra local assistance in working through the application and rebate process from the third-party “Connect the Dots” Program.

Right Lights+ Program

Small business customers can request onsite audits and efficiency rebates on a variety of lighting, sensors and commercial kitchen upgrades, in addition to door gaskets, LED exit signs, vending machine controls, strip curtains for coolers and customized projects.

Commercial Refrigeration

Business customers with commercial kitchens can receive rebates for equipment upgrades that typically represent a longer return on investment. These include: walk-in cooler controls and motors, as well as LED case lights for both display cases and walk-in coolers.

Commercial and Industrial Energy Efficiency Program

Large businesses can get assistance from our contractor Enovity with building commissioning services. This assistance includes reviewing original lighting and heating/cooling systems and their operating specifications, and helping the customer obtain rebates for replacing chillers, controls, linear fluorescent lighting, occupancy sensors, boilers and insulation.

Commercial and Industrial Water Program

As with residential customers, CPAU partners with the SCVWD to provide all non-residential with indoor and outdoor water audits along with rebates for toilets and washing machines, landscape conversions and weather-based controllers for irrigation systems.

Water Efficient Technologies (WET) Program
In partnership with the SCVWD, CPAU provides incentives to businesses for upgrading or replacing equipment that improve the water use efficiency in various facility processes. Rebates may cover up to 50% of the project cost.

**PV Partners**
This program provides rebates to businesses and residents who install solar electric systems, also known as photovoltaic (PV) systems.

**Solar Water Heating**
Incentives are provided to businesses and residents who install solar water heating systems.

**Programs in Development for Near-Term Implementation**

**No-Interest Business Loan Program**
This program will provide businesses with no-interest loans to install electric energy efficient equipment. Loans can be up to 5 years in length.

**Operational Performance Reviews**
Following the adoption of the state Green Building Code (CALGreen), the City Planning and Utilities departments are developing a program to monitor and track the energy and water use of residential and business structures after the completion of construction/permitting processes, to ensure that facilities are kept operating at their optimal designed performance level.

**ENERGY STAR® Profile Manager Building Automatic Upload for Rating**
To make it easier for business customers to participate in monitoring and evaluating their building’s energy use, this program would allow owners and tenants to have their energy usage automatically uploaded from the utility billing system to the Profile Manager database. The most efficient buildings can then receive recognition from ENERGY STAR for performance excellence.

**Hotel Efficiency Program**
Rebates will be offered to hotels who install combination occupancy sensors and system operating controls for lighting, air conditioning and plug loads, all of which cut power use when rooms are unoccupied.

**Others, To Be Determined**
A Request for Proposals has been issued for the development of new and innovative efficiency programs. Based on the responses, recommended contracts and programs will be brought to City Council in early 2011.

**Program Ideas Under Evaluation for Potential Implementation**

**Multi-Family Incentives**
This program concept would target apartment and condo owners or tenants by offering rebates and other assistance to install efficiency improvements.
Point of Sale Efficiency Requirements
This initiative involves researching the legal requirements, administrative process and market acceptance of providing incentives for installation of efficient and water and energy-using equipment at the time of building sale. Such programs are known throughout the state as either Residential or Commercial Energy Conservation Ordinances (also well known as RECO or CECO programs).

Residential No-Interest Loan Program
After the “No Interest Business Loan Program” has been in place and successfully implemented for at least one year, it will be reviewed for cost and risk management factors that might warrant expansion of the program to residential customers.

Feed In Tariff
The potential for a program that provides a guaranteed fixed-price with a fixed-term payment for customers who generate their own renewable energy is under review.

Tap Water Recycling Program
This program would save the potable water that normally runs wastefully down the drain while the customer waits for hot water by providing incentives for customers to install a pump at the sink to inject the cold water back into the plumbing system, resulting in immediate hot water.

Other Innovative Programs
Both Utilities and Planning Department staff continually review new technologies for potential implementation. CPAU is in the process of putting together a formal review process and budget for evaluating innovative technologies.