

**Attachment I**  
**SMUD Programs and Services**

# Attachment I

## SMUD Programs and Services

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# Attachment I

## SMUD Programs and Services

SMUD offers a wide variety of programs and services to meet the needs of its business and residential customers. As a locally owned utility, SMUD can tailor its programs to meet the specific needs of the communities it serves. Many of SMUD's programs and policies have been shaped by input from citizen and businesses who have attended SMUD's Board meetings that are always open to the public. This keeps decisions about energy issues at the local level and allows SMUD to develop programs that reflect community values, such as the efficient use of energy resources, environmentally friendly policies, and economic development. The following section describes SMUD's Residential and Commercial programs and services.

### Residential Programs and Services

#### Customer Care

- 1. Residential Contact Center:** SMUD's Residential Contact Center consistently receives ratings in the mid 90% range for customer satisfaction on ongoing transactional surveys. A combination of web services and a full array of Interactive Voice Response (IVR) options provide 24-hour service to customers. SMUD also provides a Residential Contact Center that operates Monday through Friday from 7am to 7pm. If annexation is approved, six months before implementation, SMUD anticipates increasing its Residential Contact Center staff by five employees to ensure continued service levels for current SMUD customers as well as excellent service to the new Yolo County customers.

In addition to handling standard transactions such as moves, transfers and payments arrangements, SMUD Contact Center staff proactively offers customers a wide array of additional services, such as Greenergy®, free shade trees, information on SMUD's low-income and MedRate programs, as well as advice on how to reduce energy bills. The customer is provided a one-stop shop for their energy and billing needs.

- 2. Bill Payment:** SMUD offers several bill paying options for customers:

- Traditional pay by mail is available and check payments along with payment stubs can be sent to SMUD, P.O. Box 15555, Sacramento, CA 95852-1555.
- E-bill through the SMUD Web site is safe and secure and is the easiest way to pay from a checking account or with a credit card or ATM/debit card. E-bill service also offers a fast easy way to check usage and enroll in SMUD programs.
- Budget Billing is available for customers who want to pay a set amount each month for their electric bill. This allows customers to know what their electric bill will be each month and also makes it easier for customers to budget for the expense. SMUD will average a customer's electric bill from the previous 12 months and use this amount for the monthly bill. All Budget Billing accounts are reviewed annually. If a customer uses less electricity than anticipated, the account is credited. If a customer uses more electricity, the customer can pay the amount due in one lump sum or have it spread over

the next 12 months. To enroll, customers may contact the SMUD customer service department (1-888-742-SMUD (7683)).

- For check-free convenience, customers can have their bill paid automatically every month through our Electronic Funds Transfer (EFT) service. Customers will still receive a SMUD bill for their records, and their checking account will be automatically debited on the due date of the bill. This service is free of charge and customers can enroll by contacting the SMUD Customer Service Department (1-888-742-SMUD (7683) or e-mail. The EFT form is available online ([www.smud.org](http://www.smud.org)).
  - SMUD has 18 pay stations located through-out the Sacramento vicinity. Nine in central Sacramento; one in North Sacramento; two in North Highlands, Rio Linda; one in Fair Oaks; one in Carmichael; one in Citrus Heights; one in Rancho Cordova; and two in Elk Grove/Galt. If annexation moves forward, SMUD will provide additional pay stations as needed to accommodate the newly annexed customers in Yolo County.
  - One of the pay stations is located in the SMUD main office, the Customer Service Center that is located at 6301 S St. This central location also provides convenient access from the freeway (off Highway 50) as well as from public transportation such as light rail and bus. The services available at the Customer Service Center includes a 'walk-up' window to a customer service representative, direct phones lines to the billing department, drop box payments, kiosks with access to employment information, and various displays for energy efficiencies and lighting demonstrations.
3. **Meter Reading:** To assist customers in coordinating meter access, a meter reading schedule is conveniently available on the SMUD website. During routine meter reading, meter readers conduct visual inspection of electrical panels for obvious safety hazards. Meter readers input more than 500,000 meter reads per month and have an accuracy rate of 99.97%. All accessible meters are read, and only on a few occasions are meter reads estimated, most of which are due to locked gates or inaccessible meters. For meters that are routinely inaccessible or difficult to read, Electronic Radio Transceiver (ERT) meters are installed for remote reads.
4. **Ombudsman:** It is important to SMUD that customers receive an electric invoice that is timely and accurate. This is the reason why SMUD continues to maintain an extremely high billing accuracy of 99.4% as well as being able to print invoices within two days after a meter is read. To maintain a high percentage of accuracy and timeliness, the District's sophisticated billing system performs several checks and edits to validate the reads prior to printing the invoices. Any bills that fall outside the edit parameters are then reviewed by a dedicated staff to quickly correct any exceptions before the bill is sent out.

If a customer thinks a bill is inaccurate, SMUD has an Ombudsman Program to investigate the concern. A customer can ask for a formal investigation, which could include an in-depth analysis on their energy usage pattern, a meter check and an energy efficiency inspection. If no SMUD-related problems show up, the customer may request a hearing. A SMUD ombudsman will work with the customer and make every effort to resolve the billing dispute in a timely manner. All inquires are responded to within 48 hours. This program has reduced unresolved billing disputes by 75%. The goal is customer satisfaction as well as to help customers know that every effort is being made to ensure the usage in the SMUD bill is correct.

5. **Energy Technology Center:** SMUD offers more than 60 workshops per year in energy education to all customer segments on lighting, HVAC, architecture/construction, industrial/manufacturing technologies, and whole building sciences. Also consultation in energy design is provided to all customers through appointments or walk in to help ensure a safe, and environmentally responsible new construction or remodel of residential and commercial buildings. The District also participates in school outreach to local and diverse communities providing electrical safety and energy education.
6. **Interactive Voice Response System (IVR):** SMUD offers an IVR system that is designed to provide customers an alternative channel to manage their account(s), obtain energy conservation and program information, conduct transactions, and communicate with SMUD twenty four hours a day, seven days a week. There are currently 20 automated transactions that are available on SMUD's IVR including: account balance and last payment information, request a move out, make pay installments, update phone number, report outages, pay by check, enter meter read, pay station information, SMUD office location, program information and enrollment in Greenergy®, Air Conditioning Load Management (ACLM), and HomePower. Through a third party vendor, SMUD also offers immediate on-demand access to interpreters for customers that do not speak English. During Contact Center business hours a customer can request a translator for over 150 languages.
7. **Power Theft/Revenue Protection Program:** The Power Theft/Revenue Protection program protects customers by collecting on unbilled revenue due to power theft. The dollar losses caused by energy thieves are ultimately put on the shoulders of the honest customers. A power theft fee is imposed to those who are caught stealing power so that paying customers do not pay for the power theft. Power theft is hazardous, not only exposing the person committing the crime to fire danger or electrocution, but also putting innocent children and family members at risk as well as jeopardizing the safety of District employees and private electricians. SMUD cooperates with law enforcement to aggressively detect and pursue power theft in both residential and commercial locations.

## Residential Energy Efficiency Programs

Energy efficiency programs for residential customers constitute an indispensable component of SMUD's overall mission to meet the electricity and energy services needs of its customer-owners safely, dependably, economically, and in an environmentally responsible manner.

SMUD's energy efficiency programs benefit our customers and the Sacramento community every day. Shade trees cool and beautify neighborhoods, customers utilize tools and information from SMUD on how best to manage their electricity use; and customers take advantage of SMUD rebates on energy-saving appliances or equipment for their homes. Together, the residential energy efficiency programs form an important part of the dividends our customers receive from a community-owned utility, which is governed by an elected Board of Directors.

Over the past two decades and long before legislative mandates required private utilities in California to implement energy efficiency programs through a Public Goods charge, SMUD built a national reputation as a leader in energy efficiency. SMUD recognized that this resource represented one of the least-cost, cleanest, and most reliable sources of energy. As a result, SMUD implemented strategies to meet a significant portion of the growth in the region through

energy efficiency programs. With the cooperation and participation of customer-owners throughout the community, this strategy has proven to be extremely successful.

SMUD currently operates seven major residential energy efficiency programs covering a wide array of technologies and measures designed to assist our residential customers. These are described below.

- 1. Shade Tree Program:** This is one of SMUD's most popular and long-standing programs, and one that has won numerous local and national awards. The purpose of the Shade Tree Program is to plant trees that will directly shade buildings, thereby reducing summer air conditioning loads. A secondary, long-term objective is to create an urban forest that will mitigate the summer heat-island effect. Other long-term objectives include improving the region's air quality, enhancing the aesthetics and quality of life in the region, and promoting a sense of community spirit and cooperation.

The Shade Tree Program is implemented on a cooperative basis with the Sacramento Tree Foundation (STF). A non-profit community-based organization, STF's mission is to improve the quality of life in the Sacramento area by inspiring and motivating the community to plant and care for a healthy urban forest. The primary objective of the Shade Tree Program, also known as "Sacramento Shade," is to provide residential (and small-business) customers with free shade trees. When strategically sited and mature, these trees will reduce air conditioning needs by up to 40%.

In addition to Sacramento Shade, SMUD funds another urban heat-island mitigation effort called "Community Shade." SMUD offers free trees for planting in public areas such as parks, playgrounds, and schools. These trees can provide additional indirect cooling of the urban heat island as well as help beautify public places.

The Shade Tree Program was initiated by SMUD in 1990 at a time when SMUD was embarking on a massive buildup of its energy-efficiency resources. Coincidentally, the Sacramento Tree Foundation (STF) was establishing a goal of planting one million trees. SMUD and STF formed a partnership to leverage their common goals, and SMUD agreed to fund a program that would result in planting 500,000 trees. For SMUD, the trees would shade homes, schools, and businesses, reducing their cooling requirements and electric bills. Through the end of 2004, approximately 364,000 trees have been planted at 120,000 residential homes and another 12,000 trees have been planted through Community Shade in public community areas. Together, these trees represent about 76% of SMUD's long-term goal of 500,000 trees. By the end of 2004, shade trees were saving an estimated 3 MW and 7.4 million kWh per year in direct cooling load.

- 2. Energy Advisory Services:** The Residential Energy Advisory Services Program is designed to provide educational assistance and advice to help residential customers improve the energy efficiency of their homes. SMUD's 500,000-plus residential customers have a wide variety of energy-related needs and concerns. The Residential Advisory Program offers a broad range of educational, advisory, and technical assistance services provided through a variety of channels to match these needs. Additionally, the program provides information on SMUD's other popular energy efficiency rebate programs for appliances,--lighting, equipment, windows, insulation, and solar photovoltaic (PV) cells.

The program emphasizes energy awareness and education through channels such as the Energy Answer Line, SMUD web site, customer heating and cooling seminars, and participation in local fairs and expos. Customers can receive more comprehensive assistance through both the on-line Home Energy Analysis and mail-in audits. Also, the in-home energy audit is offered for specific needs customers--those requesting a personalized service, and customers with high bill issues. These specialized home audits offer customized evaluations of energy-usage patterns, specific suggestions for ways to save energy, and provide free low-cost energy-efficiency measures (switch and wall outlet gaskets, compact fluorescent light bulbs (CFLs), and electric water heater blankets).

- 3. Equipment Efficiency Program (Energy Efficiency Rebates):** The purpose of the Residential Equipment Efficiency Program is to increase the energy efficiency of customer homes by improving the efficiency of their building shells and heating and cooling equipment. The program encourages the manufacture, availability and installation of products to increase a home's energy efficiency. Over the past two decades, the Equipment Efficiency Program have influenced the purchase and installation of many thousands of high-efficiency central air conditioners and heat pumps, attic and wall insulation, shade screens, and many other energy-efficiency measures in Sacramento residences. Various configurations of rebates, financing, education, and advertising are the primary drivers of these programs. In 2004, SMUD invested over \$15,026,170 in energy efficiency programs for its customers.

The program currently promotes the following energy-efficiency measures through contractor and consumer rebates, as well as financing:

- Central air conditioners and heat pumps
- Attic insulation
- Duct sealing
- Wall insulation
- Windows
- Insulated siding
- Whole-house exhaust fans

Where applicable, ENERGY STAR® specifications define the base level of efficiency for qualifying measures. Marketing, consumer education, and financial incentives will continue to be used to encourage consumers to purchase and install these products. SMUD partners with local contractors and retailers who must meet participation-eligibility requirements. A participating contractor is permitted to offer the program's financing and rebates to customers; retailers provide rebate applications to purchasers.

To the extent possible and in order to have a bigger and more lasting impact on the market, SMUD coordinates efficiency levels and rebate amounts for these measures and products with the other major California utilities. Program marketing is also coordinated with other utilities around the country through the Consortium for Energy Efficiency's (CEE) Residential HVAC Initiative and with the U.S. DOE/EPA's ENERGY STAR® labeling program and "Cool Change" marketing campaign.

**4. Pool & Spa Efficiency Program:** The purpose of this program is to help customers use their pool/spa filtration equipment more efficiently, to operate the equipment off peak, and to install efficient pool pumps and motors when replacing equipment. The Pool & Spa Efficiency Program is one of SMUD's longest-running energy services programs. The program consists of two complementary initiatives listed below.

- **Shift Energy Usage** – Marketing channels are used to encourage residential customers with swimming pools and/or spas to use them efficiently and to operate pool filter pumps and sweeps during off-peak hours (i.e., other than 1 to 9 p.m.). Time-clock trippers are provided free of charge to customers upon request.
- **Improve Efficiency** – Incentives for the promotion and installation of high-efficiency single-speed and two-speed pool filtration pumps and motors are provided. High efficiency pool pumps and motors offer significant, permanent, and cost-effective energy-savings and peak-reduction potential in both new and retrofit applications.

The SMUD effort in this program will have the added benefit of educating pool and spa industry service and sales personnel in the benefits of pool pump and motor improvements.

**5. New Construction (Advantage Home) Program:** The Residential New Construction Program provides financial incentives to production homebuilders for the construction of homes that significantly exceed California's Title 24 Building Energy Standard cooling requirements. To qualify for the incentive, each home must meet established eligibility requirements to meet the performance requirements of the current energy code. Starting in 2004, Roseville Electric joined SMUD in offering the same program. Both utilities promote the program under the name "Advantage Gold" Home.

During the past decade, the Advantage Home program has captured a significant share of the booming residential new construction market in the region and has resulted in raising the "base" efficiency level of all homes as builders and contractors have implemented construction practices that promote higher insulation levels and tighter duct systems.

In October of 2005, the next generation of building efficiency standards developed by the California Energy Commission will become effective. These standards will raise the bar on minimum energy efficiency requirements in new homes and will effectively mandate many of the measures that are currently included in the Advantage Home program and in many other new construction programs around the state. In anticipation of these new standards, SMUD will be revamping its program in mid-2005, ahead of the standards and well ahead of all other utilities in the state.

**6. ENERGY STAR® Appliance Program (Energy Efficiency Rebates):** The purpose of this program is to increase the market penetration of high-efficiency household appliances. The program encourages the manufacture and sales of these products. Since the early 1990s, the Appliance Efficiency Program has influenced the purchase and installation of tens of thousands of high-efficiency refrigerators, clothes washers, room air-conditioners, and dishwashers in residences. The program has also encouraged the removal and recycling of over 70,000 inefficient refrigerators. A wide variety of channels and marketing strategies encompassing rebates, education, and advertising have been utilized to promote this program to customers.



The program currently focuses on clothes washers and room air conditioners by offering rebates. It also promotes the purchase of other ENERGY STAR®-qualified household appliances (refrigerators and dishwashers) through ENERGY STAR® promotions. SMUD partners with retailers to offer mail-back consumer rebates as a further incentive for purchasing clothes washers and room air conditioners. In order to have a bigger and more lasting impact on the market, SMUD also coordinates qualifying efficiency levels and rebate amounts for these appliances with the other major California utilities. Program marketing is coordinated with other utilities around the country through the CEE's Super-Efficient Home Appliance (SEHA) Initiative and with the U.S. DOE/EPA's ENERGY STAR® labeling program.

7. **ENERGY STAR® Lighting Program:** The purpose of the Residential ENERGY STAR® Lighting Program is to increase the market penetration of high-efficiency light bulbs and fixtures in households. The program encourages increased long-term demand for and manufacture availability and sales of these products. Since the 1980s, SMUD's educational and promotional efforts, along with similar utility programs throughout the country, have contributed significantly to the transformation of the residential-lighting market. For example, in just the last few years, Compact Fluorescent Lamps (CFLs) have made significant inroads into the incandescent-bulb sales market. These efforts have pushed the manufacture of better quality, more consumer-friendly lighting products--electronic rather than magnetic ballasts; immediate start, no-flicker operation; lighter weight and smaller size; and improved lumen output and color rendition. As these "state-of-the-art" CFL models have come to the marketplace, prices have dropped significantly, from a standard of \$18-\$20 10 years ago to under \$5 today in some mass-merchandise retail outlets. SMUD and other utility surveys indicate growing awareness and use of CFLs by consumers.

Marketing, field services, consumer education, and product rebates are used to encourage consumers to purchase these products. SMUD partners with retailers and lighting-product manufacturers to promote energy efficient light bulbs, as well as fixtures and specialty bulbs. The main component of the ENERGY STAR® lighting program is a cooperative marketing fund. The fund is used to leverage the resources of CFL manufacturers and retailers, encouraging them to take the lead, over the long-term, in promoting efficient-lighting products. This approach allows the program to directly involve the creativity of retailers and manufacturers in marketing the program.

SMUD also coordinates marketing events, products, and occasional rebates with other major California utilities to have a bigger and more lasting impact on the market. Several other program initiatives and related activities are utilized to support the primary objectives of this lighting program:

- **Program for Evaluation and Assessment of Residential Lighting (PEARL)** – SMUD is a co-sponsor and founding member of the Program for Evaluation and Assessment of Residential Lighting. PEARL is a group of utilities sponsoring third-party laboratory testing of ENERGY STAR® lighting products to independently verify compliance.
- **Pacific Northwest National Laboratory (PNNL) Screw-Based CFL-Reflector Lamp Technology Procurement** – SMUD is an interested participant in this effort by the U.S. Department of Energy's (DOE) PNNL and sponsored by the NEEA. The purpose of the technology procurement is to encourage manufacturers to develop high-quality CFL

reflector lamps that will be integrally designed for existing screw-based recessed-lamp fixtures. When one product became available in mid-2004, SMUD encouraged retailers to purchase these products for retail sale. A second product from a different manufacturer will be available in 2005.

- **Rebates for ENERGY STAR®-Labeled Ceiling Fans and Ceiling-Fan Lights** – SMUD participated in developing this specification and participated in the first promotional program statewide in the summer of 2002. SMUD continues to develop a market for this product by offering rebates through lighting fixtures and home-improvement stores.
- **Lighting Manufacturers Working Group** – Lighting fixture manufacturers, their trade association American Lighting Association, the CEE, ENERGY STAR®, and interested utilities have initiated a cooperative effort to develop common program guidelines that will bring to market integrally designed CFL lighting fixtures.

## Low Income and Special Needs Customer Programs

Assistance to low-income and special needs customers is an important aspect of SMUD's programs and services. Through the years, SMUD has served tens of thousands of these customers with a variety of programs. As a municipal utility, SMUD's policies and priorities are those of its customers, and are based on SMUD's commitment to its core mission: 1) reliability, 2) low rates, 3) community involvement, and 4) environmental quality. The programs available to Low Income and Special Needs customers are designed and implemented with these objectives in mind. Programs range from weatherization services, to electric rate discounts, to assistance programs for bill payment. These are described below.

1. **Energy Assistance Program Rate (EAPR):** The purpose of this program is to help reduce the energy cost burden on low-income customers. This is accomplished by providing a 35% discount for first tier (Tier I) baseline energy usage and a 30% discount off the monthly service charge and Tier II and Tier III energy usage. The EAPR discount is provided to customers meeting program guidelines that are based on a combination of income and household size.

Since 1995, SMUD has contracted with the California Department of Community Services and Development (DCSD) for services to process customer applications for enrollment in EAPR. Customers remain enrolled on the rate for two years, with re-certification required to continue enrollment for another two years. Participants receive a renewal notice after eighteen months of enrollment, to allow sufficient time for re-enrollment and prevent automatic removal of the customer from the rate. At the end of 2004, over 39,000 customers were enrolled to receive the EAPR discount.

2. **Medical Equipment Discount Rate (MED Rate):** The purpose of the Medical Equipment Discount (MED) Rate is to help reduce the cost of the energy through a discounted electricity rate for customers requiring the use of an electrically powered medical device.

The MED Rate provides monthly bill discounts of 35% for first tier (Tier I) baseline energy use and a 30% discount on usage above and beyond Tier I for residential customers with a full-time resident of the household requiring regular use of an electrically powered medical device that is essential to sustain life or relied upon for mobility. Additionally, MED Rate

customers receive a 30% discount on the monthly service charge. Conditions for qualifications may also include customers who have special heating or air conditioning needs due to medical conditions such as paraplegia, hemiplegia, quadriplegia or customers with multiple sclerosis. The application requires signed verification by a medical doctor. In 2004, over 7,400 customers were enrolled to receive the MED Rate discount.

Customers qualifying for both MED Rate and EAPR receive a discount of 55% of the energy charges for Tier I, a 30% discount for energy use beyond Tier I and a 50% discount on the monthly service charge.

- 3. EnergyHELP and Bill Assistance:** The purpose of SMUD's low-income bill assistance activities is to help with payments on electricity bills on behalf of needy customers. Bill assistance is provided from either local community organizations or through customer donations.

Bill Assistance activities are comprised of two primary components—Agency payments and EnergyHELP. Agency payments are received from either private or public funding sources while EnergyHELP is supported by customer contributions. Customer contributions have helped fund bill assistance for residential SMUD customers since the mid-1990s through direct donations to The Salvation Army. In Fall 2003, SMUD introduced the EnergyHELP program, which is also funded by customer donations, to reach even more customers through expanded community outreach in coordination with two local community organizations that serve low-income and multi-cultural members of the District's service area.

The EnergyHELP program offers the opportunity for residential SMUD customers to contribute monthly on their SMUD bill to a bill assistance fund for residential customers. The purpose of the fund is to help qualifying low-income households in the SMUD service area avoid disconnection of their electricity service for nonpayment, or to help reconnect electricity service if it has already been disconnected. The contributions made by customers to the EnergyHELP fund are directed to two non-profit IRC § 501(c)(3) community agencies that handle the distribution of the funds directly toward SMUD bill payments for needy customers. SMUD pays the administration fees to the community organizations from the Public Good budget, which allows 100% of the customer donations to be used for customer bill assistance.

The two partner community agencies, The Salvation Army and Sacramento Food Bank were selected through a competitive review process. Each agency meets with customers and determines eligibility for emergency bill assistance based on household income and the past due balance on their SMUD bill.

- 4. Low-Income Weatherization Services:** The purpose of this program is to provide energy-efficiency services to customers who need help to reduce their electricity bills while maintaining the safety and comfort of their home environment. This program seeks to help low-income customers through direct contact and to partner with other organizations to reach more customers and provide more services.

The program offers qualified low-income residential customers the opportunity to have their homes or apartments weatherized at no cost. Energy education is provided to help customers reduce their energy usage and lower their utility bills. Services are provided through energy audits and through partnerships with other local organizations.

The low-income weatherization program encompasses and provides a variety of services. These are:

- **In-House Weatherization Services:** Provides weatherization services through SMUD audits and contractors. The program specifically targets eligible customers living in electric-heat homes and provides for the installation of the following measures:

Attic insulation	Water-pipe insulation
Weather-stripping	Compact-fluorescent bulbs
Low-flow showerhead	Minor home repair
Water-heater insulation	Fluorescent torchieres
Faucet aerators	Shade screens
Refrigerators	

Weatherization services through Community Resources Project (CRP): Through a partnership with CRP, SMUD delivers weatherization services in conjunction with the State of California's Low Income Home Energy Assistance Program (LIHEAP). This partnership leverages federal funding through an existing State contract with a local community based organization, and allows services to be provided to gas-heat low-income customers at minimal incremental cost. Services provided by CRP include solicitation, site assessment, installation and education, and are provided to both gas and electric-heat homes. Measures that qualify for SMUD funding provide electricity savings to the customer and include:

Attic insulation	Water-pipe insulation
Weather-stripping	Compact-fluorescent bulbs
Low-flow showerhead	Fluorescent-torchiere lamps
Faucet aerators	Minor home repair
Water-heater insulation	

- **Community Partners:** SMUD partners with local groups, non-profit organizations, and local public agencies, such as the City of Citrus Heights, to rehabilitate and weatherize low-income homes as a community benefit. Partnerships with other organizations provide the basis for delivery of the program.
- **Energy Education Services:** Workshops are organized through coordination with community groups and multi-family management and tenant groups. To maximize the educational experience, interpreters may be used to translate the workshops into the native languages of attendees, such as Russian, Chinese, Hmong, Spanish, Vietnamese, etc. For ease and efficiency of delivery, educational seminars are also provided to customers, regardless of income level. In 2004, for example, 75 workshops were conducted, reaching over 1,000 customers.

- **Crisis Intervention/Community Agency Activities:** The purpose of this initiative is to quickly respond to referrals by community agencies to assist low-income customers in crisis. SMUD services are limited to energy-related measures and repairs. The service provides for energy-related health and safety services not available to customers in need through other organizations. For example, heat stress is a potentially fatal condition, especially for elderly persons. This program allows SMUD to assist customers in extreme need by loaning a portable evaporative cooler to provide cooling, while efforts are underway to repair or replace a customer’s broken air conditioning.
- **Community Outreach:** The Low Income Weatherization Program defines outreach as efforts to create and maintain relationships with community service organizations. We specifically seek out those organizations whose clients may be potential recipients of our services. We initially contact organizations by phone, and then meet with them in the community to begin building relationships. We can then work together to raise awareness and provide applicable services to community residents.
- **Community Housing Coalition:** This is an innovative partnership initiated by the Community Partners program in 1999, and is designed to specifically serve the low-income, at-risk senior population. The Community Housing Coalition is made up of community-based organizations, service clubs, governmental agencies and other utilities in the area. The members work together to provide a wide variety of services to low-income seniors. The Coalition is able to help individuals with day-to-day needs, including home rehabilitation, energy efficiency measures, medical equipment needs, home access for the disabled, and social services. Through the teamwork of the many agencies involved, multiple problems can be addressed by the proper agencies. In addition, by working together with other Coalition members, funds can be leveraged and much more can be accomplished for each customer.

## Residential Solar (Photovoltaic) Programs

SMUD is a national leader in the development and implementation of solar PV technology and leads all utilities in the United States with more than 8.3 MW of installed solar panels on area buildings, homes, businesses, and parking structures.

In the residential segment, SMUD promotes and supports the installation of solar PV systems on existing customer homes by working with third-party contractors and installers. For new homes, SMUD works directly with developers and builders to encourage the installation of roof-integrated solar PV systems in new developments. These programs are described in more detail below.

1. **Residential Retrofit Solar PV Program:** Nearly a decade ago, SMUD initiated its PV Pioneer I program by designing and installing solar PV systems on residential structures in the Sacramento area. SMUD owned these systems, received the electrical output, and took full responsibility for operation and maintenance. This arrangement afforded great flexibility, promoted rapid technological advancement, and enabled SMUD to develop standardized, low-cost installation methods. In 2001, SMUD introduced the Solar PV Pioneer II program where customers, rather than SMUD, own the systems. As a result, homeowners are able to take advantage of “net metering,” where SMUD pays retail prices

for energy produced by the PV system when the system is generating more electricity than the home requires.

SMUD offers rebates to residential customers who purchase solar PV systems from vendors who are on a SMUD-approved master list of contractors. These contractors are responsible for marketing and sales, system design and installation, and customer service. SMUD staff conducts quality assurance inspections for each system, enters into an interconnection agreement with each customer, installs the required meters, and initiates net billing services. In 2004, SMUD installed 53 systems representing 146 kW of PV power through this program.

- 2. Residential New Construction Solar PV Program:** In 2002, SMUD began working with homebuilders to offer PV systems as standard or optional equipment in several developments in the Sacramento area. SMUD and local builders have partnered together to work on the Zero Energy Home (ZEH) concept, which is a program initiated by the U.S. Department of Energy to work towards design and construction practices that allow homes to produce as much energy as they use on an annual basis.

SMUD has developed partnerships with two builders in the region, Premier Homes and Morrison Homes to construct and offer ZEH homes. These homes feature the latest in energy efficiency equipment, tighter building and air distribution systems than standard homes, and solar tiles integrated into the roof to generate electricity. One of the first ZEH subdivisions constructed under this program is Premier Gardens where the combination of energy efficiency and solar tiles can reduce annual energy bills by as much as 60%. More than 50 homes have been completed in this development, with another 50 or so under construction.

Current ZEH homes generally feature efficient ENERGY STAR® appliances, efficient fluorescent lighting systems, low air infiltration, ENERGY STAR® windows, a 90% efficient furnace, ducts buried in attic insulation, a tankless water heater, and a 2-kW PV system.

## Residential Energy Load Management Program

As indicated previously, SMUD operates a number of load management programs designed to help SMUD reduce electrical demand when an electrical system emergency occurs during hot summer days. These programs are currently deployed only in emergency situations. The oldest and largest of these programs is the residential Air Conditioner Load Management (ACLM) program described below.

- 1. Air Conditioner Load Management Program:** This program is marketed as the Residential Peak Corps, and is one of the first and largest dispatchable load management programs in the country. Initiated in 1977 as a pilot program, it has since grown to include approximately 100,000 participants representing an estimated 40% market penetration.

The program runs from June 1 through September 30, providing emergency energy load curtailment through remote cycling of participating customers' air conditioners. Radio-controlled switches, mounted on and connected to the air conditioners, are "dispatched" by SMUD's Emergency Management Center when predetermined emergency conditions exist.

Depending on the conditions and the nature of the dispatch, the program is capable of providing between 100 and 175 MW of peak demand reduction.

Residential customers can choose to participate in the program in one of three options that provide varying degrees of cycling per hour. SMUD provides a nominal monthly bill discount to participants, as well as a per-cycling event payment, both of which increase with the cycling level selected by the customer. One of the more compelling and attractive aspects of the program is that it directly involves the community in supporting the District's operations and provides a means for customers to participate and help avoid or avert interruption of load during system emergencies.

## Residential Retail Products and Service Programs

SMUD also provides several value-added programs and services to its residential customers. These programs were developed with customer input and designed to meet their needs in specific areas, while enhancing the level of services offered by SMUD to its customer-owners. These are described below:

- 1. Residential Greenergy® Program:** Greenergy® is a “green energy” program that allows customers to pay an additional monthly charge on their bills for SMUD to buy energy that is produced from clean, renewable, energy resources. This gives SMUD customers the opportunity to take an active role in helping SMUD be environmentally friendly, to help diversify SMUD's resource mix, and to contribute to a better environment. The program allows SMUD to offer additional options for customer choice and to continue SMUD's national leadership role in green pricing programs.

The Greenergy® program was introduced in 1997 to support SMUD's goal to improve the environment and economic welfare of the Sacramento region and to address customers' growing concerns about the environment and healthy lifestyles. The current customer pricing options are:

- 100% renewable for \$6/month—matches 100% of monthly electricity needs with renewable power
- 50% renewable for \$3/month—matches 50% of monthly electricity needs with renewable power

In addition to giving customers the choice to select renewable resources for their energy purchases, SMUD commits to matching 40% of all Greenergy® premiums by building new, SMUD-owned renewable generation. Recent projects for Greenergy® include the Arden Fair Solar Parking structure (@\$96,000 invested) and three Vestas turbines that were added to the Solano Wind Farm in 2003 (@\$6.991M committed).

Greenergy® customers are served through a mix of electricity generated from the Kiefer Landfill Plant (landfill gas), the Solano Wind Farm, Slab Creek (small hydro) and PPM Wind Contracts. Additionally, the District may utilize “green tags,” or Tradable Renewable Certificates, from electricity generated outside the District boundaries, as necessary.

Almost 30,000 residential customers have signed up for the program to-date, making this the fourth largest green pricing program in the United States based on enrollment.

- 2. In-Home Electrical Repair (HomePower) Service:** The purpose of the HomePower Service (HPS) is to provide residential customers with the convenience of calling SMUD for minor in-home electrical problems. Participating customers have the security of knowing whom to call for residential electric repairs and the confidence that a qualified, licensed electrical contractor will perform the repairs through SMUD's HPS program.

Residential customers who enroll in the optional HPS pay a \$5.95 monthly fee. The HPS fee appears on the monthly SMUD electric bill for owner-occupants, while landlord-owners receive a separate bill for HPS participation for properties that are not owner-occupied. Eligible customers receive diagnosis of residential electrical problems and repair or replacement of their home's internal electrical wiring and certain related electric system components that fail or become damaged due to normal wear-and-tear. HPS is offered through an initial 12-month customer agreement that converts to a month-to-month subscription after the first year of service. There is an annual \$500 repair limit per residential customer based on the calendar year. Customers receive a one-year warranty (on parts and labor) for services provided through the program. SMUD pays the independent electrical contractors directly for the HomePower service work. SMUD goes out to bid every 1-2 years to identify local, qualified electrical contractors to diagnose and perform the repairs.

Repairs not covered by the HPS (such as additions, upgrades, code violations or pre-existing conditions), or repair costs that exceed the annual \$500 allowance, are offered at a 15% discount from the contractor's standard market rate, except service panel work, which is offered at a 20% discount. The customer is responsible for payment directly to the electrical contractor for non-covered services if the customer chooses to have the non-covered electrical work performed.

To-date, more than 16,000 customers have enrolled for this service and measured satisfaction rates for services performed exceed 95%.

- 3. Moving Connections Program:** SMUD Moving Connections is a customer service program that allows residential customers to sign up quickly and easily with multiple service providers for electric, gas, local and long-distance phone service, cable/satellite TV, Internet access, and newspaper/other media publications with one phone call to SMUD.

This service is accomplished through a third-party contract with a service provider, Allconnect, and offers a high level of customer value and convenience at no cost to SMUD's customers. SMUD Moving Connections works as an extension to SMUD's contact center by offering Contact Center Representatives the ability to transfer customers to Allconnect immediately after completing a move-in or transfer for a residential customer.

Allconnect offers customers an unbiased selection of service providers that allows customers to choose the best plan(s) for his/her needs. By enabling residential customers to improve their moving experience, SMUD can enhance its relationship with, and improve its service to, residential customers. The SMUD Moving Connections service fits well within SMUD's existing contact center processes. By offering customers the option to sign up for multiple services after completing a move-in or transfer, SMUD representatives can provide a high level of customer service and convenience to residential customers.



- 4. Power Protection Services:** The Residential Power Protection Services (PPS) program is designed to protect electronic equipment and appliances from harmful transient voltage surges that originate from sources external and internal to the home. This is a fee-for-service program offered to residential customers with single-phase electrical service not exceeding 200 amps at the service panel. SMUD offers customers meter-based, whole house surge protectors as well as plug-in surge protectors. A manufacturer's warranty is offered that covers against damage to electronic equipment or appliances.

Residential customers can enroll in the Power Protection Services whole-house protection by agreeing to pay a monthly leasing fee of \$6.95 for each meter-based system. The whole-house system is designed to protect the customer's electronic equipment and appliances from surges that originate outside of the home (lightening, high-wind, etc.) Customers can sign up for a six-month term via phone or by mailing in a response card and receive the first three months free. After six months, enrollment is on a month-to-month basis until cancelled.

For customers who wish to obtain the greatest level of protection against surges, SMUD provides point-of-use surge protection units. These units protect against surges that originate from within the home or that enter the home via cable TV or telephone wires. Customers can purchase point-of-use plug-in surge protectors for \$39.00 each.

## Commercial Programs and Services

### Customer Care

- 1. Account Management Program:** SMUD's Commercial Services Department strives to meet and exceed the unique needs of its commercial customers through the delivery of products and services that are specifically tailored for large, medium and small businesses. To this end, the District has established a Commercial Account Management Program that provides customers with an Account Representative who acts as a liaison between commercial customers and SMUD, ensuring that solutions are provided for commercial customers' needs. The Account Representatives, working in cooperation with Energy Specialists, Distribution Engineers and Distribution Planners to provide the following services to commercial customers:

- Serve as a single point of contact to connect customers with SMUD resources
- Facilitate the application process for new distribution service connections, reliability enhancements and power quality improvements
- Work to optimize customer's energy operations through SMUD's wide range of programs and services
- Analyze businesses' electric bills and recommend the best rates and services to reduce electric bills
- Educate commercial customers on energy efficiency. Act as an energy expert to help customers understand and evaluate energy choices
- Provide energy management products and services, including energy audits, energy efficiency rebates, energy tracking software and LEED certification for green buildings

- Provide new construction services, engineering and architectural expertise for customers who are expanding operations or moving to the area
- Resolve billing questions and payment arrangements
- Negotiate terms and conditions for custom tailored contracts that meet the unique needs of commercial customers
- Offer ongoing technical seminars and energy-related workshops in the Energy and Technology Center. Provide energy experts who can explain how to apply new technologies and production processes to make the customer's operation more profitable.
- Provide environmental services related to facility management and emission reductions

SMUD's commercial customers are segmented into four sections based on revenue. Key Accounts are the top 150 customers and are serviced by seven Key Account Managers who are on call 24 hours a day. Major Accounts make up the next 350 customers and are assisted by five Major Account Representatives. Middle Accounts make up the next 1,000 customers and are supported by eight Middle Account Representatives. The remaining commercial accounts are cared for through the SMUD Commercial Call Center, which is described below. The Account Representatives and Energy Specialists endeavor to maintain the highest levels of customer satisfaction as they assist commercial customers in managing their energy usage and energy costs.

2. **Commercial Call Center:** The Commercial Call Center was established in 2002 to bring a higher level of customer service to SMUD's commercial and industrial customers. Business customers previously were routed through the Residential Call center. In an effort to improve customer service, SMUD established this new call center to respond to requests from local commercial business customers. The customer is provided a one-stop shop for their energy and billing needs. Last year, the Commercial Call Center received almost 62,000 customer calls and achieved a customer service satisfaction rate of 93%.
3. **Energy Technology Center:** SMUD offers energy education on lighting, HVAC, architecture/construction, industrial/manufacturing technologies, and whole building sciences through over 60 workshops per year to all customer segments. Also, consultation in energy design is provided to all customers through appointments or walk in to help ensure a safe and environmentally responsible new construction or remodel of commercial buildings. The District also participates in school outreach to local and diverse communities by providing electrical safety and energy education.

## Commercial Energy Efficiency Programs

For over two decades, SMUD has worked with its commercial customers to provide a wide variety of initiatives to assist them in learning about, purchasing, and installing energy-efficient technologies and measures. These programs have garnered SMUD a national and international reputation as a leader in energy efficiency programs and produced millions of kWh of savings for customers. SMUD's energy efficiency programs have provided real economic, environmental, and social benefits to the community including:

- Reducing customer's energy bills
- Increasing customer productivity

- A stronger local economy by encouraging the use of local contractors
- Reliable power at stable, reasonable rates
- Reduced emissions and pollutants

The Commercial & Industrial Energy Efficiency Programs of the District provide energy information, consultation, and financial incentives to commercial and industrial customers. Customers use these programs to implement new technologies or operating improvements to their businesses that reduce operating expenses and/or increase operating efficiency. SMUD Account Representatives and Energy Specialists work together with customers to identify energy-efficiency opportunities, evaluate proposals for efficiency improvements, and work with contractors to implement cost-effective improvements. The programs consist of a set of activities and initiatives that target specific customer segments, technologies, and market barriers. These activities are grouped into the following four areas, based on the means by which these programs are designed and marketed to commercial customers:

1. **Commercial Retrofit Improvement Program:** This program focuses on motivating customers and contractors to aggressively price and pursue cost-effective energy efficiency projects or operating modifications that result in energy bill savings to the customer, along with significantly exceeding the minimum requirements of the California energy code (Title-24). Incentives are generally provided for lighting, heating ventilation and air-conditioning (HVAC), refrigeration, and industrial process technologies, based on the energy savings and/or average peak demand reductions resulting from the retrofits. Depending on the customer and the nature of the project, incentives can be paid to the contractor or directly to the customer.

While this program is offered to all commercial customers, it is generally targeted at the medium to large energy users who have involved and complex retrofit construction projects — large offices, educational institutions, government buildings, grocery stores and supermarkets, large retail stores, refrigerated warehouses, and industrial customers.

Over the past two decades, the Commercial Retrofit Improvement Program has included a wide variety of initiatives developed to accomplish specific objectives or reach specific market segments. These initiatives highlight the ability of SMUD to adapt to and respond to customer needs, and to tailor its services to local business and economic conditions. Some examples of these initiatives include:

- **Cool Roofs:** The purpose of the Cool Roof Program is to reduce customer electricity peak demand and air conditioning energy load associated with high solar energy absorbed on the surface of roofs and rooftop ducts during the hot summer months. This program also serves to mitigate the overall urban heat island effect in the Sacramento area. This initiative was launched in 2001 to encourage the use of highly reflective and emissive roof coatings and materials in the commercial construction roofing marketplace. Subsequently, the Cool Roof program formed an alliance with the Sacramento roofing contractor community by providing incentives to commercial roofing contractors who install roofing products that are on the U.S. Environmental Protection Agency's (EPA) Energy Star® Roofing product list. The roofing products are applied to the surface of flat roofs of air-conditioned commercial buildings. This initiative has produced more than one million square feet of cool roof area per year since

its inception. Through seeding the market with incentives and educating contractors, the long-term objective of the program has been the transformation of the roofing market. The completion of this market transformation will occur with the enactment of the next generation of energy standards, which include the cool roof technology as a requirement. The 2005 version of these energy standards are expected to take effect in October 2005.

- **Resource Conservation Manager for School Districts:** Under this initiative, SMUD provided seed funding, technical assistance, and training, and then helped recruit a Resource Conservation Manager (RCM) position at each of four large school districts over the past six years. The RCM at each district is then tasked to work with teachers, students, and facility managers to provide educational materials and identify and achieve energy, water, and waste stream savings in school buildings. The RCM position pays for itself through the cost savings achieved from the energy reduction initiatives that are implemented. Additional savings are then invested in further energy efficiency activities or returned to the school district.
- **Building Controls Retro-Commissioning:** The primary goal of this initiative is to reduce overall building energy use by identifying low-cost/no-cost operational improvements for building controls and providing on-site training to building operators. A secondary goal is to guide the customer towards more far-reaching improvements, such as advanced operator software or replacement/upgrade of the building control systems and equipment.
- **Small Commercial Customer HVAC and Refrigeration Tune-Up:** This initiative uses a service contractor to check and correct refrigerant charge and airflow problems, as well as perform standard cleaning of refrigeration systems and rooftop air conditioners. This initiative is generally targeted at specific classes of small commercial customers including restaurants, convenience stores, health clinics, florists, and other similar, customers.
- **Compressed Air Initiative:** In conjunction with the national efforts by the Department of Energy and the CEE, SMUD has provided its customers with the skills and tools needed to identify air compressor inefficiency and misapplication, leakage, and to recommend system improvements. This initiative also facilitated compressed air system audits and recommendations, with projects eligible for retrofit incentives.
- **Vending Machine Controllers:** Using a passive infrared sensor, the vending machine controller completely powers down a vending machine when the surrounding area is unoccupied for a certain amount of time. The switch will turn the vending machine back on after a few hours (depending on ambient temperature), ensuring that beverages within the machine remain cold. During the past five years, SMUD installed over a thousand of these devices on vending machines in a wide variety of building types. As a result of this and other similar initiatives around the country, the CEE and the Department of Energy are working on a set of standards designed to build such “smart” control technology directly into new vending machines.

Another facet of this program is its educational and recognition initiatives, which are designed to provide information to commercial customers on energy efficiency opportunities, new technologies or products, as well as recognize those customers who have demonstrated significant achievements in energy savings or environmental benefits in their

facilities. These initiatives include direct individual customer education where commercial Energy Specialists and/or Account Representatives make presentations at customer sites. At the Energy and Technology Center, SMUD staff or invited subject matter experts provide seminars or instruction related to energy-efficient technologies and practices, proper maintenance practices, and other environmental or productivity related issues. Some examples of these initiatives include:

- **Lighting Design Assistance:** Commercial Services and the Customer Services Business Unit staff provide lighting assessments and design assistance to commercial and industrial customers who are implementing energy efficiency projects. In addition, the Energy & Technology Center provides several seminars and classes during each year, covering a wide variety of topics related to the application of energy efficient lighting systems in buildings.
  - **Building Operator Certification (BOC):** The BOC program provides energy efficiency education to building engineers and facilities personnel. Through the knowledge gained in the BOC program, graduates have been trained to understand and make adjustments to the equipment that improve operational and energy efficiency at their facilities.
  - **ENERGY STAR® Buildings Certification:** The ENERGY STAR® Buildings Certification initiative uses resources from the national ENERGY STAR® program to provide analysis tools for benchmarking and increasing the performance efficiency of buildings. SMUD customers have been the recipients of a number ENERGY STAR® awards as a result of this process.
  - **Business Environmental Resource Council (BERC) Awards:** SMUD supports the local BERC awards program, which recognizes businesses that have demonstrated outstanding achievement in reducing the environmental impact of their business activities, or are successfully adopting policies and promoting activities that lead to improvements in the environment.
2. **Commercial New Construction Program:** This program provides education, technical assistance, and design and installation incentives intended to encourage energy efficiency improvements in new commercial buildings during the design and construction phases of projects. The program promotes technologies and construction practices that exceed California's building energy efficiency standards (Title-24) by at least 10%.

The program targets architects, engineers, developers, general contractors, building subcontractors, and owners of public, corporate-owned, and mid- to large-sized privately owned buildings. Offerings include financial performance incentives, design incentives, design and planning assistance, commissioning and marketing support, and financial support for project feasibility studies and peer reviews. In addition, SMUD program staff provides educational seminars and classes and a variety of technical subjects related to commercial new construction.

Over the past decade, approximately 20 million square feet of new and renovated floor space were constructed under this program, including nearly all of the new major office buildings built during this period. The program has been marketed and promoted by SMUD as the Advantage Building program. Starting in 2006, SMUD will be implementing its

commercial new construction program in conjunction with the Savings By Design California statewide program.

- 3. Prescriptive Lighting Program:** This program seeks to obtain peak load reduction and energy savings in the hard-to-reach small commercial sector through the replacement of old lighting systems with energy efficient lighting fixtures and lamps. Because first-cost is a significant barrier in this market segment, the incentives in this program are designed to cover a significant portion of the cost of the lighting equipment installed, and are paid directly to the lighting contractors, who provide the primary mechanism for marketing and implementation of the program. Eligible technologies include T-8 lamps and electronic ballasts, de-lamping, compact fluorescent lamps, controls, LED exit signs and occupancy sensors. Incentives are paid per fixture or per item installed.

Prescriptive lighting incentives were first offered in the summer of 2001, funded by a grant contract with the California Energy Commission resulting from the energy crisis. The program was initially offered only to very small commercial customers with peak demands of 30kW or less in the commercial general rate class. However, because of the huge success of the program, SMUD has offered this program to commercial customers every year since 2002 and has expanded the program to include medium customers in the General and Middle Accounts (roughly 150 kW and below).

In 2005, SMUD also allocated additional funding for this program from its resource procurement budget by augmenting the public good budget allocation, as a cost-effective means of providing energy savings and load reductions in lieu of purchasing additional power from the open market.

- 4. Prescriptive HVAC and Motors Program:** The prescriptive HVAC and Motors program encourages the replacement or installation of high-efficiency air conditioners and motor systems by providing a simple per ton or per horsepower financial incentive to customers or contractors. This program also targets dealers and distributors of this equipment in the SMUD service area through marketing initiatives and personal contact. In 2006, this program will also provide direct financial incentives to the dealers to purchase, stock, and promote the installation of high efficiency equipment by contractors and customers who purchase equipment from them.

Prescriptive HVAC Replacement incentives are designed to promote and stimulate the market for high-efficiency package and split system HVAC units up to 20 tons. The program supports the CEE's national effort to establish higher efficiency levels as a standard practice and the ENERGY STAR® label's development, whose goal is to increase the efficiency of HVAC equipment manufactured and sold. The incentive amounts are designed to be sufficient to offset most of the incremental cost of the high-efficiency equipment over and above baseline or standard equipment.

Prescriptive motors incentives are provided for almost all motor sizes from 1 to 200 horsepower, and are eligible for prescriptive incentives based on meeting minimum CEE standards. The program is designed to promote high efficiency motor standards and capture the replace-on-burnout motor market where a system or motor evaluation may not be done. However, an opportunity to install a high efficiency motor exists, such as a contractor replacing a faulty fan motor, or a business replacing a process motor.

## Commercial Solar (Photovoltaic) Programs

For over a decade now, SMUD has been at the forefront of the growth and advancement in solar photovoltaic technology. SMUD's continued success in commercial and utility-scale deployment of grid-connected solar systems has kept SMUD a national leader in solar-electric generation. SMUD's established programs serve as models for other public and public-private solar programs throughout the state. The solar industry has grown to the point where commercial contractors are available to install systems on existing commercial buildings through an established and growing market process. SMUD continues to support and push the development of PV technology in the commercial market through its research and development efforts with Building Integrated Photovoltaic (BIPV) systems.

- 1. Commercial Solar Retrofit Program:** Throughout the 1990s, SMUD worked to create a local market for solar energy by purchasing systems itself or by selling customers turnkey systems at below-market prices. To foster the development of the emerging and growing private solar industry, in 2003 SMUD shifted from selling systems itself to supplying direct incentives for systems provided by private contractors. The long-term objective of this program is to sustain near-term demand for customer-owned, commercial-scale solar installations while moving toward a subsidy-free market.

SMUD offers rebates to commercial customers who purchase PV systems from vendors on SMUD's master list of approved contractors. The rebate can be used by itself or to augment the buy-down already available to SMUD customers through other state subsidy programs. Contractors on SMUD's master list are responsible for marketing and sales, system design and installation, and customer service. SMUD is responsible for: 1) ensuring that interconnection agreements are executed with customers, 2) the installation of meters, and 3) net billing.

- 2. Building Integrated Commercial New Construction Solar Program:** Solar systems for commercial customers have evolved from afterthoughts in building design to a "building integrated" design (BIPV). Today's solar modules look like structural or architectural exterior glass paneling. With much of the exterior of new commercial buildings faced with glass panels, it is natural to begin to integrate these surfaces with electricity-producing PV panels. SMUD has been working to support these innovative design concepts through its research and development efforts and, in 2003, the second phase of a major state government building project was completed in Sacramento, which utilized this technology. Amorphous silicon type solar panels are used to ring the penthouse of several buildings using the PV panels as an electricity-producing exterior wall. The output from these exterior panels feed electrical circuit inside the building's standard electrical supply enclosures.

## Commercial Load Management Programs

SMUD's commercial load management programs are designed to help SMUD reduce the high demand for electricity, typically experienced with heavy air conditioning loads on hot summer days. The primary program utilized to accomplish this objective in the commercial sector is the Voluntary Emergency Curtailment program. Two pilot programs were also introduced in 2001 in response to the critical capacity shortage projected for California, the Demand-Bid and Direct Load Control programs, marketed as PowerNet and PowerDirect.

1. **Voluntary Emergency Curtailment Program:** This long-time program relied on commercial, institutional, and industrial customers to voluntarily cut back predetermined loads within their facilities during emergency situations. SMUD staff contact facility managers when notified by Energy Operations. The program has approximately 100 customers of many different types who can typically provide between 45 to 70 MW of load reduction depending on the year and the season.
2. **Commercial & Industrial Demand Bid and Direct Load Control Programs:** These programs, marketed as the PowerNet and PowerDirect program, respectively, are voluntary, Internet-based load management programs that provide the opportunity for customers to bid load reductions in response to a price posted by SMUD through a computerized Web-based platform. Participants in PowerNet take voluntary, manual actions at their site to curtail load to fulfill their load reduction bid. PowerDirect participants select pre-programmed control strategies through an Internet gateway to allow their facility to automatically curtail load to respond to their load reduction bid. The programs are designed to:
  - Provide a reliable and economical source of load management and emergency resources spread across our customer base
  - Offer opportunities for both SMUD and the customer to participate in the market for load management
  - Offer new program concepts with innovative, price-responsive programs that provide customer choice and operational flexibility
  - Provide improved information on customer pricing, performance, and program participation through the use of Internet-based load management systems

SMUD sets a price signal in response to a need for economic dispatch based on day-ahead and hourly energy market prices, and for emergency conditions. The price(s) are posted on the “bid” site by SMUD when the market prices are attractive to the customer and to SMUD or when a need for load reduction exists. After the customer has provided a load reduction bid and the District accepts the bid, the customer then curtails their load for the hours specified in the bid.

The PowerDirect program controls building loads, provides price signals, notification of curtailment events, and settlement and verification through the same internet-based load management system as PowerNet. However, in this case the system interfaces directly with a participating building’s energy-management system (EMS), or lighting and HVAC control systems. Customers work with SMUD to identify appropriate load control strategies and modifications and install demand responsive systems in their facilities. In response to a curtailment event notification, participants bid their load reduction into the District based on the control strategies selected. The load control actions take place automatically when the curtailment period begins. Customers have the ability to opt out or cancel a curtailment session at any time.

## Commercial Retail Products and Services Programs

SMUD provides a number of value-added programs to its commercial customers. The programs are developed with input from customers or in response to new technologies or opportunities that become available in the marketplace. Some of the elements of these programs, like the



Greenergy® block pricing option, are unique to SMUD. Others represent variations on programs and services that are considered best practices in the utility industry.

- 1. Commercial Greenergy® Program:** SMUD’s commercial Greenergy® program uniquely addresses a key element of the District’s mission statement: “...to meet the electricity and energy-services needs of our customer-owners and in an environmentally responsible manner while providing value to the community.”

Greenergy® allows our customer to take an active role in helping the District to be environmentally friendly, helps diversify the District’s resource mix, and contributes to a better environment through a small additional monthly charge to their electric bill.

The current customer pricing options are:

- 100% renewable 1 cent per kWh—matches 100% of monthly electricity needs with renewable resources
- 50% renewable for ½ cent per kWh—matches 50% of monthly electricity needs with renewable resources
- 1,000 kWh blocks for \$10 each—matches 100% per 1,000kWh block

In addition to giving customers the choice to select renewable resources for their energy purchases, the District commits to matching 40% of all Greenergy® premiums by building new, SMUD owned renewable generation. Recent build projects for Greenergy® include the Arden Fair Solar Parking structure (@\$96,000 invested) and three Vestas turbines that were added to the Solano Wind Farm in 2003 (@\$6.991million committed). The Greenergy® program is an integral part of the Customer Services Strategic Plan and the District’s Resource Plan. The program assists the District in providing additional options for customers and continuing SMUD’s national leadership role in green pricing programs.

The Greenergy® resource plan section provides the direction for managing the acquisition of resources for Greenergy® and the District. Greenergy® customers are served through a mix of electricity generated from the Kiefer Landfill Plant (landfill gas), the Solano Wind Farm, Slab Creek (small hydro) and other wind energy contracts. Additionally, SMUD may utilize “green tags,” or Tradable Renewable Certificates (TRCs), from electricity generated outside the District boundaries, as necessary. As of mid 2005, the program continues the positive trend established in recent years and has a commercial customer base of over 1300 customers and is forecasted to grow to approximately 1,800 by year-end.

- 2. Energy Tracking Services:** Two options are provided for commercial customers on a fee-for-service basis that allow customers to view their historical and current electricity energy use and demand in graph or table format. The first product, Enerlink, provides onsite “real-time” data access through a PC-based single-point of installation. The second product, Energy Profiler Online, allows customers to view data up through the previous day through a secure Internet web page. By providing both data presentation options, customers and SMUD staff can tailor the offering based on the customer’s needs.

Customers needing data on a real-time basis can access their meters any time of the day through Enerlink. Those with less critical or immediate need for data choose Energy Profiler Online. The option chosen has traditionally depended on their need for immediate data access and the cost of each option.

SMUD Metering Program staff members maintain the connections between the meters and load recording and management system (MV90). MV90 receives the data via telephone lines for both programs. Following validation, data is also sent from MV90 to the Power Measurement EPO Internet site. Customers using Enerlink can access their meters directly.

3. **Diagnostic Services:** A variety of tools and services have been provided by SMUD to its commercial customers to assist them in conducting preventative maintenance diagnostics and to help improve operating efficiencies at their facilities.
  - **Agricultural and Water-District Pump Testing:** This service offers pump testing and energy efficiency information to agricultural and other customers with water pumps, such as water and irrigation districts. Individual pump test reports are provided to customers to encourage implementation of adjustments or other cost-effective measures that improve pump performance and reduce energy and demand requirements.
  - **Motor Testing:** SMUD's motor testing service helps ensure the reliable operation of electric motors by verifying motor condition and predicting future failures. The service evaluates the condition of the insulation, power circuit, stator windings and rotor, with historical data trended and a report provided to customers summarizing the results and recommended actions. Motor testing may be done in conjunction with pump testing or flow analysis on an as-needed basis.

## Economic Development Programs

SMUD is committed to helping businesses thrive in its service territory. A competitive business climate demands a competitive utility provider, and SMUD has responded with lower rates, reliable service, and special attention to commercial and industrial customers.

In the arena of economic development, SMUD actively participates in retaining, recruiting, and growing businesses that will build and maintain a healthy commercial and industrial base to benefit customers of all classes. SMUD also works in collaboration with local and regional organizations to improve the area's economy and quality of life.

1. **Business Retention:** SMUD offers its existing commercial and industrial customers a variety of energy services that are good for the bottom line. Cost-effective energy efficiency improvements that are recommended and often offered with incentives or financed by SMUD can include lighting retrofits, HVAC upgrades, building improvements, and high-efficiency motor replacements to improve productivity. SMUD also coordinates with other community agencies and organizations in problem-solving response teams to address specific customer concerns and business retention issues.
2. **Business Recruitment:** SMUD offers new businesses considering a move to the SMUD service area comprehensive site selection assistance. This includes rate/load analysis and bill projections, new service coordination, energy efficiency and construction consultation and assistance, coordination with other agencies to streamline processes, and incentive rates for new and expanding businesses.
3. **Small and Emerging Businesses, Business Expansion:** SMUD is also a strong supporter of new and emerging businesses within its service area. The District has developed community partnerships to offer small business loans, such as the Grow Sacramento Fund, the State Loan Guarantee Program, and EnterFund. Through these community partnerships,

SMUD makes available real dollars to help attract new businesses to the region. SMUD has also developed partnerships that offer training and consultation to small businesses such as the Center for Small Business, the Service Corps of Retired Executives (SCORE), and the STRIVE Financial Literacy Program.

In the area of new business formation, SMUD has been especially supportive of entrepreneurial development in technology by partnering with organizations like the McClellan Technology Incubator (MTI), the Sacramento Area Regional Technology Alliance (SARTA), Golden Capital Network, UC Davis Connect, and the UC Davis Graduate School of Management, to bring new businesses to SMUD's service territory. Currently, SMUD is participating in the discussions on ways to promote clean energy business incubation and the development of a life sciences business cluster for the region.

- 4. Community and Regional Development:** Collaborating with other organizations, SMUD also plays a strong role in community and regional development – making the Sacramento region a better place. The District has participated in the Valley Vision/SACOG (Sacramento Council of Governments) Blueprint Transportation and Land Use Study. SMUD currently participates in the Partnership for Prosperity (a new regional economic development planning process similar to the Blueprint Project), the Sacramento Regional Marketing Council, the Metro Chamber's advocacy and study missions, the commercial corridor business development and improvement associations and the local Chambers of Commerce and economic development taskforces/committees.
- 5. SMUD Contractor Assistance:** A separate area of economic development at SMUD is the District's contractor/supplier assistance program. Administered by Supplier Diversity staff, this program seeks to develop more SMUD contracts with local and small businesses. As a result, SMUD relies less on contracting with businesses from outside communities. The program includes extensive outreach and work with local and ethnic Chambers of Commerce. Finally, it provides an advantage for small, rate paying businesses that bid on SMUD's business opportunities. It provides a sheltered market for certain contracts of \$50,000 or less, making these contracts available only to certified "Ratepaying Emerging Business Enterprises" (REBEs). To qualify as a Ratepaying Emerging Business Enterprise, a business must have 50 or fewer employees and average annual revenues of \$5 Million or less (3 years). The program also offers a loan guarantee program for SMUD contractors.

## SMUD's Online Self-Service Offerings

SMUD's web portal provides SMUD's customers with centralized self-service options including bill viewing and payment, program sign-up, general customer information, etc. The following presents an overview of SMUD's online self-service offerings.

- 1. Your Account:** Residential and Commercial customers can perform many common transactions with SMUD via a personalized website on SMUD.org. All of the transactions interact with SMUD's back office systems, eliminating the need for human intervention in many cases. Customers can:
  - View current account balance, due date, last payment information, energy usage data, 13 month energy usage chart and current account profile

- Update Account Information—Change their mailing address, email address, contact phone numbers, and provide account access to additional adults.
  - Sign up for SMUD programs and services—Start or stop participation in SMUD’s HomePower, Greenergy®, Peak Corps, EnergyHELP, Shade Tree, and Power Protection Service.
2. **eBill:** Residential and Commercial customers can view an exact replica of their current SMUD bill as well as their previous 13 bills. Customers can also download and print the bills from their computer. Online payments are accepted via credit card, debit/ATM cards, and personal checking accounts. Customers can also schedule customized automatic payments from their checking account and control when the payments are made. An email is sent each month notifying the customer when a bill is ready for viewing.
  3. **Start, Stop, Transfer Electric Service:** Residential and Commercial customers can start, stop, or transfer their electric service online without calling SMUD. Customers receive an email confirmation informing them when the transaction is complete. Service requests can be post-dated 30 days in advance for the customer’s convenience.
  4. **Online Energy Analysis:** Residential and Commercial customers can receive detailed analysis of their actual energy usage after answering some simple questions about their consumption habits and the number of appliances they own. The tool uses 13 months of actual energy usage and temperature data to provide an accurate analysis of usage patterns and provide relevant tips on saving energy.
  5. **Property Manager Portal:** The Property Manager Portal allows property management companies that are signed up with SMUD’s Interim Service to view the status of each individual property they own. Property managers can view the account balance for the amount they owe for each account. They can also view when the electric service went into a tenant’s name and when the service went into their name, ensuring the proper person is paying the bill. Property Managers can also easily start or stop the electric service for tenants and receive a confirmation email upon completion for their records.
  6. **Lobby Kiosk:** SMUD’s lobby kiosk offers to customers a web based access point for all of SMUD’s offerings. A fully functioning web access point is provided in SMUD’s Customer Service Center lobby for visitors to browse SMUD.org. The touch screen navigation and easy to read menus allows the customer to quickly access important portions of SMUD.org, as well as print out information and forms from SMUD’s website.