General Manager's Report and Recommendation on

Rates and Services

SmartSacramento® Pricing Pilot

April 7, 2011

Volume 2

SMUD

General Manager's Report and Recommendation on

Rates and Services

Volume 2

SmartSacramento® Pricing Pilot

April 7, 2011

A Sacramento Municipal Utility District Publication

General Manager's Report and Recommendation on Rates and Services

Volume 2: SmartSacramento® Pricing Pilot[1]

April 7, 2011

Prepared by:

Sacramento Municipal Utility District's
Pricing Division of Business Planning & Budget

under the direction of:
John DiStasio, General Manager and CEO

For additional copies of this report, or for information on issues included in the report, please call SMUD's Pricing Division at:

(916) 732-6222

1 ® A registered service mark of the Sacramento Municipal Utility District.

Contents

Rate Requirements & Recommendations

1. Background

The SmartSacramento® Pricing Pilot is a two-year study, partially funded by a grant from the U.S. Department of Energy, which will introduce time-based pricing to residential participants over the course of two summers in 2012 and 2013. Under the terms of the grant, SMUD will evaluate the extent that participants respond to the rates by shifting electricity use from on-peak periods to less costly off-peak periods.

The rate designs to be tested evolved from SMUD's long-term strategy to have residential pricing reflect the high cost of providing reliable power during summer peak periods. While focused on this overall goal, staff sought to design the rates in keeping with general principles of cost recovery, economic efficiency, customer equity, rate simplicity and minimal negative cost impact to customers. To meet these objectives, the rate designs employ the following features:

- **Pricing the on-peak period rates** based on SMUD's marginal generation and energy-related costs to provide a realistic price signal during SMUD's on-peak period;
- **Shortening the on-peak period** to only three afternoon hours to facilitate the customer's ability to shift electricity use to off-peak hours;
- **Limiting the rate** changes to the four-month summer to allow the customer to benefit immediately from low off-peak pricing;
- **Creating revenue neutrality** for the average class customer by discounting the off-peak prices to offset the higher on-peak prices; and
- **Minimizing changes to the bill structure** by keeping the original Base Usage and Base-Plus Usage rate structure for off-peak pricing.

The proposed experimental rates will build on the recommended changes to residential rates in Volume 1, which redefines the summer season to match the June through September period.

2. General Manager's Recommendation

This General Manager's Report and Recommendation on Rates and Services ("Report") recommends adoption of the following residential experimental rates to be offered to participants in the SmartSacramento® Pricing Pilot, to be effective during the summer months of June through September in 2012 and 2013:

- A peak time-of-use (TOU) rate for the 4:00 p.m. to 7:00 p m. weekday afternoon period;
- A Critical Peak Pricing (CPP) to be called on designated peak days; and
- A rate that combines both CPP on called event days with TOU on the remaining weekday on-peak periods.

In the event that the Board does not pass the proposed TOU rates for the small commercial GSN and GSS rates detailed in Volume 1, these rates will be included as part of the SmartSacramento® Pricing Pilot study.

SMUD will retain the option to extend the rates beyond the initial study time-frame.

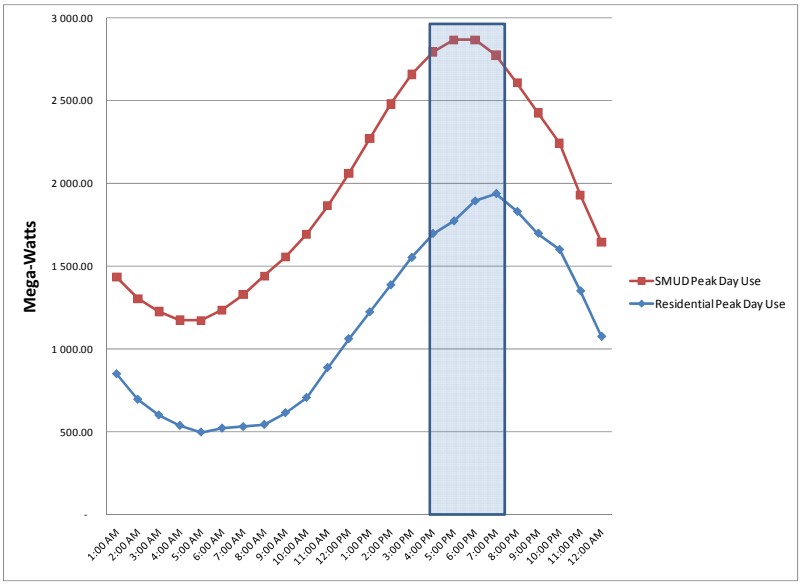
Tentative rate category codes for the pilot rates have been proposed and are included in the Tariff sheets attached to Volume 1. Rate category codes do not affect the price or structure of the rates. Final codes will be adopted prior to implementation of the Tariffs and will be incorporated into the final Tariff sheets prior to their publication without the necessity of additional action by the Board of Directors.

Changes to Existing Rates

Overview[2]

The pilot rates proposed in this Report, Volume 2, will be the subject of a rigorous two-year study that will influence whether SMUD will incorporate the rate structures in the future. The goal of the proposed rates is to engage residential customers to help SMUD reduce its current and future power requirements. The rates focus on summer afternoons, especially the few critical hours between 4:00 p.m. and 7:00 p m. — illustrated in Figure 1 — when residential air conditioning is the major contributor to SMUD's peak loads.

Figure 1. Residential Contribution to SMUD Peak



The on-peak loads during this period place considerable strain on SMUD's peak capacity for which it must plan costly energy purchases to assure sufficient long-term reserves and equipment capability. Yet despite the significance of this time period, SMUD's residential rates presently do not differentiate it from the low-cost hours in the middle of the night when power reserves are plentiful. Historically, customers have proved to be empathetic and responsive to calls for reducing power when called upon. But, from a cost

[2] The proposed changes are consistent with pre-existing legislative action by the Board of Directors as evidenced by Strategic Direction (SD-2), Competitive Rates, last revised January 21, 2010 (See Volume 1 of this Report) and Resolution No. 10-04-03, adopted April 15, 2010, approving a grant agreement with the U.S. Department of Energy, which conceptually committed to the components in the SmartSacramento® Pricing Pilot.

standpoint, residential customers can remain indifferent to the on-peak period challenges and high costs the utility can face each summer.

The introduction of residential TOU rates has been hampered in the past by two problems. First, to become a universal standard rate all residential meters would have to be replaced with ones capable of registering energy in discrete time bins. Second, the optional TOU rates introduced in the past have favored large electricity users over small ones because of the inherent nature of the tiered rate structure.

The installation of the new smart meters, which should be near completion by the end of 2011, solves the first problem. The proposed experimental rates seek to address the second issue by overlaying highly targeted TOU prices on the existing Base Usage structure. The specific objectives of these rates include the following:

- To provide a clear price signal to the customer during SMUD's summer peak period;
- To encourage customers to shift their loads to non-peak periods; and
- To assure that the customer who does not shift, or cannot shift load, is not penalized with bills that are significantly higher than on the otherwise applicable rate.

Of specific interest to the study is the measured change in customer electricity use by time period, the change in peak demand and the impact of the time-based rates on customer satisfaction. Customers will be solicited either on an *opt-in* basis, where they voluntarily initiate participation in response to SMUD marketing, or an *opt-out* basis, where SMUD notifies them of their selection as a rate participant[3]. To be eligible for the study, the residential customer must have smart meter hourly usage data available from the prior summer of 2011. The following groups will be excluded from the study:

- Medical Equipment Discount Rate – customers who receive a monthly discount for use of qualifying medical equipment devices;
- Peak Corps (ACLM) – customers who currently participate in this voluntary air conditioning cycling program;
- Net-Metered – customers with renewable power generators that deliver excess electricity to SMUD;
- Budget Billing – customers who have elected to receive standardized monthly billing based on the previous 12-month average; and
- Third Party Notification – customers who have joined this program to prevent service interruption due to late payments.

Participants will be asked to remain in the program from June 1, 2012, through September 30, 2013. To further encourage program continuance, participants will be offered information feedback tools, educational materials, and in most cases technology devices for automatic equipment control. Altogether the study will solicit from a pool of 60,000 to 80,000 customers with smart meters to

[3] Opt-out participants will be able to drop out of the study upon request.

obtain a final participation level of approximately 5,400. The study will also select a statistically representative sample as a comparative control group. Table 1 details the planned allocation of participants among the rate and technology options.

Aside from the rate study participants, the experimental rates may be offered to other SmartSacramento® projects involving residential load control and battery dispatch. The exclusions noted in this section apply only to participants in the SmartSacramento® Pricing Pilot. These other programs that use the pilot rates, may employ separate screening criteria. In all cases, however, SMUD will not provide reimbursement if the rates result in higher bills.

Table 1. Planned Experimental Rate Participants

Rate	Option	Technology	Participants
Time-Of-Use	Opt-In	No	942
		Yes	1,570
	Opt-Out	Yes	992
Critical Peak Pricing	Opt-In	No	150
		Yes	1,131
	Opt-Out	Yes	345
Time-Of-Use with Critical Peak Pricing	Opt-Out	Yes	300
	Total Participants		***5,430***

1. Residential Time-of-Use

Purpose

The current Base Usage and Base-Plus Usage pricing for residential customers dates back to 1987, when the Board set a baseline allowance at the average seasonal energy use for this class of customers. The original intent was to encourage conservation by setting the Base-Plus Usage at a price that is approximately 80 percent higher than the Base Usage price. The purpose of the proposed rate is to keep this underlying pricing relationship with its conservation intent intact, while introducing a high on-peak price during summer afternoons.

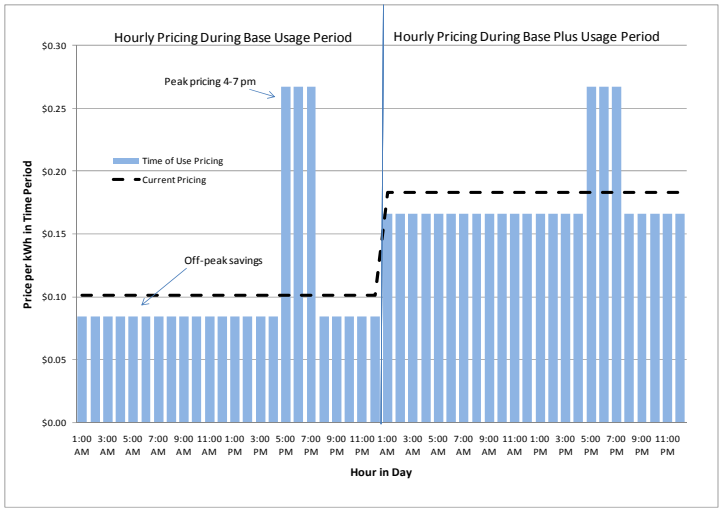
As illustrated in Figure 2, the on-peak price will occur for only a short period, starting at 4:00 p.m. and ending at 7:00 p.m. on weekdays. All other hours, including weekends and holidays will be subject to off-peak prices, shown as blocks in the figure. The peak price will be fixed at $0.27/kWh, based on SMUD's marginal cost for energy and capacity[4] during the period. The off-peak will retain the Base Usage and Base-Plus Usage quantities, but the prices will be below the current rate, as illustrated with the dashed line. In this way, the overlay rate encourages customers to lower both their on-peak use and their total monthly use.

[4] Marginal costs refer to the long-term incremental cost of adding a new unit of energy or load to SMUD's system. SMUD bases its marginal *energy* costs on the expense of operating a natural-gas peaking power plant. Marginal *capacity* costs refer to the debt service and fixed costs associated with the power plant.

Revenue Impact

The rate design for the summer peak and off-peak pricing will result in an overall revenue-neutral effect for the study participants during the four months of the summer season.

Figure 2. Comparison of Standard Rate with Proposed Time-of-Use Rate Structure



Recommendations

Adopt the proposed experimental TOU rate shown in Table 2 for the SmartSacramento® study participants and other residential customers on related pilot projects on a limited term basis.

The on-peak price of $0.27/kWh shall apply during the summer weekday hours starting at 4:00 p m. and ending at 7:00 p.m.

The off-peak prices will be effective during the remaining summer hours, including weekends and Independence Day (July 4th) and Labor Day.

The off-peak prices will be subject to the existing electricity allowances, with the Base Usage applicable to the first 700 kWh of electricity use for standard customers and 1,000 kWh for customers with domestic wells. Base-Plus Usage off-peak prices will apply to all energy use above these levels.

The off-peak prices for low-income customers will be subject to Base Usage discounts as well as the additional cap specified in the rate restructuring proposals in Volume 1.

The rates will be effective during the summer months of June through September in both 2012 and 2013.

Rates for the remaining months will revert to the applicable standard tariffs.

Table 2. Recommended Pricing for Time-of-Use Rate

Summer Season June 1 – September 30

		Off Peak Price			Monthly
Option	On Peak Price	Base Usage	Base-Plus	Above Cap	Charge*
Standard	$0.27	$0.0846	$0.1660		$10.00
Low Income	$0.20	$0.0550	$0.1162	$0.1660	$3.50

**System Infrastructure Fixed Charge*

Rate Impact

At least 35,000 customers will be offered the experimental TOU rate, with final participation set at approximately 3,500 or around 60 percent of the total potential study participants. To some extent, the eventual bill impact of the new rate will depend on the extent that these participants will respond by shifting their use to achieve bill savings.

Staff analysis found that as a starting point — assuming no shifting — the majority of customers will see little initial change in their bill under the new rates. Figure 3 compares the impact of the proposed rate to the otherwise standard rate, based on hourly analysis of approximately 50,000 customers with an existing smart meter. It shows that 45 percent of standard rate participants will initially experience bill savings, while 85 percent will see monthly bill increases of $5.00 or less. Figure 4 shows that low-income customers fare similarly, although more customers will see slight bill increases.

Whether a participant on the experimental rate experiences initial savings or costs will depend on two factors. The most important is the amount of energy used during the high-cost peak period compared to total monthly use. The rate design assumed the class average of approximately 14 percent peak energy use for the average residential customer during the four summer months.

All things being equal, this would mean that customers with a peak use higher than 14 percent will pay more than the standard rate, and those with less peak use will pay less than the standard rate. This formulation is mitigated by the two-level rate design for off-peak pricing, which favors higher use.

Table 3 details the combined impact of these variables. The shaded areas represent initial bill savings on the new rate and the non-shaded areas indicate the customers who will pay more on their bills. The breakpoint for customers with off-peak Base Usage of 700 kWh or less is 8 percent to 10 percent of peak electricity use. This breakpoint expands to 14 percent to18 percent for larger-use customers. A significant percent of customers in the Base Usage level will see their initial bill increase on the new rate; while the majority of larger-use customers will see initial bill savings.

Figure 3. Monthly Bill Impact of Proposed TOU Rate (Standard Customers)

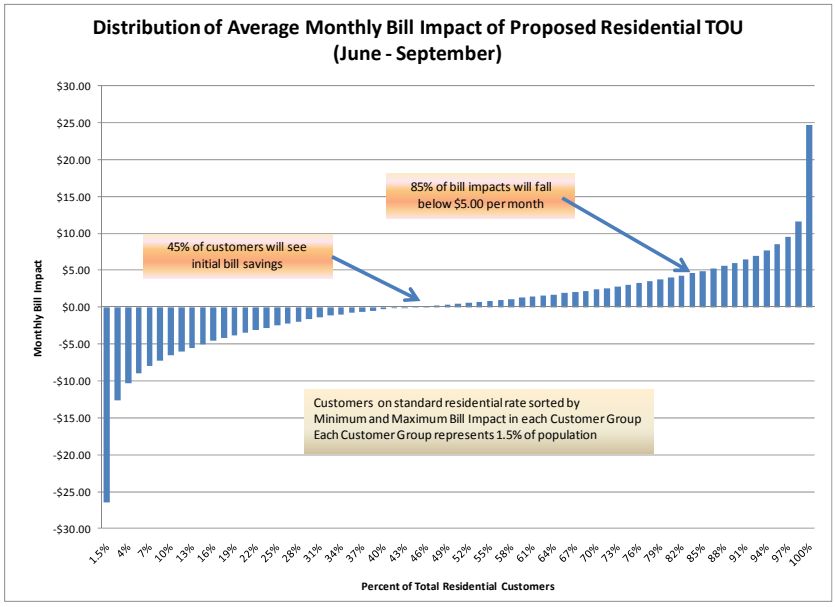
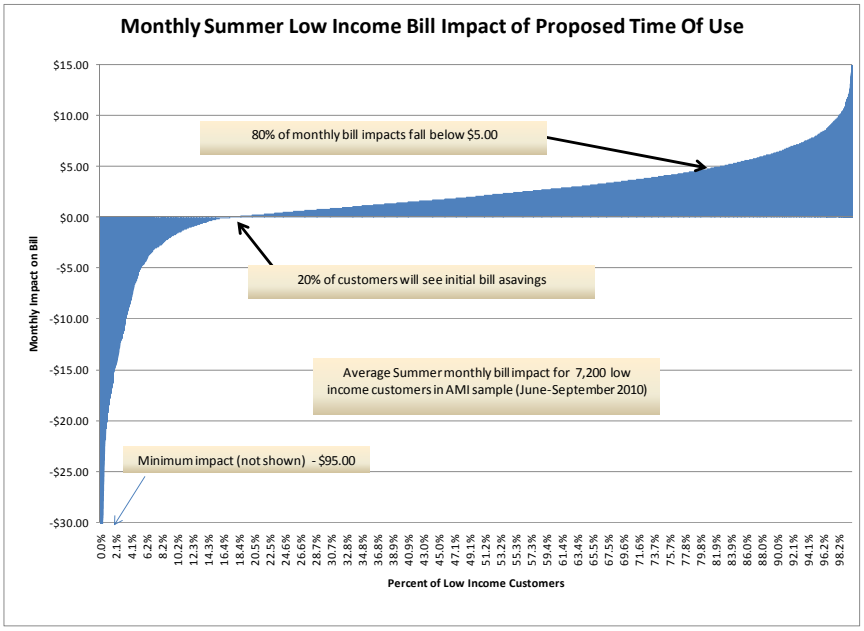


Figure 4. Monthly Bill Impact of Proposed TOU Rate (Low-Income Customers)



Despite this initial disadvantage, customers at the Base Usage level will benefit from needing to shift 50 percent less energy than Base-Plus Usage customers for the same bill savings. This is because the difference between the on-peak price and Base Usage is nearly $0.19/kWh, while the difference between the on-peak price and Base-Plus Usage is around $0.10/kWh. This means, for example, that a Base Usage customer need only shift 5 kWh from the on-peak

period to achieve a dollar in savings; a Base-Plus Usage customer must move 10 kWh to achieve the same savings.

Table 3. TOU Rate Impact by Monthly Electricity Use and On-Peak KWh

Shaded areas indicate initial bill savings on the new rate. Participants in un-shaded areas can save by shifting peak usage.

Percent of Energy Use in Peak Period	TOU Bill Impact by Monthly Energy Use (kWh)							
	<300	300 - 500	500 - 700	700 - 1,000	1,000 - 1,200	1,200 - 1,500	> 1,500	Grand Total
< 5%	-$1.26	-$3.76	-$5.62	-$9.80	-$14.44	-$16.70	-$30.62	-$4.34
5 - 8%	-$0.68	-$1.58	-$2.81	-$7.13	-$10.41	-$12.90	-$21 53	-$3.62
8-10%	-$0.02	-$0.03	-$0.43	-$4.74	-$8.05	-$9.88	-$15 55	-$2.35
10 - 12%	$0.65	$1.32	$1.41	-$2.76	-$5.67	-$7.45	-$11 83	-$1.87
12% - 14%	$1.39	$2.69	$3.25	-$0.86	-$3.45	-$4.79	-$7.91	-$0.79
14 - 16%	$2.18	$4.06	$5.26	$1.24	-$1.35	-$2.20	-$4.25	$0.96
16 - 18%	$2.97	$5.52	$7.19	$3.46	$0.69	$0.21	-$0.61	$3.26
18% - 20%	$3.70	$7.05	$9.24	$5.79	$2.83	$2.76	$3.20	$5.78
> 20%	$4.59	$9.42	$12.25	$9.55	$5.71	$6.55	$7.39	$9.14
Average Bill Impact	***$0.90***	***$2.83***	***$4.31***	***$0.88***	***-$2.07***	***-$3.37***	***-$7.06***	***$0.38***
Customers in Use Bin	***17.4%***	***18.4%***	***16.6%***	***19.6%***	***9.3%***	***8.9%***	***9.8%***	***100.0%***
Percent Who Save	***38.4%***	***20.1%***	***13.1%***	***43.6%***	***69.7%***	***74.0%***	***95.2%***	

2. Critical Peak Pricing

Purpose

The proposed TOU prices represent the average costs that SMUD will experience during typical summer afternoons. For up to a dozen or more days each summer, however, Sacramento typically experiences triple digit temperatures, triggering widespread air conditioning use and sending SMUD's peak loads to their highest points of the year. So few and so significant are these critical peak days that as few as 40 hours represent 400 megawatts of incremental load. SMUD often pays dearly to supply power during this period. Even more importantly, our resource and transmission planners must base future investment decisions on being able to handle these few hours of high load.

The proposed experimental Critical Peak Pricing (CPP) will address this period head-on by charging a very high electricity price for a total of 36 summer hours on 12 days with highest predicted system loads and market prices[5]. The time period will be 4:00 p m. to 7:00 p m., the same as TOU, but the price will be activated one day in advance of the critical peak event. As compensation, volunteer participants on the rate will enjoy low, off-peak prices.

[5] In practice, selecting peak event days requires judgment and timing due to unpredictability in weather and the need to limit total summer dispatches to 12 days. For the pricing pilot study, SMUD will call the full 12 events with the understanding that some days may fall short of critical peak criteria.

Beyond the study evaluation, the CPP rate can potentially be part of future residential and commercial load curtailable programs. This approach differs from SMUD's Peak Corps, our long-standing direct load control program, which cycled residential air conditioning equipment during designated peak days. Now dormant except for emergencies, Peak Corps once provided participants a standby credit and additional payments for each dispatched event. Critical peak rate participants receive no direct compensation; instead they can elect to control their use or pay the higher price. Compensation takes the form of lower off-peak prices[6].

As shown in Figure 5, the proposed CPP is $0.75/kWh, only slightly lower than the calculated average marginal price of $0.88/kWh for the top 12 peak days in a typical year. The price represents a long-run avoided cost, meaning that it includes amortized expense for future power requirements, including the capital cost for investing in a new generation plant in the future. By comparison, residential customers on current rates pay only $0.12/kWh for electricity during the summer.

Figure 5. Critical Peak Price Comparison

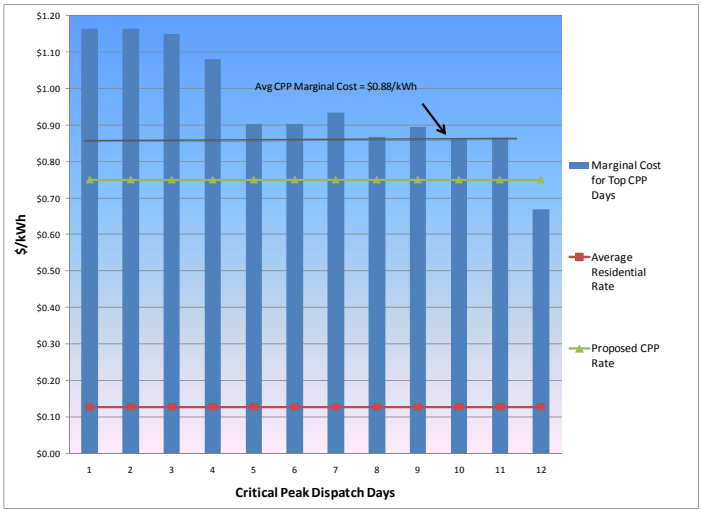
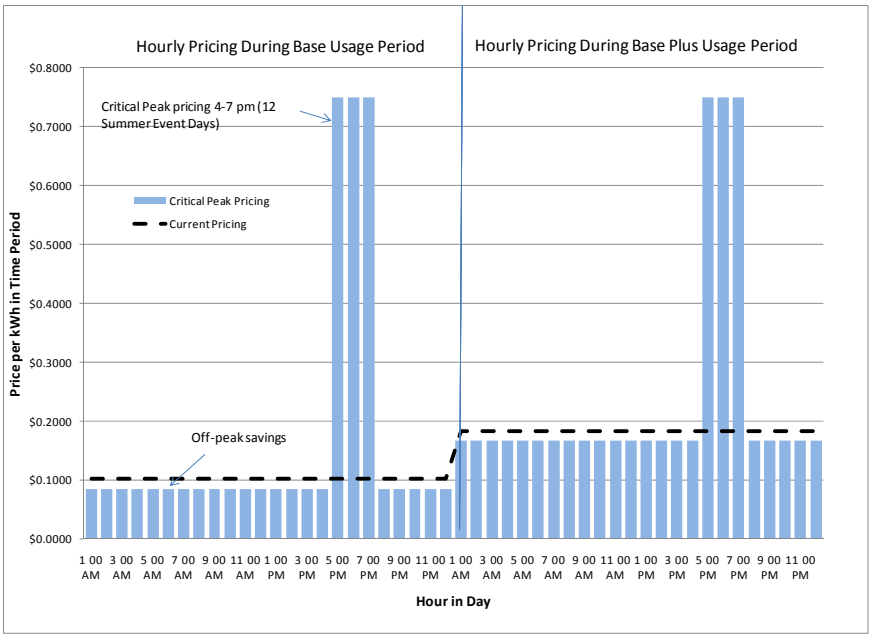


Figure 6 illustrates the CPP rate structure compared with the standard two-level rates for peak and weekend days during both Base Usage and Base-Plus Usage pricing periods. The tall bars represent the CPP prices to be charged on the 12 called events. The shaded areas represent the off-peak charges, and the dotted line is the current pricing.

[6] Programs that may use the CPP rate outside the SmartSacramento® Pricing Pilot, may offer some additional incentives to encourage participation.

Figure 6. CPP and Standard Rate Structures



Revenue Impact

The CPP rate is designed to be revenue-neutral for the four summer months it is in effect.

Recommendation

Adopt the proposed experimental CPP rate shown in Table 4 for SmartSacramento® Pilot Rate study participants and other voluntary residential customers for the specified period of the study.

The critical peak price of $0.75/kWh shall apply during the called events between the summer weekday hours starting at 4:00 p.m. and ending at 7:00 p m.

SMUD shall call no more than 12 CPP events per summer.

Table 4. Proposed Critical Peak Pricing Rate

		Off Peak Price			Monthly
Option	Critical Peak Price	Base Usage	Base-Plus	Above Cap	Charge*
Standard	$0.75	$0.0851	$0.1665		$10.00
Low Income	$0.50	$0.0553	$0.1165	$0.1665	$3.50

**System Infrastructure Fixed Charge*

The off-peak prices will be effective during the remaining summer hours, including weekends and July 4th and Labor Day.

The off-peak prices will be subject to existing energy allowance, with the Base Usage applicable to the first 700 kWh of electricity use for standard customers

and 1,000 kWh for customers with domestic wells. Base-Plus Usage off-peak prices will apply to all electricity use above these levels.

The off-peak prices for low-income customers will be subject to the Base Usage and Base-Plus Usage discounts as well as the additional ceiling specified in the rate restructuring proposals in Volume 1.

The rates will be effective during the summer months of June through September in both 2012 and 2013, with SMUD retaining the option to extend the rates for additional years.

Rates for the remaining months will revert to the applicable standard tariffs.

Rate Impact

Approximately 12,000 customers will be offered the experimental CPP rate, to meet a participant goal of 1,625 customers or around 30 percent of the total potential study participants. As with the TOU rate, the eventual rate impact will depend to a large extent on whether participants avoid or shift their electricity use during CPP event days. Unlike the TOU, which applies on a daily basis, the impact of the 12 CPP call days depends upon summer weather conditions, which can be highly variable from year to year.

This caveat has salience since staff analysis relied on smart meter data during the especially mild 2010 summer. That evaluation found 75 percent of the 50,000 customers in the sample data would experience a bill increase of $5.00 or less on the proposed CPP rate, and around 40 percent of customers will initially save on the new rate, before shifting their electricity use. Figure 7 shows these results. Figure 8 illustrates that low-income customers will fare even better.

Figure 7. CPP Impact for Standard Participants

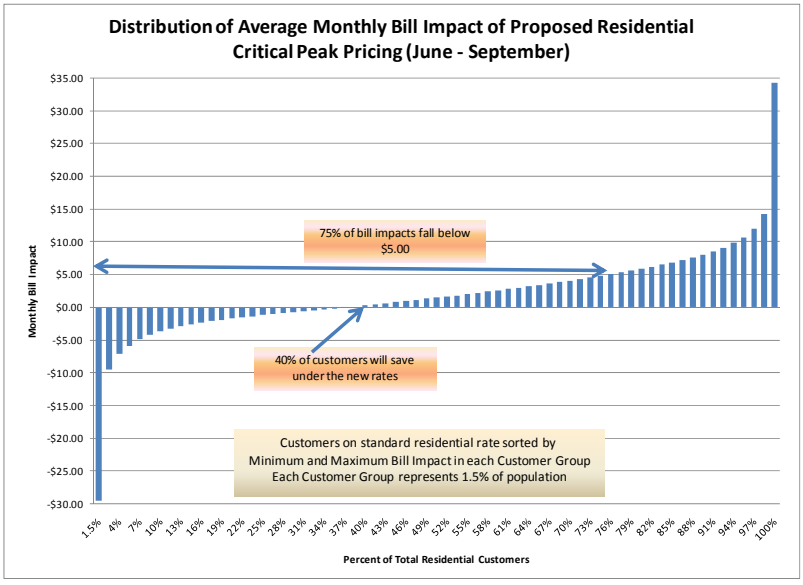


Figure 8. CPP Impact for Low-Income Participants

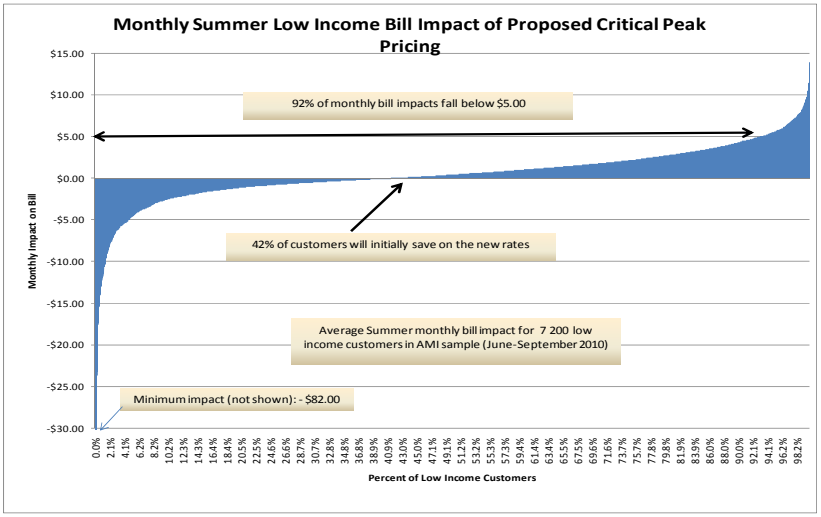


Table 5 details the monthly bill impact of the CPP rate, with the shaded area indicating those customer usage patterns that will see positive savings. The results show that the largest-use customers stand to benefit the most from the rate. On average, customers can expect a modest initial monthly increase of approximately $1.65.

While the initial impact for most customers will increase bills marginally, the potential for savings is quite significant per kWh. This is because the difference between the CPP and the off-peak prices range between $0.58 (Base-Plus Usage) and $0.66 (Base Usage). This means that CPP participants would need to shift between 1.5 to 1.7 kWh from the on-peak period to save each dollar on their bills.

Table 5. CPP Impact by Monthly and Peak KWh

(Shaded Areas indicate Bill Savings)

Percent of Energy Use in Peak Period	CPP Bill Impact by Monthly Energy Use (kWh)							
	<300	300 - 500	500 - 700	700 - 1,000	1,000 - 1,200	1,200 - 1,500	> 1,500	Grand Total
< 5%	-$1.60	-$4.52	-$6.73	-$9.63	-$13.85	-$12.23	-$28.68	-$4.67
5 - 8%	-$1.35	-$2.76	-$3.95	-$5.65	-$7.60	-$9.27	-$16.61	-$3.69
8-10%	-$0.74	-$1.23	-$1.70	-$3.05	-$3.14	-$4.69	-$8.94	-$2.01
10 - 12%	$0.04	$0.27	$0.43	-$0.48	-$1.02	-$1.63	-$5.34	-$0.66
12% - 14%	$0.89	$1.92	$2.40	$1.57	$1.19	$0.58	-$2.29	$1.04
14 - 16%	$1.78	$3.63	$4.29	$3.50	$2.94	$2.46	$0.55	$2.92
16 - 18%	$2.72	$4.74	$5.87	$5.01	$4.77	$4.58	$3.99	$4.78
18% - 20%	$3.16	$6.02	$7.07	$6.52	$7.01	$6.99	$7.83	$6.49
> 20%	$4.19	$7.59	$9.25	$9.04	$8.85	$9.83	$12.97	$8.28
Average Bill Impact	***$0.33***	***$1.91***	***$3.06***	***$2.72***	***$2.27***	***$1.54***	***-$1.61***	***$1.64***
Customers in Use Bin	***17.4%***	***18.4%***	***16.6%***	***19.6%***	***9.3%***	***8.9%***	***9.8%***	***100.0%***
Percent Who Save	***38.4%***	***20.1%***	***13.1%***	***23.1%***	***22.2%***	***22.6%***	***56.5%***	

3. Combination Time-of-Use and Critical Peak Pricing Rate

Purpose

The SmartSacramento® Pricing Pilot will target a small subset of participants to evaluate their response to a rate that combines the daily time-of-use rate with substitute CPP pricing during the 12 called events during the summer. For SMUD, this combination rate will simulate a possible future situation where TOU has become the mandatory standard rate and the customer elects to also opt-in to a CPP offering. The rate imposes the greatest on-peak costs for the participant, but also provides the deepest off-peak discounts. Among the questions to consider is the relative incremental impact of each rate component.

Revenue Impact

As with other SmartSacramento® Pricing Pilot rates, the combination TOU-CPP rate will be revenue neutral for the four-month summer period.

Recommendations

Adopt the proposed experimental combination TOU-CPP rate shown in Table 6 for SmartSacramento® study participants and other voluntary residential customers on the specified term of the study.

The on-peak price of $0.27/kWh shall apply during the summer weekday hours starting at 4:00 p m. and ending at 7:00 p.m., except during holidays and CPP call days.

The critical peak price of $0.75/kWh shall apply during the called events between the summer weekday hours starting at 4:00 p m. and ending at 7:00 p.m.

SMUD shall call no more than 12 CPP events per summer.

The off-peak prices will be effective during the remaining summer hours, including weekends and Independence Day (July 4th) and Labor Day.

The off-peak prices will be subject to existing electricity usage allowance, with the Base Usage applicable to the first 700 kWh of electricity use for standard customers and 1,000 kWh for customers with domestic wells. Base-Plus Usage off-peak prices will apply to all electricity use above these levels.

The off-peak prices for low-income customers will be subject to existing discounts as well as the additional ceiling specified in the rate restructuring proposals in Volume 1.

The rates will be effective during the summer months of June through September in both 2012 and 2013, except that SMUD retains the option to extend the rates to future years

Rates for the remaining months will revert to the applicable standard tariffs.

Table 6. Proposed Combination TOU-CPP Rate

Option	Critical Peak Price	TOU Peak Price	Off Peak Price			Monthly Charge*
			Base Usage	Base-Plus	Above Cap	
Standard	$0.75	$0.27	$0.0721	$0.1411		$10.00
Low Income	$0.50	$0.20	$0.0468	$0.0987	$0.1411	$3.50

**System Infrastructure Fixed Charge*

Rate Impact

For the combination TOU-CPP rate, the SmartSacramento® Pricing Pilot will select 300 participants from a pool of around 750 who will be offered the rate. Figures 9 and 10 show the range of potential impacts of the new rate for these participants, based (as with the other rates) on summer 2010 use of existing smart meter customers. The combination rate results in greater volatility among the sampled customers, when compared to the other proposed experimental rates. Fewer customers will save initially on their bills (25 percent to 40 percent), and more customers will see bill increases of more than $5.00 (30 percent to 35 percent).

As indicated in Table 7, larger-use customers will initially have the largest bill savings.

Figure 9. TOU-CPP Impacts for Standard Participants

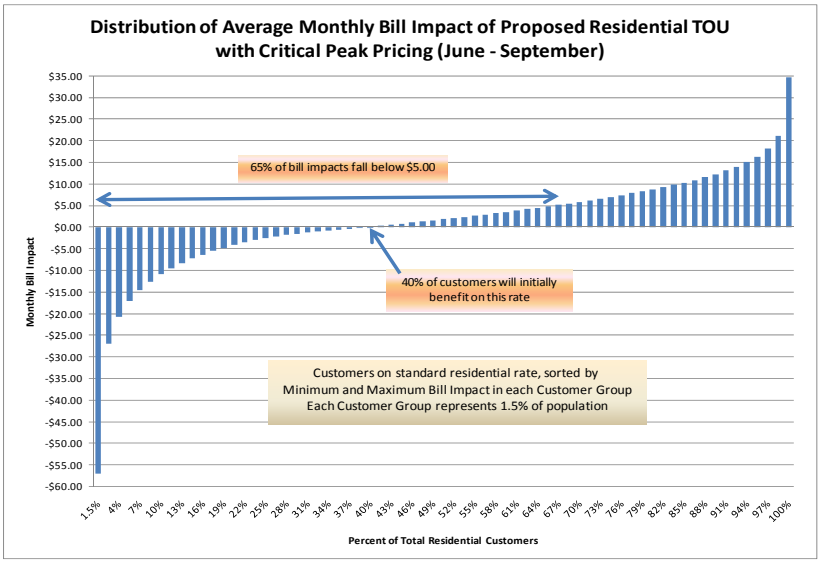


Figure 10. TOU-CPP Impact for Low-Income Participants

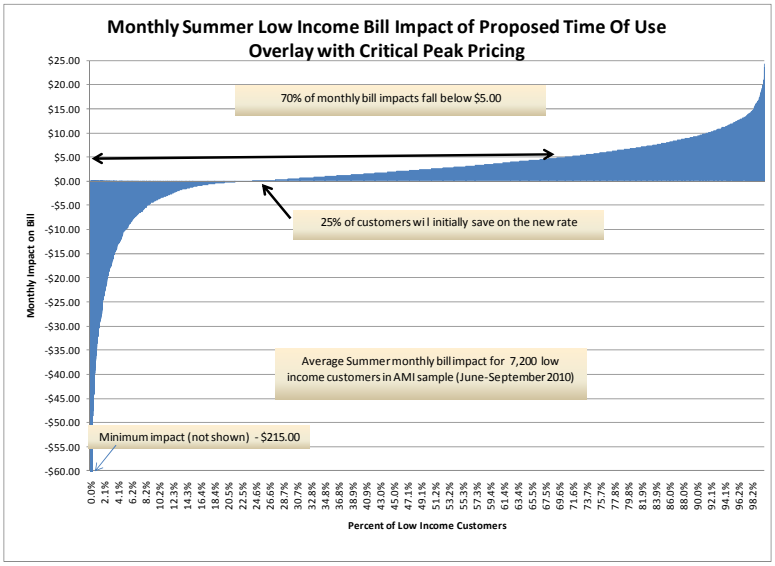


Table 7. TOU-CPP Rate Impact by Customer Monthly and Peak KWh Use

(Shaded areas = bill savings)

Percent of Energy Use in Peak Period	TOU-CPP Bill Impact by Monthly Energy Use (kWh)							
	<300	300 - 500	500 - 700	700 - 1,000	1,000 - 1,200	1,200 - 1,500	> 1,500	Grand Total
< 5%	-$2.43	-$7.08	-$10.56	-$17.88	-$28.06	-$32.03	-$70.43	-$8.58
5 - 8%	-$1.62	-$3.47	-$5.48	-$11.39	-$18.23	-$23.92	-$45.28	-$7.09
8-10%	-$0.47	-$0.72	-$1.29	-$6.64	-$11.69	-$16.67	-$31.19	-$4.39
10 - 12%	$0.81	$1.80	$2.28	-$2.31	-$7.07	-$11.32	-$23.84	-$3.09
12% - 14%	$2.21	$4.45	$5.73	$1.53	-$2.59	-$6.13	-$16.45	-$0.67
14 - 16%	$3.69	$7.15	$9.32	$5.48	$1.41	-$1.42	-$9.13	$2.98
16 - 18%	$5.20	$9.52	$12.58	$9.21	$5.47	$3.34	-$1.41	$7.42
18% - 20%	$6.28	$12.07	$15.68	$13.02	$9.92	$8.58	$6.72	$11.78
> 20%	$7.96	$15.71	$20.50	$19.03	$14.96	$15.68	$16.29	$16.78
Average Bill Impact	***$1.28***	***$4.59***	***$7.37***	***$4.41***	***$0.01***	***-$3.58***	***-$14.56***	***$1.41***
Customers in Use Bin	***17.4%***	***18.4%***	***16.6%***	***19.6%***	***9.3%***	***8.9%***	***9.8%***	***100.0%***
Percent Who Save	***38.4%***	***20.1%***	***13.1%***	***23.1%***	***44.0%***	***74.0%***	***95.2%***	

Detail of Rates for SmartSacramento® Pilot

SmartSacramento® Pilot Residential Rates

Effective Summer 2012 and 2013 Only*

Time-of-Use (TOU)

		Standard	Low Income
System Infrastructure Fixed Charge		$10.00	$3.50
Electricity Usage Charge ($/kilowatt-hour)			
Peak Time-of-Use Price		$0.27	$0.20
Off-Peak Prices	Base Usage	$0.0846	$0.0550
	Base-Plus Usage	$0.1660	$0.1162
	Low-Income Cap		$0.1660

Critical Peak Price (CPP)

		Standard	Low Income
System Infrastructure Fixed Charge		$10.00	$3.50
Electricity Usage Charge ($/kilowatt-hour)			
Critical Peak Price		$0.75	$0.50
Off-Peak Prices	Base Usage	$0.0851	$0.0553
	Base-Plus Usage	$0.1665	$0.1165
	Low-Income Cap		$0.1665

Combination TOU Overlay and CPP

		Standard	Low Income
System Infrastructure Fixed Charge		$10.00	$3.50
Electricity Usage Charge ($/kilowatt-hour)			
Peak Time-of-Use Price		$0.27	$0.20
Critical Peak Price		$0.75	$0.50
Off-Peak Prices	Base Usage	$0.0721	$0.0468
	Base-Plus Usage	$0.1411	$0.0987
	Low-Income Cap		$0.1411

* SMUD reserves the right to extend the application of the rates beyond this period.

Residential Off-Peak Tier Allowances

KWh Allowance Level	KWh in Off-Peak Period	
	Standard	With Wells
Base Usage	0 – 700	0 – 1,000
Base-Plus Usage	>700	>1,000
Low-Income Cap	>1,300	>1,600

Summer Time-of-Use Periods

Rate	Days in Effect	Hours in Effect
Time-of-Use	Weekdays, except Independence Day (July 4th) and Labor Day	4:00 p.m. to 7:00 p.m.
Critical Peak Pricing	Weekdays, except Independence Day (July 4th) and Labor Day Limited to 12 call events per summer	4:00 p.m. to 7:00 p.m.
Off-Peak Pricing	All other hours	

Environmental Assessment

1.0 Section 21080(b)(8) of the California Public Resources Code and Section 15273 of the California Environmental Quality Act (CEQA) Guidelines (California Code of Regulations, Title 14, Sections 15000, et seq.) provide that CEQA does not apply to the establishment, modification, structuring, restructuring, or approval of rates, tolls, fares, and other charges by public agencies which the public agency finds are for the purpose of:

(1) Meeting operating expenses, including employee wage rates and fringe benefits;

(2) Purchasing or leasing supplies, equipment, or materials;

(3) Meeting financial reserve needs and requirements;

(4) Obtaining funds for capital projects necessary to maintain service within existing service areas; or

(5) Obtaining funds that are necessary to maintain such intra-city transfers as are authorized by city charter.

2.0 Section 15061(b) (3) of the CEQA Guidelines provides that where it can be said with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

3.0 The proposed action to introduce experimental residential Time-of-Use (TOU) pricing for the 4:00 p.m. – 7:00 p.m. weekday afternoon period during the summer months, while retaining the Base Usage and Base-Plus Usage quantities, and reducing the corresponding prices below the current rates, for 2012 and 2013 study participants, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

4.0 The proposed action to introduce experimental residential Critical Peak Pricing for a total of 36 summer hours on 12 chosen days, for select 2012 and 2013 study participants, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

5.0 The proposed action to evaluate residential customer response to an experimental rate that combines a daily

Time-of-Use overlay rate with substitute CPP pricing during 36 summer hours on 12 chosen days, for select 2012 and 2013 study participants, is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore, this rate action is exempt from the requirements of CEQA.

6.0 In the event that the proposed actions to restructure the non-demand rate for small commercial customers and the demand rate for small commercial customers detailed in Volume 1, Sections 3.0 and 5.0 of the Environmental Assessment is not approved by the Board, these rates will be included as part of the SmartSacramento Pilot Rate study. This restructure is for the purposes set forth in (1) through (4) of Section 1.0 of the Environmental Assessment. Therefore this rate action is exempt from the requirements of CEQA.

Glossary of Terms

Base Usage

Base Usage is a standard allotment of electricity at a certain price. Typically the Base Usage price is lowest and prices rise thereafter.

Base-Plus Usage

Base-Plus Usage is electricity usage above the standard allotment. Typically the Base-Plus Usage price is greater than the Base Usage price.

Closed Electric Rate

In May 1996, SMUD closed the discounted rate for customers with electric space heat. Customers on the rate at that time are grandfathered on the rate until such time as they move out. At that time the premise rate becomes the standard electric-heat rate.

Cooling Degree Day

A cooling degree day is a unit used to relate the day's temperature to the energy demands of air conditioning.

Critical Peak Pricing (CPP)

A rate whereby the price of electricity is significantly higher during periods of high electricity use called Critical Peak events, which are limited to a pre-determined number of days and hours for the summer season. The critical peak event days are not pre-determined but customers are notified in advance of a CPP event. The CPP rate offers lower prices during all other times. The price of electricity during a CPP event is significantly higher than the price during non-event days. By reducing electricity use during CPP events, the customer has an opportunity to significantly reduce the annual electric bill.

Direct Load Management

Load management is the process of balancing the supply of electricity on the system with the electrical load by adjusting or controlling the load rather than the power station output. This can be achieved by direct intervention of the utility in real time, by the use of frequency sensitive relays triggering circuit breakers, or by time clocks, or by using special tariffs to influence consumer behavior. When the ability to modify a customer’s load (that is, cycle off their air conditioner or change their thermostat setting) is in the hands of the utility, it is called *direct load management* or *direct load control*.

EAPR

A discounted Energy Assistance Program Rate for low-income customers meeting specific eligibility criteria.

EAPR Cap (or ceiling)

This is the number of kWh above an EAPR customer's Base Usage allowance that is qualified for the EAPR discount.

Marginal Costs

Marginal costs refer to the long-term incremental cost of adding a new unit of energy or load to SMUD's system. SMUD bases its marginal energy costs on the expense of operating a natural-gas peaking power plant. Marginal capacity costs refer to the debt service and fixed costs associated with the power plant.

Maximum Demand Charge

Large commercial sites can impact the community's electricity grid and energy supply during the summer (June through September). This charge is assessed to maintain the additional capacity needed to meet your highest electricity usage. This was formerly called the "Demand Charge."

Opt-In, Opt-Out

These terms refer to the choice options presented to prospective participants in a particular program or pricing offer. An opt-in participant has the choice to voluntarily accept an offer, while an opt-out participant is placed on the offer and must request to be removed.

Site Infrastructure Charge

Formerly called "Facility Charge," this charge covers the additional costs associated with providing service to an individual, medium, or large commercial site. These distribution costs primarily include substations and power lines. This charge allows us to provide exceptional equipment and reliable service to each of our larger commercial customers.

Smart Meter

These meters report electricity consumption on an hourly basis, sometimes more frequently and provide for two-way communication between the home and the utility. This enables the utility to explore pricing that varies by season and time of the day, rewarding customers who shift electricity use to off-peak periods. The smart grid also allows a utility to give customers timing and pricing options and can aid in outage reporting and management.

System Infrastructure Fixed Charge

Formerly called the "Service Charge," this monthly flat-rate charge covers a small portion of the shared fixed costs necessary to run our operations, including power lines, transformers, trucks, and the customer call center. All of our customers contribute and benefit from the upkeep of these services and resources.

Time-of-Use rate

Time-of-use rates vary so as to reflect the purchase cost and customer demand of energy at various times throughout the day. The time-of-use rate better transmits the cost signal to the customer, improving the incentive for conservation.