*League of Women Voters of California*
*Education Fund*

# Energy Update Study

## Study Guide


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## Introduction

**Following the deregulation** of California's electric system that resulted from passage of Assembly Bill 1890 in 1996, the League of Women Voters of California's (LWVC) interest in the topic of energy grew steadily. Since 1997, League committees have explored the implications of that legislation, and energy was chosen as a League Issue for Emphasis in 2001.

During the 2001-2003 biennium, League committee members became aware of the profound impact of the effort to introduce competition into what had been a regulated monopoly system, one in which exclusive service areas were granted and a single company provided generation, transmission and distribution of power for each area. At their recommendation, delegates to the 2003 LWVC convention called for a study to update our existing state Energy position.

The LWVC's existing Energy position was last revised in 1980. It strongly supports conservation, efficiency and renewable sources of energy. But the public policy problems associated with a new electric system having both state regulation and a free market—a hybrid system—are different in kind and in magnitude from those addressed before.

Major shifts in regulatory roles and jurisdictions have come about, with new and greater demands placed on the system infrastructure. Generating electricity is now a competitive business. The state's three major investor-owned utilities were required to sell most of their generating units to out-of-state utilities and merchant generators. Policy makers are grappling with the complexities of managing the resulting system. Hence the urgency of updating our position.

During its work, the study committee has developed valuable contacts with the energy policy community. These have become well-established and influential; the League is clearly recognized as a voice for the public. Committee members have participated in workshops and provided consultation to agencies on public participation issues.

Early in 2005, the LWVC presented two successful public workshops, titled "Keeping the Lights On," in Los Angeles and San Francisco, in conjunction with the California Energy

Commission and the California Public Utilities Commission, and the cosponsorship of the Commonwealth Club of California and Town Hall Los Angeles. Panelists represented consumers and their advocates; merchant generators; utilities, both public and investor-owned; regulators; and legislators. Reports on the events were uniformly favorable and appreciative of the workshops' educational value. And the experience further strengthened the LWVC's position as a major public representative in the energy community.

These and other public meetings fed valuable content into the update study as the committee learned what issues were important, and heard varying viewpoints from the many stakeholders in the public debate. Public officials, nonprofit leaders, academics and industry leaders all have been generous in giving time for interviews and advice.

The study committee has been particularly fortunate in having members who are experts with backgrounds in environmental and industrial fields. Equally valuable has been the inspiring and hard-working leadership of its chair, Jane Turnbull. The rapid developments in the electric system issue have demanded extraordinarily intense research and information gathering over these years, which could not have been accomplished without Jane's example and leadership.

Members of the writing committee for this Study Guide are: Jane Turnbull, chair, Jane Bergen, Jane Bahr, Suzanne Phinney, Mignon Marks, Charlotte Pirch, Monica Semples and Ellen Yeoman.

We are proud of the outcome of our work, but change continues. New problems and challenges are arising every day, and more work awaits us to keep abreast of the issues.

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The authors of the Study Guide extend their thanks to other League members who offered support and comments in its preparation. Inevitably this list must be incomplete, but we would like to mention the following: Jo Anne Aplet, George Bunyard, Ann Coombs, Rico Cuneo, Elizabeth Eels, Stanley Gold, Lyn Harris Hicks, Nancy Hobbs, Jean Holmes, Liz Kruidenier, Lois Ledger, Rita Norton, Judy Peck, Phyllis Stanley and Leslie Stewart.

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**The Energy Study Committee**

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## Section 1: What We Pay For—Anatomy of an Electric Bill

**Through their electric bills,** Californians pay for the immediate cost of providing electric service, naturally enough. But they also pay a number of other charges, many related to the tumultuous times following deregulation of the state's electric industry. To understand just what goes into an electric bill it may be useful to start at the beginning.

California customers receive electricity from three types of businesses:

- ESPs (energy service providers; essentially non-state-regulated private companies that own generating units under Federal Energy Regulatory Commission oversight)
- Publicly owned utilities such as municipal utilities and rural electric cooperatives
- IOUs (investor-owned utilities)

About 15 percent of all the power delivered in the state is provided by ESPs, mostly to large customers under what are known as direct-access contracts. Another 25 percent is provided by the publicly owned utilities, and the rest, about 60 percent, by the IOUs.

The principal IOUs in the state are Pacific Gas & Electric (PG&E), Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E). Together they serve 16 million customers. IOUs headquartered outside California serve small numbers of customers in the far north of the state and around the Lake Tahoe Basin. The rates of the IOUs, unlike those of the other entities, are regulated by the California Public Utilities Commission (CPUC).

Besides the cost of generating electricity, costs are involved in moving it to customers. High-voltage transmission lines carry the power to substations which step down the high voltages (too high for any but the biggest users); from there, lower-voltage distribution lines move it on toward individual customers.

Although the IOUs own and maintain their own transmission lines, the total complex network of such lines, generally referred to as the *grid,* is managed day-to-day by the California Independent System Operator (CAISO), a not-for-profit corporation established by the legislature for this purpose. Technical staff members at CAISO are responsible for ensuring that whenever a light switch is flipped or an appliance turned on, a sufficient flow of electrons will be available—an awesome technical challenge.

### Basic electric charges

Bills issued by the different types of providers look different, but the top items are always the charges for the basic services—generation, transmission, distribution. These charges are calculated by multiplying the kilowatt hours (kWh) used in the billing period by the rate per kWh.

### Additional charges originally intended to support the industry as a whole

Besides the basic charges, charges are levied by the state for support and development of the industry itself. They reflect shifts and changes in direction in state energy policy over the years, and include:

- **Nuclear Decommissioning:** A mandated charge that collects money to restore the sites of nuclear power plants after they are removed from service.

■ **Public Goods Charge** (alternately shown as Public Benefits Charge or Public Purpose Programs). A charge that funds several state-mandated programs–for assistance to low-income customers, for energy efficiency, for new renewable resources and for research and development of more efficient and cost-effective energy sources.

Other charges arise out of the 1996 deregulation of the industry. They do not apply to publicly owned utilities or irrigation districts (some of which also generate electricity), such as Sacramento Municipal Utility District, Los Angeles Department of Water & Power, City of Palo Alto Utilities or Turlock Irrigation District. They are:

■ **Competition Transition Charges (CTC):** Part of the original deregulation arrangement. Utilities were allowed to charge rates above the CPUC-approved market price in order to recover what are termed "stranded costs"—continuing obligations for past investment in power plants and power-purchase contracts which would not be recovered in a competitive environment. At the same time a retail rate freeze was imposed on the IOUs to protect residential and small commercial customers. When electricity prices skyrocketed in 2001 and rates were frozen, the utilities whose rates were frozen were unable to collect the CTC. Some bills now show a negative CTC; the intention is to carry these amounts forward and collect them later.

■ **Trust Transfer Amount (TTA):** Another part of the deregulation arrangement. Bonds were issued to refinance part of the IOUs' investments in electric generation facilities and purchased power contracts. This was done to permit a 10 percent rate reduction to residential and small commercial customers as a sweetener in the deregulation legislation. For some customers, those using more than 130 percent of baseline quantity, this reduction expired in 2001. The TTA belongs to a public trust, with the IOUs collecting it on behalf of the trust. (Over 10 years this charge will actually amount to more than customers received from the 10-percent reduction. In effect the rate-payers have been funding their own rate reduction.)

■ **Department of Water Resources (DWR) Bond Charge: A** charge to recover the cost of bonds issued to finance a portion of the high-priced power purchased under long-term contracts by DWR during the height of the electricity shortage of 2000-2001. DWR bond revenues are collected on behalf of DWR and do not belong to the utility.

Some charges result from the financial difficulties the IOUs experienced during the electricity shortage of 2000-2001. They are peculiar to specific companies:

■ **Energy Cost Recovery Amount (PG&E only):** The charge approved by the CPUC to enable PG&E to emerge from bankruptcy.

■ **Historic Procurement Charge (HPC) (Southern California Edison only):** A charge levied to allow SCE to recover its past under-collections.

■ Customers of San Diego Gas & Electric have no comparable charge. At the peak of the 2000-2001 crisis, rates of SDG&E customers were no longer frozen because they had finished paying off their CTC charges. Although rates were predicted to go down after the rate freeze ended, in San Diego they went up.

▶ *It would be a useful exercise to look at your household or business bill to see what part of your electricity cost is from basic charges, what part from additional charges.*

## Tiered electricity pricing

In California, as in most states, utilities record the number of kWh each customer uses per month and charge an hourly rate for this usage. The hourly rate increases in tiers as total monthly usage increases—for instance, a customer whose electricity usage exceeds a set number of kWh that is considered to be the *baseline quantity,* will pay more for each additional kWh used. There are several tiers and the hourly rate goes up a few cents each time a tier threshold is crossed. Allowances are made for climate differences by varying the baseline quantity from region to region, and from summer to winter.

This tiered rate structure is important because it encourages conservation. But this structure as employed today does not generally reflect dynamic changes in the value of electricity. Consumers are charged the same hourly rate 24 hours a day, even though the cost of producing power varies considerably. Usually only the most efficient plants operate late at night, resulting in lower actual costs of production. Less-efficient plants are put in service during the day, and thus costs are higher. The least-efficient units go on line at times of peak demand, so that costs are even higher—notably during hot summer afternoons when power plants strain to meet demand. A number of experimental pricing services are currently under way. These are attempts to further conservation by more closely aligning rates with real-time costs, producing a rate structure that would encourage off-peak usage and lessen the strain on the system as a whole.

Commercial and agricultural rates are structured differently. These users may pay a charge (called an "energy charge," or sometimes a "commodity charge") for the electricity actually used, and a "demand" or "capacity charge" based on the kilowatts a customer expects to need–and that thus must be kept available—to meet its peak needs. In general summer rates are higher than winter rates.

Agricultural users fall into a special category. Agriculture is critical to the state's economy, and food security is a high societal priority. For these reasons agriculture receives somewhat favorable treatment. Also, agriculture has complex energy-use patterns. Power usage has not been analyzed as closely as for other rate groups. (*See Section 6: "Interrelationships of Energy and Water."*) Agricultural rates may still be considered "high," but they are not notably different from residential rates.

As an example of the complexity and varied scope of our current rate structure, PG&E lists separate tariff schedules for 20 different types of residential service, 12 types of general commercial services, six types for street lighting and traffic control, three net metering services, six types of agricultural services, and 10 to 15 types of interruptible or scheduled load reduction programs.

## Green energy programs

A growing number of California utilities offer "green energy" programs. These voluntary programs let residential, commercial and industrial customers choose to support additional power production from wind, solar or other clean, renewable resources by paying an additional cost per kilowatt-hour. The National Renewable Energy Laboratory reports that more than 500 utilities in 33 states offer green pricing programs. Notable among these is *PaloAltoGreen* which ranks second nationally based on the percentage, 7 percent, of the city's residents and businesses that have enrolled in the program. Sacramento Municipal Utility District also ranked in the top ten nationally with a 4.6 percent enrollment.