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# NEW OPTIONS FOR AGRICULTURAL CUSTOMERS: California's Electric Industry Restructuring

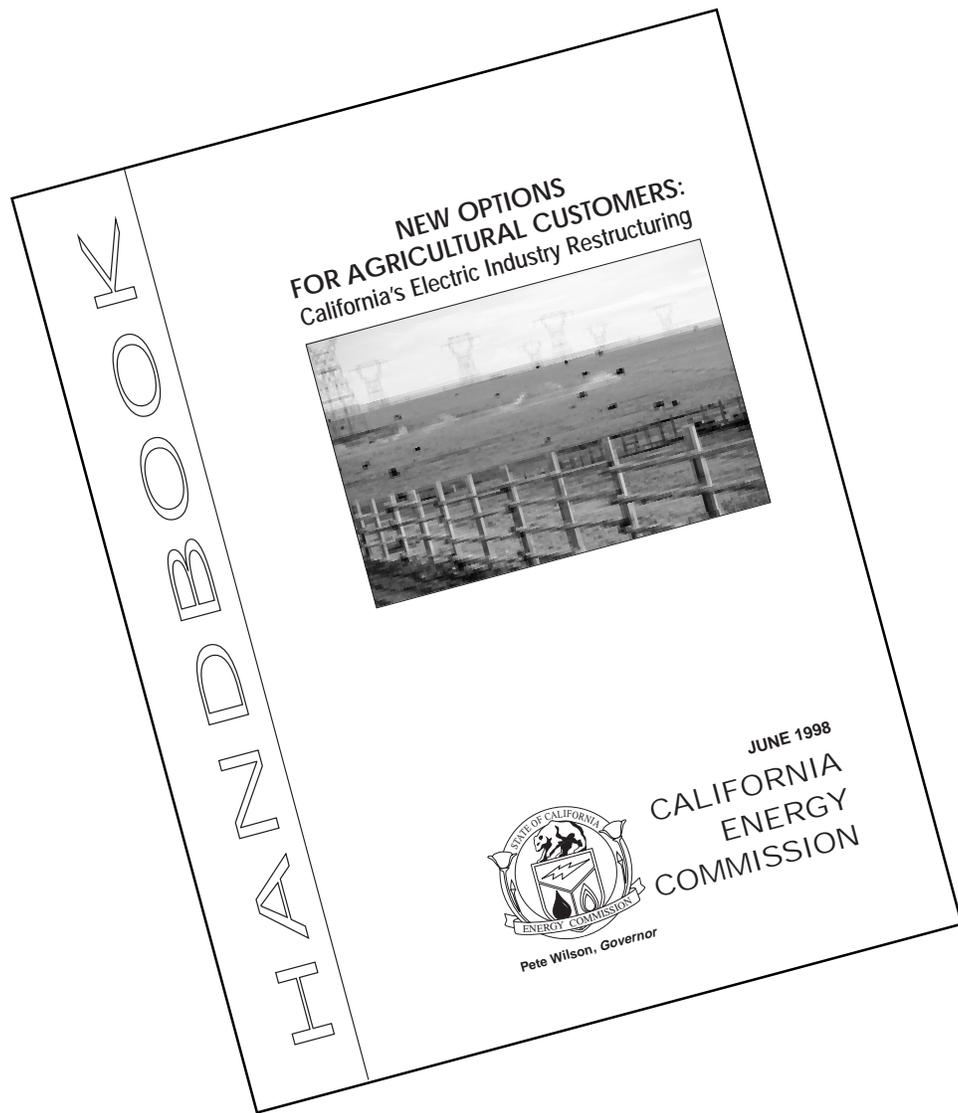


Pete Wilson, *Governor*

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**NEW OPTIONS FOR AGRICULTURAL CUSTOMERS:  
California's Electric Industry Restructuring**

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# CHANGES IN CALIFORNIA'S ELECTRIC INDUSTRY

## California's electricity supply is becoming competitive.

Thanks to a restructuring of the state's electricity industry that took effect March 31, 1998 \*, most agricultural customers are now able to shop around, compare prices and services, and purchase electrical power from the supplier who best meets their needs. As a result, farmers can better manage their energy bills and production costs.

Like other consumers, however, some farmers are unsure whether to remain with their present utility or change to a competing supplier. This handbook outlines how the state's newly competitive electricity supply system works. It helps to explain the advantages and disadvantages that competition offers to California's agricultural community.

## BACKGROUND

On September 23, 1996, Governor Pete Wilson signed into law Assembly Bill 1890 \*\*. This law changes the present electricity system supplying the needs of California homes, businesses, industry and farms. Electricity services consists of four major elements: generation of electricity at the power plant, transportation of electricity along high-voltage transmission lines, distribution of electricity to customers using lower-voltage distribution lines, and metering and billing services to assure accurate charges for electricity consumed.

The legislation:

- Allows retail competition in the areas served by investor-owned utilities (IOUs) that are regulated by the California Public

Utilities Commission (CPUC). These include Pacific Gas & Electric, San Diego Gas & Electric, Southern California Edison, Bear Valley Electric, PacifiCorp and Sierra Pacific Power. It also allows customers to select their electricity supplier among publicly owned utilities that choose to open their territories to competition. (See Appendix I).

- Changes what had been a highly regulated electricity industry to allow competition to set the price of electrical generation. New energy service providers may replace the current utilities as the source of electricity generation as well as providing metering and billing services.
- Permits buying, selling or brokering electricity for individual customers or customer groups.
- Allows customers to choose specific mixes of "green" power from renewable sources.
- Permits utilities to recover certain costs from ratepayers through a Competition Transition Charge (CTC).
- Mandates a 10 percent rate reduction for residential and small commercial customers effective January 1, 1998 \*\*\* and establishes the goal of an additional 10 percent cut by the year 2002.
- Provides funds for energy conservation, research, development and demonstration projects (RD&D); assistance to low-income consumers, and renewable power generation.

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\* The original January 1, 1998, starting date changed to March 31, 1998.

\*\* See the Supplement section to this report for further details on AB 1890, the legislation that restructures the electric industry in California.

\*\*\* January 1, 1998, 10% rate reduction remains effective despite change in starting date; small commercial is defined as less than 20 kilowatt peak demand.

## PREPARING FOR CHANGE

### KNOW HOW YOU USE ELECTRICITY

Agricultural customers will receive numerous offers from their present supplier or new providers who want to sell them electricity. In order to choose the option that is best for them, farmers should understand:

- Their present billing rates and load profiles;
- Terms and conditions of their present contracts; and
- Ways to determine the best rate for their particular use patterns.

### EVALUATE ALL OPTIONS

Agricultural energy consumers will have new opportunities to reduce electricity costs. However, for farmers to benefit from a competitive marketplace, they must properly evaluate the new energy market purchase options. Each energy offer should be reviewed in light of actual *electricity consumption patterns, peak demand, and opportunities to adjust farm operations to maximize savings.*

When evaluating new electric service providers, consider these questions:

- What are the terms of the contract and the length of the agreement?
- Are there any termination fees?
- If you are using a uniform electricity load, what is the average annual price per kilowatt-hour and for how long will the price be guaranteed?
- If your electricity load varies through the day, season or year, what is the most cost effective price structure to match the expected demand?
- Who will pay the incidental costs, such as the costs of metering?
- Is the electric service provider registered with the California Public Utilities Commission?

Every farm operation is unique; therefore, farmers must review their operations and their options to make the choice that best meets their needs.



## OPTIONS IN A RESTRUCTURED ELECTRIC UTILITY MARKET

There are four basic options available to farmers:

- Remain a customer of the present utility
- Choose a new electricity provider
- Become an irrigation district customer
- Switch some activities from electricity to a different form of energy

### 1. REMAIN A CUSTOMER OF THE PRESENT UTILITY

Farmers eligible to participate in the competitive market may choose to continue to receive **all** their electricity service from their current provider.

#### ADVANTAGES

- A grower need not spend time evaluating competing offers and negotiating with new service providers.
- Utilities are already responding to competitive pressures to retain customers. Growers may be able to take advantage of new rate schedules.
- A utility may offer “one-stop” energy services. For example, it might provide consulting on energy and water use, diagnostic system tests, low-cost financing,

and other types of services as part of a “value added” package.

#### DISADVANTAGES

- By remaining with the present electricity supplier, farmers may not realize maximum energy cost savings.



## 2. CHOOSE A NEW ELECTRICITY PROVIDER

Customers may elect to purchase energy directly from a different energy service provider; that is, a business enterprise other than their local utility.

### ADVANTAGES

- Electricity prices may be lower than those offered by the local utility.
- A customer can choose the offer that is most affordable and/or includes “green” power sources in all or a portion of the power purchase.
- New suppliers may offer “one stop” energy services. For example, a company might provide consulting on energy and water use, diagnostic system tests, low-cost financing, and other types of services as part of a “value added” package.

### DISADVANTAGES

- Cost savings may be limited until the competition transition charge (CTC) is fully recovered (for details on CTC, see Supplement).

## OTHER CONSIDERATIONS

In the newly competitive electricity market, suppliers will seek to bring together — or aggregate — many smaller or medium — sized customers. In this way, these suppliers — or aggregators — can economically buy and sell in bulk to meet the combined electric load. At the same time, farmers and their organizations who pool together their accounts with other customers will have a stronger bargaining position with energy providers.

In the past, cooperatives have been an effective mechanism for farmers and rural businesses to achieve greater strength in competitive commodity markets. Drawing on this experience, a new agricultural energy cooperative has been created by farmers to aggregate their agricultural accounts. The California Electric Users Cooperative (CEUC) is a statewide entity that permits farmers and food processors who are members of an agricultural cooperative to purchase electricity at a guaranteed discount (see Appendix III for additional information).



### 3. BECOME AN IRRIGATION DISTRICT CUSTOMER

Irrigation Districts often provide lower cost power than Investor Owned Utilities. In addition, eligible growers may be able to further lower their electricity costs by taking advantage of the competition transition charge (CTC) exemption granted to some irrigation districts.

Listed below are the irrigation districts who have received CTC exemptions:

- Fresno Irrigation District – 20 Megawatts
- Laguna Irrigation District – 8 Megawatts
- Lower Tule River Irrigation District – 15 Megawatts
- Merced Irrigation District – 75 Megawatts
- Pixley Irrigation District – 15 Megawatts
- South San Joaquin Irrigation District – 8 Megawatts

Farmers considering this option should determine if they are located within one of the above irrigation districts. Eligibility for CTC exemptions will be determined by individual districts, so interested applicants should apply early.

#### ADVANTAGES

- Irrigation district electricity prices may be lower than the local utility. A grower may not have to pay the CTC when leaving their current electric utility. The savings can amount to a 30 to 40 percent reduction from utility bills, depending on

the current electricity provider (Please see Appendix II for more details).

#### DISADVANTAGES

- To benefit from the CTC exemption, a farm must be operating within one of these district boundaries.



#### 4. SWITCH SOME ACTIVITIES FROM ELECTRICITY TO A DIFFERENT FORM OF ENERGY

For some tasks, agricultural customers may save money by switching from electricity to another energy source such as natural gas, diesel, or propane.

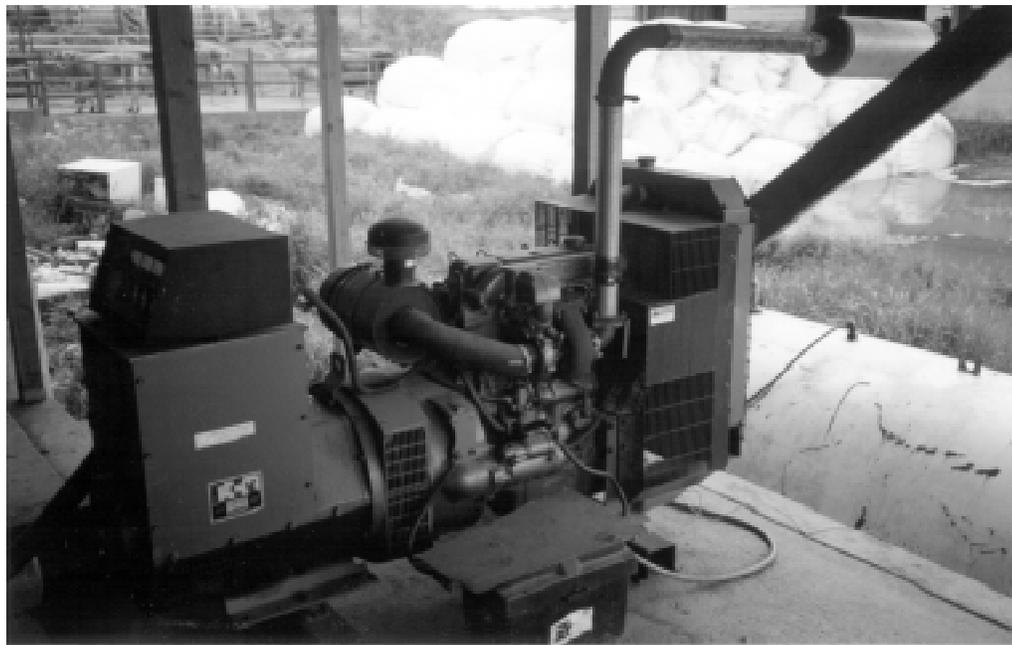
##### ADVANTAGES

- A grower may reduce electricity costs as well as a portion of the CTC that would have applied to that electricity use.
- Savings can occur if natural gas is used for pumping during summer months, because gas prices are generally the lowest and mid-day electricity prices are the highest during that season.

- The investor owned utilities may be willing to negotiate better rates and possibly offer specialized tariff schedules to discourage fuel switching.

##### DISADVANTAGES

- Using other energy sources might result in higher air pollution emissions.
- There will be capital investment costs for new equipment as well as additional maintenance costs.
- Using liquid fuels adds fueling time and increases the possibility of hazardous spills.



## ENERGY MANAGEMENT—A VIABLE OPTION

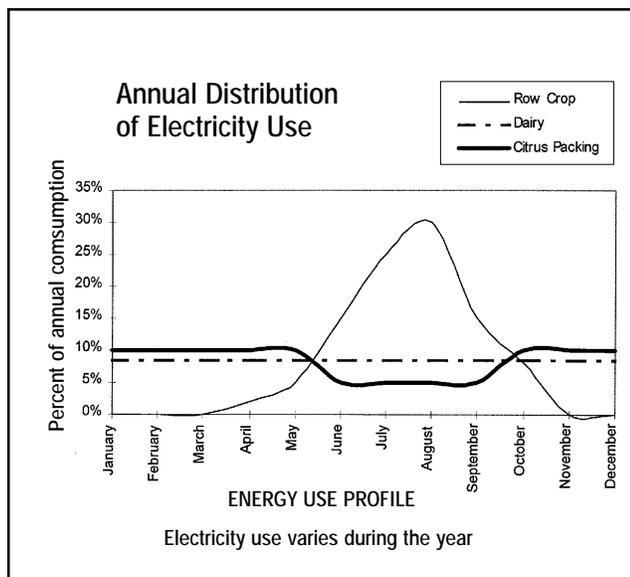
No matter which energy option farmers choose, they should also consider energy management as a way to cut production costs.

These simple energy management practices can give growers long-term control over their energy bills:

- Test your well pumps and improve pumping plant efficiency.
- Use energy efficient water-conserving irrigation practices.
- Select the best electricity rate schedule and, when possible, irrigate during off-peak hours.
- Use an integrated resource systems approach to farm management.

Energy costs are time sensitive. To take full advantage of restructuring, agricultural customers need information about energy use and demand (the maximum electricity load, in a given time interval). These are often called load profiles. Load profiles show how much electricity is being used during a set time period — calculated in hours, weeks, or months.

Knowing your load profile helps you audit your electric bills, accurately assess rate



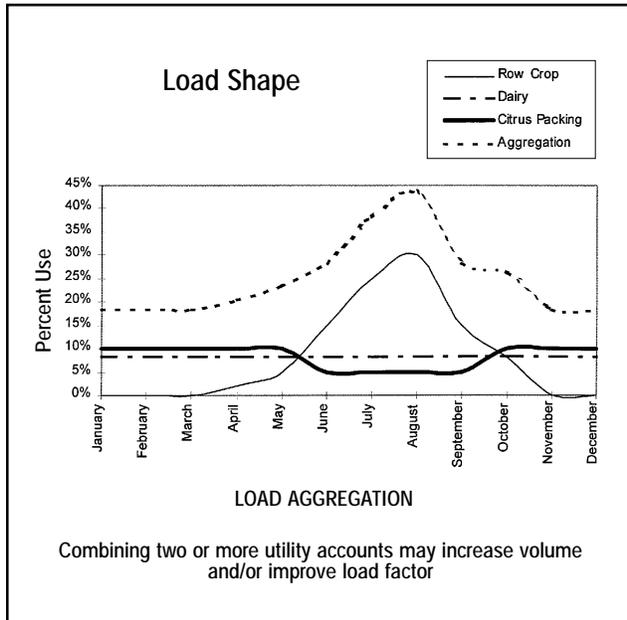
alternatives, evaluate energy-related technology investments and be better prepared to evaluate offers from new service providers. Load profile information allows you to see when peak loads occur, which will be useful to determine how to level or control those peaks. Using load management practices will maximize savings from any time-of-use rates you may be offered.

If you can build flexibility into your water delivery schedule, you can also take advantage of various rate options and other discounts. This is because the cost of electricity production varies by time of year and time of day. Cheaper power is often available to those accounts that over time provide the energy supplier with a steady load. Understanding your pumping plant capacity and predicting your annual water requirements can help you determine the best rate schedule for your operation. An indication of your load profile can be made by calculating your load factor (see Glossary). Low load factors have an impact on demand charges while a more even load — a higher load factor — usually results in lower costs. That is because utilities base their rate schedules on the load factor of each account.

As an example, accounts using 500 to 700 kilowatt hours a year, with electricity demand concentrated over a few months, are considered low-load factor accounts. Farmers with this consumption pattern can save money by avoiding pumping during weekday afternoon hours. To see if you can take advantage of this cost savings, determine if your water system can deliver enough water during the other pumping hours. If it can't, consider adopting new water management practices to capture the savings.

By aggregating — pooling together several accounts — farmers may find additional opportunities to reduce costs. Commodity mutual organizations, farm cooperatives, and other agricultural organizations may be able to aggregate your account with that of

many other farmers. By joining together, farmers may improve load factors and negotiate a better rate for the combined load. Stay informed through your local grower organizations about opportunities to combine utility accounts to increase volume and/or improve load factor.



**REMEMBER**

- The new market presents both opportunities and uncertainties.
- California’s electricity markets will continue to evolve both during the transition period (1998-2001) and when the fully competitive market is in place in the year 2002.
- To take maximum advantage of the new market, you will need to learn about your energy load profiles, electric rate options and cost-effective energy management systems.
- If you have the ability to shift electric loads to lower cost time periods, you may lower your electricity bills.
- Energy management is an important tool to control energy costs.
- CTC costs can be avoided by purchasing power from selected irrigation districts.
- As with most commodities, the more electricity you purchase, the lower the per unit price; therefore, consider aggregation.

# GLOSSARY

## ENERGY MANAGEMENT

Energy management includes practices to alter the time of use or amount of energy used at any given time. Some practices used include:

- Changing the way energy-using equipment is operated;
- Using different irrigation practices or equipment to reduce energy consumption; and
- Using electric-load aggregation methods and/or utility rate selection to take advantage of best rates for the specific application.

The effectiveness of the energy management practices you have chosen to implement can be determined by measuring the output quantity (crop yield) per unit of energy use (cost of energy).

## CONNECTED LOAD

The sum of the rated capacities of all of the customer's equipment that can be connected to the utility's electric distribution lines at any one time.

## LOAD FACTOR

A percent indicating the ratio of the amount of electricity a customer used during a given time period and the amount that would have been used if the usage rate had stayed at the customer's highest demand level during the whole time.

## ANNUAL LOAD FACTOR FORMULA

$$\frac{\text{Total yearly electricity consumption} \times 100}{\text{Peak demand} \times 8760}$$

## PEAK DEMAND

The highest electricity usage, measured in kilowatts (kW), during a given time period. Certain electric meters may record both peak demand and electricity use.

## RATE SCHEDULE

A tariff sheet approved by the California Public Utilities Commission for the Investor Owned Utilities, setting forth the charges and conditions for a particular class or type of service in a given area or location.

## SUPPLEMENT: PROVISIONS OF AB 1890

*The Electric Utility Industry Restructuring Act* (Assembly Bill 1890) makes the generation of electricity competitive in California. The legislation became law on September 23, 1996.

Before restructuring, a single utility provided each customer with generation, transmission, distribution, and metering and billing of electricity. As of March 31, 1998, the new structure allows customers in most, but not all, existing electric utility service areas to choose their electric generation supplier.

Restructuring also brings changes to the transmission of electricity. Previously restricted transmission facilities will be opened to power generators on a fair and equitable basis, overseen by a new organization, the Independent System Operator (ISO). The ISO has been given the responsibility for assuring reliability of the high voltage transmission system. Local utilities will continue to distribute electricity.

The following section provides a summary of key concepts of the new restructuring legislation:

### THE NEW MARKET STRUCTURE

- **Direct Access** — After March 31, 1998, all customers located in the service territories of the investor-owned utilities (IOUs) — Pacific Gas & Electric, San Diego Gas & Electric, Southern California Edison, PacifiCorp, Sierra Pacific Power, or Bear Valley Electric — will be allowed to shop for power in an open market. No longer will customers be restricted to buying power only from their local utility company. They can now compare deals and pick the one which best meets their needs. Although Kirkwood Electric Co. is also regulated by the CPUC, the CPUC did not require it to offer direct access at this time.
- **Independent System Operator (ISO)** — Currently, the IOUs own and operate a

large portion of the state's transmission system. To increase reliability and provide new power producers equal opportunity and ability to deliver their supplies, AB 1890 creates an independent, statewide transmission system operator. The IOUs retain ownership of their transmission facilities, but are required to transfer operational control of the facilities to the Independent System Operator (ISO).

Vesting operational control of the high voltage transmission system with the ISO is designed to ensure that owners of the transmission system cannot favor their own generation facilities over competing generators in providing transmission access. The ISO will control and operate the state's transmission system to schedule delivery of electric power supplies, and ensure all standards for transmission service are met. Since these transmission lines are the electrical "highways of commerce," the ISO will ensure that no particular buyer or seller of electricity can block access by others.

Local distribution lines will continue to be operated by the existing electric utilities. The IOU utilities will be required to operate the distribution system in such a way that customers have to be provided direct access to any seller of electricity operating in their area. In addition, the ISO has the responsibility to maintain overall electricity system reliability. The ISO will maintain reserve generators which can provide additional electricity in the event that a generator owned by an energy service provider fails to operate or can not deliver the required amount of power.

Electric service reliability will remain the same regardless of the choice of service provider an individual consumer makes; that is, to remain with the current utility or purchase power from a new energy service provider.

- **Power Exchange (PX)** — Another important element of the restructured market is the newly created Power Exchange (PX). The PX will operate like a commodities market where power producers will compete to sell their electricity generation in response to bids submitted by buyers.

The PX creates a “pool” or “spot market” where price information is publicly available. The PX solicits bids from electricity buyers and generators and chooses the lowest generation bidders until the PX has enough electricity supply to meet requests for power. PX prices change on an hourly basis.

Participation in the PX is voluntary for all buyers and sellers other than the IOUs. For the four-year transition period, the IOUs will be required to bid most of their generation into the PX and buy the power they need to meet their customer demands from the PX. In contrast, the new power generators will have the option to sell power directly to consumers.

Many customers will pay for electrical power based on the PX price, either directly through their local utility or through a private power supply contract with terms that are pegged to the PX price. Thus consumers who choose to enter into private contracts for power where the terms, conditions and price are not public knowledge may use public information from the PX to gauge the attractiveness of supply or service offers they receive.

- **Load Aggregation** — Aggregation is a term applied to the action of new energy providers gathering customers together and providing electricity services to the combined load. A person or company can specialize in forming buying groups to enable customers to take advantage of larger volume power sales.

#### TRANSITION COST RECOVERY

- **Stranded Investments**— IOUs have made investments in utility infrastructure, including major power generation stations,

in order to meet the CPUC requirement that they provide sufficient electricity to meet California’s demand. These investments were financed by the utilities, based on the assurance that repayment of the debt could be made through future electricity sales. In the restructured market, some of these power plant assets may become stranded; that is, they won’t be able to operate competitively in the new marketplace. California’s restructuring legislation decided that virtually all customers should pay a competition transition charge to all IOUs to meet past financial obligations made on the customer’s behalf.

- **Competition Transition Charge (CTC)**— The new electricity restructuring legislation provides an accelerated recovery of the IOU investments through a Competition Transition Charge, or CTC. The CTC for investor-owned utilities varies by utility.

Recovery of utility costs was already built into the existing regulatory structure and is included in rates charged to all customers. If there were no transition to a competitive market, customers would continue to repay these costs to utilities through their normal electricity bills. Consequently, the CTC does not result in an increase in electricity rates from current levels and should not be viewed as an additional cost. The CTC is determined by multiplying a CTC rate by electrical energy consumption. It appears as a dollar cost on some customer bills at this time, and all IOU customer bills by June 1, 1998.

Several publicly owned utilities are now considering whether to offer Direct Access during the transition period and impose a CTC, if necessary. The CTC will also vary significantly among public utilities.

#### REDUCING THE CTC COST

Up to 185 megawatts (MW) of irrigation district load is exempt from paying the CTC costs. Of these, 101 MW have been allocated by the California Energy Commission to

qualifying districts as required by AB 1890. At least 50 percent of this exemption is to be used for agricultural pumping. In addition, water pumping loads served by members of the Southern San Joaquin Valley Power Authority and the Eastside Power Authority are exempt from the CTC. The legislation also specifies that the Merced Irrigation District will receive a 75 MW CTC exemption.

These benefits, however, are only available to customers within the selected irrigation district boundaries. Other farmers can reduce the amount paid by taking actions which lower electricity consumption. Since the CTC amount paid with each bill is the CTC rate multiplied by electricity consumption, reduced electricity use will lower the CTC paid. Modifications to production equipment or operations, changes in manufacturing processes, fuel switching, conservation efforts, or other activities which reduce electricity consumption will lower that customer's CTC payment.

Customers who completely terminate electricity service are not responsible for CTC (for example, individuals or firms that physically leave the utility service area). The CTC does not apply to emergency equipment, nor to any load served by non-mobile cogeneration or self-generation after June 30, 2000.

#### ELECTRIC RATE FREEZE AND REDUCTIONS IN RATES

Regulated IOU rates for agricultural, residential, industrial, and large commercial customers were frozen at their June 1996, levels until utilities recover their generation related uneconomic costs through the competitive transition charge or until March 31, 2002, whichever is earlier. Starting January 1, 1998, rates for residential and small commercial customers (defined as 20 kilowatts or less peak demand) were reduced by 10 percent and will remain at that level until utilities recover their generation related uneconomic costs through the competitive transition charge, or until March 31, 2002, whichever is earlier.

- **Electric Rate Components** — Current rate structures often bundle fixed costs with

variable energy rate components. In the new competitive energy market, rates are separated into functions and services: generation, transmission, distribution, retail services, CTC, and public interest programs (energy efficiency, research and development, renewable energy, and low-income programs).

The appearance of bills will change and offer greater information about the components of service provided. This will be helpful information for some customers who are assessing whether or not to change providers; they will be able to see the portion of their bill that is for generation services and ancillary services. This is the only portion of electricity restructuring that is open to competition at this time.

#### PUBLIC INTEREST FUNDING

The restructuring legislation also established funding for public interest programs to be allocated during the four-year transition period: \$248 million for the Public Interest Energy Research Program (PIER); \$540 million for the Renewable Technology Program; and about \$912 million for the California Board for Energy Efficiency.

The Energy Commission will allocate \$62 million a year from 1998 to 2001 to fund research, development and demonstration projects in the following areas: renewable energy technologies, environmentally preferred advanced generation, energy-related environmental research, end use energy efficiency and strategic energy research.

The Energy Commission will also provide \$540 million to consumers and producers of renewable energy, such as wind, solar, geothermal, biomass, landfill gas and small hydroelectric power. The funding will be collected from ratepayers of investor-owned utilities over the next four years. This program will provide funds to renewable energy generators, as well as credits for consumers purchasing renewable electricity from a non-utility provider.

The California Public Utilities Commission created the California Board for Energy Efficiency to implement energy efficiency programs. The purpose of the Board is to oversee the independent administration of energy efficiency services designed to transform markets by: (a) providing cost-beneficial energy efficiency services to customers not normally served by markets; (b) offering customers meaningful information on the costs and benefits of energy efficiency measures; (c) reducing market barriers to investments in energy efficient products and services; and (d) creating a sustainable and competitive energy efficiency services market.



## APPENDIX I : PUBLICLY OWNED UTILITIES PARTICIPATION IN RESTRUCTURING

Section 9602 of AB 1890 directed local regulatory bodies (city councils or boards) of publicly owned utilities in California to decide whether or not to allow their customers direct access to other energy providers. If the direct access decision is affirmative, the same section of the law specifies that direct access start by January 1, 2000, or by two years after direct access starts for the investor-owned utilities. (For the investor-owned utilities the scheduled start-up date was March 31, 1998, timed to coincide with the start date for the ISO and the PX.) Phase-in of direct access for publicly-owned utilities is then to be completed by the end of the first decade of the next century. Also, if the publicly-owned utility board decides not to allow direct access, AB 1890 prevents that entity from collecting a competitive transition charge (CTC) that is intended to help recover costs of resource investments that become uneconomic due to electric industry restructuring (CTCs are also intended to help pay for employee-related transition costs resulting from restructuring).

CALIFORNIA MUNICIPAL UTILITIES	Direct Access Dates
Anaheim Public Utilities Department .....	2000
Azusa Light & Water Department .....	n.a.
Banning Electric Department .....	n.a.
Burbank Public Service Department .....	2000
Colton Electric Department .....	n.a.
Glendale Electric Department .....	2000
Imperial Irrigation District .....	n.d.
Los Angeles Department of Water & Power .....	d.d.
Merced Irrigation District .....	n.d.
Modesto Irrigation District .....	1998*
Northern California Power Agency	
Alameda Bureau of Electricity .....	2000
Biggs Electric Department .....	n.a.
Gridley Municipal Utilities .....	n.a.
Healdsburg Municipal Electric Department .....	2000
Lodi Municipal Electric Department .....	2000
Lompoc City Government .....	n.a.
Palo Alto Electric Utility .....	1998*
Plumas-Sierra Rural Electric Cooperative .....	1999
Roseville Electric Department .....	2000*
Truckee-Donner Public Utility District .....	n.a.
Ukiah Municipal Electric System .....	n.a.
Pasadena Water & Power Department .....	2000
Riverside Utilities Department .....	2000
Sacramento Municipal Utility District .....	1997*
Redding Electric Department .....	n.d.
Silicon Valley Power/City of Santa Clara .....	2000*
Turlock Irrigation District .....	n.d.
Vernon Municipal Light Department .....	n.a.

\* = has already received board or city council approval; n.a.= not available; n.d.= no decision;  
d.d.= delayed decision

## APPENDIX II: UNDERSTANDING YOUR NEW UNBUNDLED BILL

Beginning January 1, 1998, all customers of investor-owned utilities received electricity bills based on the electricity they consume and on rates that were in effect in June 1996. These rates will be frozen either through the transition period (January 1, 1998 - March 31, 2002) or until the utilities fully recover their generation-related uneconomic costs, but no later than March 31, 2002. Only residential and small commercial customers (less than 20 kW demand) receive the 10 percent rate reduction mandated by AB 1890. Agricultural customers are not eligible for the reduction.

### AGRICULTURAL ELECTRIC RATES

Starting June 1, 1998, all customers will also see greater detail in their bills. The following is a “broad” characterization of how rates applicable to agricultural customers will look.

Electricity rates for agricultural customers usually contain three elements: energy charge, demand charge, and customer charge. Energy charges vary by time of use (on peak more expensive than off peak) and blocks (first block more expensive than the second). They are assessed on a cents/kWh basis. Demand charges can be either connected-load related or demand-related charges. The first are assessed on a \$/horsepower basis and the second on a \$/kW of maximum demand. Demand charges are higher in the summer than in the winter. Customer charges are assessed on a \$/meter/month basis.

### ELECTRIC ACCOUNT DETAIL

These are some sub-components of the three charges identified above:

Energy Charge (percentages)		
	PG&E	Edison
CTC	57.4	56.7
PX (assume 2.7 cents/kWh)	20.0	33.3
Transmission	0.0	0.0
Distribution	17.0	4.0
Nuclear Decommissioning	0.6	2.0
Public Purpose Programs	5.0	4.0
<hr/>	<hr/>	<hr/>
Total	100.0	100.0

PG&E's energy charges vary from 12.0 cents/kWh for AG-1 agricultural customers to a range of 5.6 cents/kWh (off peak) to 32.9 cents/kWh (on peak) for time of use AG-R customers. For Edison's PA-2 agricultural customers, energy charges are in the range of 5.0 cents/kWh (2nd block) to 8.0 cents/kWh (1st block), and for TOU-PA customers from 4.2 cents/kWh (off peak) to 14.5 cents/kWh (on peak). The Competitive Transition Charge (CTC) is calculated as the difference between the rates, frozen at the 1996 level, and energy charges using the Power Exchange (PX) prices. Since California's major utilities are required to sell most of their generation to the PX and buy power from the PX to meet their customers needs, the PX cost is used to credit customers that buy electricity from other providers. Customers who buy power from another source will have lower energy costs to the extent that their providers electricity charges are lower than the PX costs.

### Demand Charge (percentages)

	PG&E	Edison
<b>A. Connected-load basis customers</b>		
Transmission	17.5	12.0
Distribution	82.5	88.0
<u>Total</u>	<u>100.0</u>	<u>100.0</u>
<b>B. Demand basis</b>		
a. Facilities-related component		
Transmission	18.6	4.0
Distribution	81.4	96.0
<u>Total</u>	<u>100.0</u>	<u>100.0</u>
b. Time-related component		
Transmission	18.6	27.0
Distribution	81.4	73.0
<u>Total</u>	<u>100.0</u>	<u>100.0</u>

Demand charges for agricultural customers are billed either on a \$/horsepower of connected-load or \$/kW of maximum demand. The maximum demand charge has also two components — a facilities-related charge and a time-related charge.

For PG&E customers, connected-load demand charges generally apply to single motor installations with a connected load rated less than 35 horsepower or multi-load installations aggregating less than 15 horsepower. Demand-related charges apply to single motor installations with a connected load rated more than 35 horsepower or multi-load installations aggregating more than 15 horsepower. PG&E 's connected-load basis charges for agricultural customers are in the range of \$2.20/horsepower (winter) to \$2.40/horse power (summer). Facilities and time-related components of demand-related basis range from \$1.75/kW (winter) to \$2.90/kW (summer).

For SCE customers, connected-load charges generally apply to customers whose maximum demand doesn't exceed 500 kW. Facilities and time-related charges apply to customers whose maximum demand exceeds 500 kW. SCE's connected-load basis charges for agricultural customers range from \$2.05/horsepower for PA-1 customers to \$2.40/horsepower for TOU-PA customers. Facilities and time-related components range from \$0.00/kW (winter) to \$9.00/kW (summer).

## CUSTOMER CHARGE

For PG&E's customers, customer charges range from \$1.60 per meter/month to \$40.00 per meter/month or more. Of course there are the one-time installation charges of up to \$440.00 and processing charges of up to \$85.00. For Edison's customers, customer charges and installation and processing fees are in the same range.

### Total Bill

Since demand and customer charges will be listed in the transmission and distribution charges of the tariff, the percentages of the total bill for a customer with a 50 horsepower installed motor will be approximately as follows:

<b>Agricultural Customers</b>	
Total Bill	(percentages)
CTC	44.9
PX (assume 2.7 cents/kWh)	13.4
Transmission	4.2
Distribution	34.9
Nuclear Decommissioning	0.3
Public Purpose Programs	2.3
<hr/>	<hr/>
Total	100.0

Note: The information provided are estimates from current utility rate schedules, are presented as an example and are subject to change.

## APPENDIX III: ADDITIONAL INFORMATION

- California Energy Commission  
Contacts: Ricardo Amon and Elizabeth Boynton  
1516 9th Street, MS 42  
Energy in Agriculture Program  
Sacramento, CA 95814  
(916) 654-4147  
Hotline Phone Numbers: (800) 772-3300  
or (916) 654-5106
  - California Municipal Utility Association  
Contact: Gerald Jordan  
1225 Eighth Street, Suite 440  
Sacramento, CA 95814  
(916) 441-1733
  - California Farm Bureau Federation Association  
Contact: Karen Norene Mills  
2300 River Plaza Drive  
Sacramento, CA 95833  
(916) 561-5650
  - Southern California Edison  
Contact: Dan Johnson  
Customer Solutions Department  
2425 S. Blackstone Ave  
Tulare, CA 93274
  - San Diego Gas and Electric  
Contact: Jim Spurgeon  
5875 Avenida Encinas  
Carlsbad, CA 92008  
(760) 438-6037
  - Pacific Gas and Electric  
Business Customer Service Department  
(209) 263-5575
  - Agricultural Energy Consumers Association  
Contact: Michael Boccadoro  
925 L. Street, Suite 800  
Sacramento, CA 95814  
(916) 447-6206
  - Small Farm Center  
University of California Davis  
Davis, CA 95616  
(530) 752-8136
  - Public Utilities Commission  
Electricity Education Call Center  
(800) 789-0550
  - California Electric Users Cooperative  
Contact: Fielding Thompson, Chairman  
14130 Riverside Drive  
Sherman Oaks, CA 91423  
Tel. (818) 379-7640  
FAX (818) 783-1941
- INTERNET WEB SITES
- Association of California Water Agencies  
<http://www.acwanet.com>  
(see the category: Legislation and Regulatory Issues)
  - California Energy Commission  
<http://www.energy.ca.gov>  
(see Restructuring page)
  - California Farm Bureau Federation  
<http://www.fb.com/cafb/>
  - California Public Utilities Commission  
<http://www.cpuc.ca.gov>  
(see the category: Electric Restructuring)
  - Independent System Operator  
<http://www.caiso.com/iso>
  - Pacific Gas & Electric Company  
<http://www.pge.com>  
(see the category: Electric Industry Competition)
  - Power Exchange  
<http://www.calpx.com>
  - San Diego Gas and Electric  
<http://www.sdge.com>  
(see: Electric Industry Competition)
  - Southern California Edison  
<http://www.edisonx.com>  
<http://www.sce.com>

For additional copies of this publication, please call, fax or email the California Energy Commission's Energy Efficiency Hotline.

Hotline Phone Numbers: (800) 772-3300 or (916) 654-5106

Hotline Fax Number: (916) 653-7480

email Address: [ramon@energy.state.ca.us](mailto:ramon@energy.state.ca.us)

Web Page: [www.energy.ca.gov/agprogram/](http://www.energy.ca.gov/agprogram/)

Please include your name, mailing address and phone number in your request.