White Paper

A Regulatory, Legislative and Market Perspective of Interruptible Electric Service in South Path-15

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I. Executive Summary

The United States and California have experienced a rich and challenging energy history. It has consisted of a period of robust generation and marketing programs to sell appliances and encourage electrical usage in the 40's and early 70's, followed by the Arab Oil Embargo in the mid-70's and conservation, a National Energy Act and promotion of electric generation for customer use from the 70's to the 90's, deregulation and reduction in interruptible programs, arriving today at robust utility efforts to support customer-friendly energy conservation and demand response programs at attractive customer savings.

Four major efforts underway in California help to encourage end-users to take advantage of demand response programs, including Southern California Edison's Base interruptible Program, now open to new customers. The major efforts include responsible and prudent management of interruptible programs, thoughtful and encouraging electric production forecasts compared to customer demand, and new California programs for Renewable Portfolio development and use, as well as Resource Adequacy requirements that mandate spare capacity to serve customers.

Southern California offers a robust cost saving opportunity for very limited risk of interruption when participating in Southern California Edison's demand response programs (including the Base Interruptible Program) providing savings to those applying for the summer months. Interruptions are highly unlikely to be an issue in 2007 and 2008.

This White Paper has been prepared from extensive experience with multiple utility programs in the United States and specifically California. As a former PG&E employee in Northern California, intervener at the California Public Utilities Commission, and former witness at the Federal Energy Regulatory Commission and U.S. Senate Energy Commission, I am confident that the material contained in this paper is objective and conclusive. I welcome comments and questions.

II. The Report

A. History of Interruptible Electric Service in Southern California (South Path-15)

After the tumult of the Roosevelt years and the end of World War II, the electric power industry enjoyed a period of steady growth, driven by both technological and efficiency advances that were reflected in lower prices. Between 1947 and 1973, the growth rate for the electric industry held steady at about 8% per year and there was little change in the industry structure. Peak electrical demand consumption grew at a relatively even rate. The industry began to promote increased electricity usage through advertising campaigns with such slogans as GE's “Live Better Electrically” Campaign that began in 1956[1]. As the industry grew and prices continued to decline because of economy of scale, there was little need for state and Federal regulatory intervention and certainly no fears of shortage because of plentiful power supplies and fuel to operate them. Investor Owned Utilities (IOU's) were the primary service providers for most Americans and their continued growth and low rates satisfied both consumers and investors.

The energy crisis of the 1970's[2] is often symbolized by images of long lines at gas pumps all over the United States resulting from the 1973 Organization of the Petroleum Exporting Countries (OPEC) oil embargo. Oil, coal and natural gas shortages, was well as declining public confidence in the nuclear power industry, contributed to rate increases for consumers throughout all the energy industries, including electricity.

Elected in 1976, President Jimmy Carter made energy concerns one of his top priorities. In attacking the demand side of the problem, he waged a public campaign focused on energy conservation to reduce the American public's high rates of consumption. In 1977 President Carter signed the Department of Energy Organization Act. The Act created the Department of Energy by consolidating organizational entities from a dozen departments and agencies. Under this legislation, the Federal Power Commission was replaced by the Federal Energy Regulatory Commission (FERC) as the federal agency that establishes and enforces wholesale electricity rates and interstate energy commerce. To combat the supply side, President Carter sought to cultivate the growth of new sources of energy, including nuclear power and renewable resources such as solar and wind. These two approaches were crystallized in the five-part National Energy Act, which Carter signed into law in 1978.

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[1] This campaign was started in 1956 by the General Electric Company and endorsed by power utilities and electrical manufacturers across the nation to produce public awareness and the desire for the usage of electricity. The theme was "Live Better Electrically" and it was a campaign to push the usage of electricity in the home and Ronald Reagan was the official spokesman. General electric produced a series of educational films about the history of electricity, its usage and what the future had in store for electricity in industry, health and general quality of life. One of the most ambitious aspects of the campaign was the certification of newly built homes called "Medallion Homes". To qualify as a Medallion Home" each house had to be completely electrified which included all electric appliances and electric heating. Each home that meet this qualification received a plaque or Medallion that could be mounted somewhere in the home, usually mounted on a garage wall or out in the front near the front doorway. From 1957 to 1970, some 1,000,000+ homes were certified as Medallion homes and today many of these homes can still be found with their Medallions still hanging proudly on some wall.

[2] In October, 1973, panic gripped the United States. The crude oil-rich Middle-Eastern countries had cut off exports of petroleum to Western nations as punishment for their involvement in recent Arab-Israeli conflicts. Although the oil embargo would not ordinarily have made a tremendous impact on the U.S., panicking investors and oil companies caused a gigantic surge in oil prices. The situation, caused more by fear and irrationality than any firm economic basis, turned out to be one of the most memorable of the 1970s. Those who can remember the so-called "Mideast oil crisis" also remember long lines at the gas pump due to petroleum shortages and high gasoline prices.

The Public Utility Regulatory Policies Act of 1978 (PURPA) was the piece of Carter's National Energy Act that affected the national electric power industry. It was designed to encourage efficient use of fossil fuels by allowing non-generators (known as Qualifying Facilities or QFs) to enter the wholesale power market.[3]

In 1978 the California Public Utilities Commission approved interruptible electric programs of its regulated utilities with the express goals to "…meet energy demands of our communities and keep rates lower." Southern California Edison's (Edison's) Schedule I-6 (I-6) provided about a 15% rate discount to large customers who signed agreements to interrupt a pre-agreed level of electric usage within 30 minutes of notice to their Remote Terminal Unit. Better rate discounts were offered to customers who involuntarily interrupted entirely when the Edison grid frequency sagged below 59.75 cycles per second. The Edison I-6 program was popular with large industrial customers who could interrupt their electric demand without damaging their products or disadvantaging their workers. Interruptions were initially plentiful as interruptible customers were considered to be the equivalent of electric generation – called upon when needed largely to *optimize the economy of the utility generation* and secondarily to instantaneously balance electric demand with supply.

Under the PURPA legislation, by the early- 1980's many private companies quickly installed cogeneration, largely financed indirectly by long term utility contracts, and generation resources swelled to over-supply growing consumer electric demands. The free–market mania of the 1980's and 1990's further challenged the notion of the electric power industry as a "natural monopoly." Many politicians and economists argued regulation had outlived its value, and the market should determine price and allocate resources. The telecommunications and transportation industries were deregulated, and the natural gas industry followed suit in the mid-80's and early 90's. Advocates for deregulating the electricity industry argued the implementation of PURPA had proved non-utility generators could produce power as inexpensively and effectively as the regulated utilities. Large industrial consumers searching for lower prices also chimed in and urged Federal regulators to pursue deregulation.

In 1992, Congress passed President Bush's Energy Policy Act (EPACT), which opened access to transmission networks to non-utility generators. EPACT further facilitated the development of a competitive market by creating another category of generators known as exempt wholesale generators (EWGs), which were exempted from regulations faced by the traditional utilities.[4]
The push toward electricity deregulation at the Federal level led states with relatively high electricity rates, including California, to investigate and pursue deregulation of the state-regulated aspects of electricity service, and retail service in particular. In California the push was led by large industrial customers facing high electricity costs in an ailing economy. At that time electric interruptions occurred infrequently as there was robust generation and plentiful fuel to operate power plants. It was the delivered *cost of electricity* that large consumers surged against, at least those customers without the ability to accept interruptible electric service. These customers saw the immediate advantage of

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[3] PURPA designated two main categories of QFs: *cogenerators*, which use a single fuel source to either sequentially or simultaneously produce electric energy as well as another form of energy, such as heat or steam; and *independent power producers*, which use renewable resources including solar, wind, biomass, geothermal and hydroelectric power as their primary energy source. Although intended to be an environmental statute, a primary effect of PURPA was to introduce competition into the electric generation sector of the electricity marketplace, thus challenging the utilities' claim that the electricity market encouraged a "natural monopoly." One feature of the PURPA legislation was to obligate regulated utilities, including Edison, to buy all of the power output of a QF at the utility's "full avoided cost" as long as the operating supply and thermal efficiency of the cogenerator met the minimum seasonal and annual average standards, respectively.

[4] To assist in the implementation of PURPA and EPACT, FERC issued Orders 888 and 889 in April 1996. The two Orders provided guidelines on how to open electricity transmission networks on a nondiscriminatory basis in interstate commerce.

bypassing the Investor Owned Utility's (IOU's) "bundled service", renting utility wires, and buying electricity directly from market suppliers (Energy Service Providers or ESPs).

The industrial customers were joined in the push for deregulation by merchant generators and marketers, who wanted to compete on equal footing with the IOU's and sell electricity and regulated services to selected profitable customers. The IOU's, who saw promising ventures in deregulated electricity markets for themselves, favored deregulation once their primary concern about recovery of investments stranded by the departure of their customers to competitors was satisfied.

In November 1996, the CPUC suspended any new Southern California Edison (Edison) applicants for I-6 interruptible electric service, claiming that the potential for interruption and cost-benefit to other ratepayers for maintaining the program was minimal and no new customers should be allowed. At that point, it appeared that "firm" electric service would be common for all customers, especially with the advent of deregulated electric service that would offer the ability for all customers to purchase electricity directly from power vendors (ESPs) apart from any utility service. The concept of interruptible electric service seemed to have evolved past the ability of the utility to regulate.

In 1997, electric deregulation, or "restructuring," legislation was passed by the California Legislature. Assembly Bill 1890 (AB 1890) codified a series of deregulation proposals either undertaken or recommended by the California Public Utilities Commission (CPUC), whose work on deregulation had been inspired by the EPACT and subsequent FERC Policies. Chief among the CPUC proposals was "Direct Access" – the authorization of retail competition within the IOU service territories. AB 1890 ended the retail service monopoly of utilities and authorized retail customers to buy power directly from alternative providers, or ESPs, beginning April 1, 1998.

The essential bargain of AB 1890 was to authorize Direct Access and assure the IOU's could recover stranded investments, but the CPUC's implementing decisions took a series of further steps intended to facilitate competition and Direct Access in particular, which would prove disastrous. The CPUC imposed a form of "synthetic competition" to improve on the natural workings of commodity markets. These included compelling the IOU's to sell off power plants that generated the electricity needed to serve their own customers; requiring the IOU's to buy and sell their non-equity power through the Power Exchange (PX) controlled by the newly-formed Independent System Operator (ISO); and retreating from long term planning and investment.[5]

[5] Other elements of deregulation, such as the IOU's transfer of control of their transmission systems to the ISO to facilitate non-discriminatory access to competing suppliers, were addressed in AB 1890, but likely would have happened anyway pursuant to Federal policies, such as FERC's Order 888. The main contribution of AB 1890 in this area, which was to attempt to ensure accountability of the Independent System Operator to the State, met with limited success. The Power Exchange, as directed, conducted periodic "Dutch auctions" for power to meet utility needs and awarded the highest price bid to all the bidders that were accepted for a forecast block of electricity needs for a limited time period. Gaming (withholding power) led to high prices to utilities, which were passed along to consumers along with high profits to the new unregulated power plant owners.

AB 1890 contained a number of "side deals." These included a guaranteed 10% reduction in retail rates for small customers, a guaranteed level of funding for low-income and environmental purpose programs, and assistance for IOU employees whose jobs would be at risk. The final product was widely supported. At the time, deregulation champions heralded the bill as paving the way for more competitive, efficient, reliable, and affordable electricity service. Many would-be critics saw deregulation in California as inevitable and AB 1890 as the best possible bargain. Only state-regulated utilities were subject to AB 1890, but municipalities could participate if they wished; none did. Few questions were asked about AB 1890 until former utility-owned power plants were purchased by out-of-state investors at multiples of book value and then operated at will as market prices increased to levels that greatly exceeded marginal costs of production by 1999 and 2000.

The first two years after implementation of AB 1890, the deregulation experiment appeared to be paying off well for IOU's and customers alike in California. Service remained reliable, few electric interruptions were called for customers that selected the rate option, wholesale prices remained below the frozen retail rates of December 1996, and the IOU's stranded cost recovery funding surged, due in large part to unexpectedly high prices fetched for the sale of power plants. All Direct Access service remained "firm" in its supply between ESPs and customers. Large utility *rate reductions* were anticipated once the AB 1890-required Competition Transition Charge (CTC) period to amortize "stranded investment" from deregulation was over, legislated for March 31, 2002.

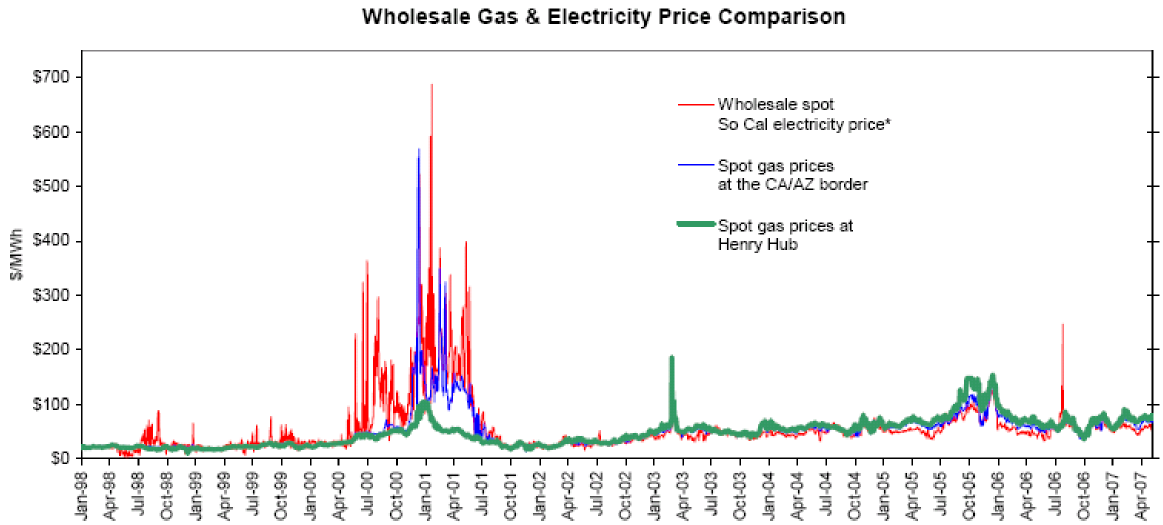
The California Independent System Operator (ISO) was formed in March 1998, charged with managing the flow of electricity along the long-distance, high-voltage power lines that make up the bulk of California's transmission system. The not-for-profit public-benefit corporation was opened in Folsom, California. The ISO assumed the responsibility when California opened its energy markets to competition and the state's investor-owned utilities turned their private transmission power lines over to the California ISO to manage. The mission of the California ISO was to safeguard the reliable delivery of electricity, facilitate markets and ensure equal access to a 12,500 circuit mile "electron highway." It turns out that safety of power delivery was not the challenge in a deregulated market in California, but rather the electric generation to meet customer needs.

Evidence of market power problems began to surface in 1999. Irregular but enormous price spikes in spot energy and ancillary services markets raised concerns among observers. The potential for market power abuse and increased prices was at the forefront of skepticism over Pacific Gas & Electric Company's (PG&E's) failed attempt to divest its entire hydroelectric system to an unregulated affiliate. The California Legislature's refusal to permit PG&E's proposed divestiture was the first major hiccup in the march toward deregulation. By 1999 few customers that could take advantage of deregulated service did so because of continued attractive retail "bundled service" rates, uncertainty about future market prices for wholesale electricity, and monthly-changing CTC charges by utilities. At that time, "bundled service" rates were frozen, so aggregate monthly utility costs were subtracted from frozen rates to derive the monthly CTC, which could be positive or negative, leaving great financial risk to Direct Access customers who bought power at market prices plus "wires charges" and the CTC.

Then in mid-2000, unprecedented price spikes began to occur with growing regularity. In San Diego, where the rate freeze had ended with SDG&E amortization of claimed "stranded investment" costs to get to a deregulated market, San Diego Gas & Electric (SDG&E) customers were directly exposed to outrageous prices, exacerbated by the fact that SDG&E had to buy most all of its power from the open, competitive market. Within six months, the market was in disarray, rolling blackouts occurred during relatively low electricity demand to both traditional bundled utility customers and Direct Access customers, suppliers' demands for extraordinary prices were unchecked, high wholesale prices caused nearly all customers of the collapsing Direct Access market to return to IOU's frozen rates, the IOU's became financially unable to pay for electricity, and the State of California had to assume the IOU's power buying duties for their "net short" positions to provide credit support for purchases and "keep the lights on."

Please see the following daily electric and gas prices in Southern California (South Path-15 or SP-15) during the 2000-2001-2001 period, not experienced by California before or since.[6]

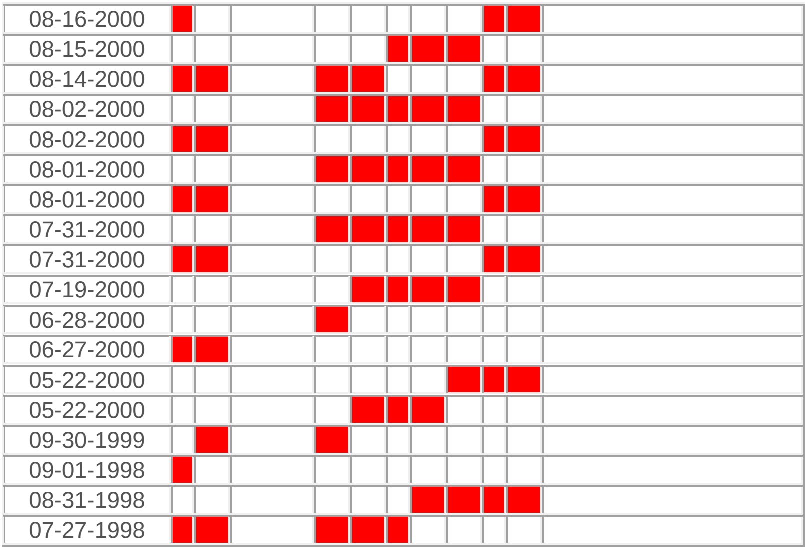
[6] Southern California Gas Company, Energy Markets Update, May 2007.



Below is a chart of daily electric interruptions called by Southern California Edison (Edison) from July 1998 through January 26, 2001.[7] The areas in red show program interruptions for the various 200 MW blocks, confirming remarkable interruptions beginning in late-2000 because of supplier non-performance.[8]

01-26-2001	2nd Interruption
01-26-2001	1st Interruption
01-19-2001	2nd Interruption
01-19-2001	1st Interruption
01-18-2001	3rd Interruption
01-18-2001	2nd Interruption
01-18-2001	1st Interruption
01-17-2001	3rd Interruption
01-17-2001	2nd Interruption
01-17-2001	1st Interruption.
01-16-2001	P.M.
01-16-2001	P.M.
01-16-2001	A.M.
01-16-2001	A.M.
01-11-2001	
01-09-2001	
12-07-2000	
12-07-2000	
12-06-2000	
12-05-2000	
12-05-2000	
12-04-2000	
12-04-2000	
11-15-2000	
11-14-2000	
11-13-2000	
11-13-2000	
09-18-2000	
09-18-2000	
09-13-2000	
08-16-2000	

7 http://www.sce.com/RebatesandSavings/LargeBusiness/InterruptibleProgramsI-6/blockinghistory.htm
8 Restructuring Today of January 7, 2004 quoting FERC's June 25, 2003 Report.



To avoid a dysfunctional spot market that financially decimated the IOU's, threatened catastrophic rate increases, and threatened continued electric interruptions for all customers,,the California Legislature passed emergency measure AB 1X [9] to establish a structure to permit the California Department of Water Resources (CDWR) to buy needed electricity for IOU customers under long-term contracts and stabilize power prices and supply reliability of the electric market. To ensure the predictable revenue stream necessary for long term contracts, to promote the competitive issuance of ratepayer-backed revenue bonds, and to prevent cost-shifting from Direct Access to "bundled service," the CPUC was directed to suspend Direct Access to prevent additional migration of IOU customers. After a seven month delay, the CPUC suspended Direct Access on September 20, 2001, other than to allow "normal load fluctuations" by existing Direct Access customers.

The California Electricity Oversight Board (EOB) was formed by the California Legislature under AB 1890 to perform three functions: to oversee the Independent System Operator (ISO) and the Power Exchange (PX); to determine the composition and terms of service, and to appoint the members of the governing boards of the ISO and PX; and to serve as an appeal board for majority decisions of the ISO governing board. The market chaos in early-2001 caused the ISO to collapse the EOB and PX in January 2001 and focus on restoring integrity between power producers and power consumers, largely initiated with hearings about why generators were bidding to sell power to the ISO, but not performing once bids were accepted. The ISO retained its responsibility to call interruptions to regulated utility customers based on its control of dispatching (approving) power plants to operate, coordinating major grid switching and power flows in California, and coordinating the generation and switching with the Western Utility Coordinating Council that controls the major grids of the nine western states.[10] Regulated utilities retained their responsibility to build, own, and operate their electric grid system and equity generation as controlled by the ISO.

Between January and June 2001, the vast majority of customers previously served by Direct Access ESPs returned to IOU service, benefiting from retail rates which were lower and more stable than then-current market prices. As a result of the CDWR's purchase of electricity for expected levels of "bundled service" customers at multiples of historical market price for terms of 10-20 years, between July 1, 2001 and September 20, 2001, thousands of predominantly large industrial customers, who had taken service from utilities at below-market rates, departed for Direct Access as market conditions improved. During the July 1 to September 20 period, Direct Access service increased from approximately 2% to approximately 13% of the total IOU load. Direct Access load now stands at approximately 12%.

[9] Keely, Chapter 4, Statutes of 2001
[10] http://www.caiso.com/PowerCentral/

Since 2001, the electricity rates set by the CPUC for the customers of the state's major IOU's have exceeded the IOU's ongoing cost of *allocated* service, far exceeding the rates of in-state municipal utilities or any neighboring state, and firmly rank among the highest in the nation.

In January and again in March 2001, the CPUC increased rates for the customers of Southern California Edison (SCE) and PG&E a combined average of 4 cents per kilowatt hour (KWh). High usage residential customers and the vast majority of business customers who were taking "bundled service" were hit especially hard. The rate increase marked the practical collapse of the rate freeze initiated in 1996 and transition cost recovery scheme created by AB 1890.

While CDWR has claimed a share of the electricity rates for its ongoing operating costs and payments on bonds it issued to finance its high-cost power purchases in 2001, the IOU's have also been collecting an extra measure of rates that would have otherwise be dedicated to buying electricity, namely *above the costs incurred by the CDWR* since they stepped in to buy power for the financially ailing utilities.

The CPUC has maintained the level of rates imposed in 2001, instead of refunding the excess funds to customers or using them for ongoing procurement, and expanded their purposes to include restoring the financial health of SCE and PG&E. For example, in October 2001, the CPUC entered into a settlement of Federal litigation with Edison, permitting Edison to use $3.3 billion in excess rates under the Procurement Related Obligations Account (PROACT) to pay off procurement debts incurred in 2000. Since then, Edison has been applying an average of about $200 million per month in rates to pay these debts. A challenge to this settlement by The Utility Reform Network (TURN) and a filing by multiple parties in a request for a Writ of Review for action by the CPUC failed before the California Supreme Court. Four times the State of California, utilities and the CPUC have approached the FERC to disallow contracts the CDWR entered into with power plant owners, without success. Partial renegotiations of deals between CDWR and power plant owners have occurred, but results have been nominal.

In April 2001the CPUC issued a unanimous decision in D.02-11-026, applicable to both Edison and PG&E, lifting its prior restriction to the use of the 2001 rate increase and allowing the money to be used for "returning each utility to financial health." In the same month, Edison filed for approval from the CPUC to begin its Base Interruptible Program (BIP), among other programs intended to enhance Edison's ability to attract program participants and reduce its electric demand effectively during periods of shortage.[11] A listing of programs for the summer if 2001 is provided on the chart below. Notably, Edison's vigor to establish a new interruptible electric service program came from its profound experience during the energy crisis whereby 54% of I-6 interruptible customers elected to return to "bundled utility", 22% increased their Firm Service level during the prior annual November "Open Season. Only 23% did not change their service, and a paltry 630 active I-6 accounts remained on interruptible electric service.[12]

[11] "SCE Load Reduction Programs: Summer 2001 Experience and Lessons Learned," Mark Wallenrod, Manager, Pricing & Tariff Operations, ACEE Conference on Energy efficiency and Reliability, October 31, 2001.
[12] Ibid.

Summary of 2001 Load Reduction Programs

	Program	Key Features: Payment Description	Incentive Structure	Trigger	Penalty Applies	Applicability (Rate Schedule): Residential	Commercial <100 kW	Commercial >100 kW	Large >500 kW	Ag. & Pumping
	Large Power Interruptible (I-6)	Capacity	$/kW $/kWh	ISO Stage II	Yes				●	
◆	*Base Interruptible Program (BIP)*	*Capacity*	*$/kW*	*ISO Stage II*	*Yes*				●	
◆	*Demand Bidding Program (DBP), replaced VDRP*	*Energy*	*$/kWh*	*DWR acceptance*	*No*			●	●	●
◆	*Optional Binding Mandatory Curtailment Program (OBMC)*	*None*	*None*	*Rotating Outages*	*Yes*		●	●	●	
	Air Conditioner Cycling Program – Base (ACCP)	Capacity	$/ton	ISO Stage II	No	●	●	●	●	
◆	*Air Conditioner Cycling Program – Enhanced (ACCP)*	*Capacity*	*$/ton*	*ISO Stage II*	*No*	●	●	●	●	
◆	*Smart Thermostat Program (STP)*	*Fixed*	*$/device*	*ISO Stage II*	*Yes*		●	●		
	Agricultural and Pumping Interruptible (API)	Capacity	$/kWh	ISO Stage II	No				●	●
◆	*Scheduled Load Reduction Program (SLRP)*	*Energy*	*$/kWh*	*Prescheduled*	*No*			●	●	

◆ = New   Wallenrod 3   *SOUTHERN CALIFORNIA EDISON*

In November 2002, the CPUC issued its decision that initiated a Direct Access Cost Recovery Surcharge of $.027 per kWh beginning January 1, 2003 for all Direct Access customers, excepting those that did not use any IOU power during the period February 1 through September 20, 2001. This measure, the final step in implementing AB 1X, was intended to fully compensate regulated utilities for cost imposed by the CDWR and to ensure abundant, well-financed energy was available to meet customer demands.[13]

B. Modern History of Interruptible Electric Service in Southern California (South Path-15)

The following describes the changes made in interruptible programs since the chaos in 2001:

1. Insurance is no longer permitted by customers to cover the financial expense of failed interruption compliance. That has enhanced customer performance during interruption notice.
2. Schedule I-6 customers were informed that beginning December 2006, rate savings (about 22%) would be phased out, ending with the Schedule I-6 tariff in December 2008.[14] BIP participation is expected to increase materially with the impending cancellation of Schedule I-6.
3. The electric interruption history of 2000 (68 interruptions) has been followed by the following recent, favorable history: one interruption in 2001, three interruptions in 2002, no interruptions in 2003 and 2004, one interruption in 2005, and one interruption in 2006. A chart showing the long-standing alert levels used by the ISO in its interruption notices follows this list.

[13] CPUC Decision 02-11-022 of November 7, 2002.
[14] CPUC Decision 06-06-067, Edison Advice 2046-E.

4. Interruptible customers of Edison now comprise the following participation: 5% colleges and schools; 2.7% government; 8.1% retail, food, offices; 5.6% miscellaneous and lodging; 5.5% transportation communication and utilities; 50.6% assembly industry; 18.4% process and non-process industries; and 4.1% hospitals and nursing homes.
5. Extensive efforts have been made at the California Energy Commission, CPUC, other State of California agencies and the California Legislature to enhance the building and operation of new generation to meet growing needs, especially in a regulatory environment where new investment is at high risk and subject to intense scrutiny in its air emissions, transmission facility planning and construction, licensing, and capital funding and return on investment expectations. This will be discussed in detail later.
6. Regulated utilities are making extensive efforts to enhance their programs, with Edison making (nominal) changes to penalties for non-performance during curtailments and actively promoting its program as an alternative to contracting or building more power plants to meet growing customer electrical needs. Attractive changes in BIP compared to Schedule I-6 service include: open enrollment, no capital investment for monitoring equipment, fewer interruption maximum hours, fewer calls per month, lesser duration of interruptions, only a one-year commitment, voluntary curtailment, and lower eligibility for electric demands.

California Independent System Operator (ISO) Interruption Notifications

ISO Notice	Condition
ALERT	Less than 7% Operating Reserve forecast in DAY-ahead market.
WARNING	Less than 7% Operating Reserve forecast in HOUR-ahead market.
EMERGENCY - Stage 1	Emergency: Less than 7% Operating Reserves forecast in REAL TIME. Prepare for potential interruption. **
EMERGENCY - Stage 2	Emergency: Less than 5% Operating Reserves forecast in REAL TIME. An Interruption is in effect for interruptible load only.
EMERGENCY - Stage 3	Less than 1½% Operating Reserves forecast in REAL TIME. All available interruptible load is called for Interruption. Firm service customers (customers not on interruptible tariff) will also be called for interruption.

* The ISO can issue any notice at any time (i.e., notices do not necessarily occur sequentially).
** For I-6 customers, the RTU will confirm whether or not your load is called for interruption.
** For I-6 BIP and OBMC customers, the dedicated phone will alert you to an interruption.

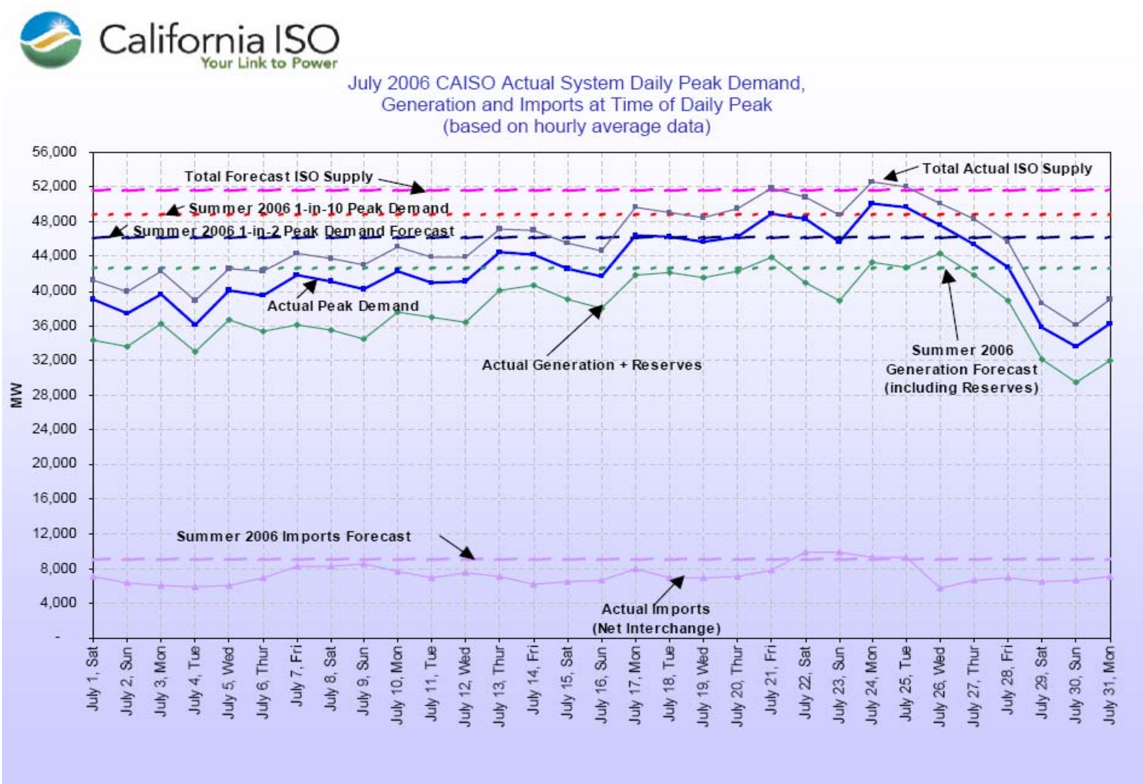
C. Regulatory Issues Worthy of Consideration for Interruptible Electric Service in Southern California (South Path-15)

There are four particularly important issues to be discussed: recent experience with interruptions that shows competence in dealing with emergencies, the outlook for generation resources to exceed customer demand, and Renewable Portfolio Standards that will boost long term, renewable energy sources, and Resource Adequacy requirements in California.

1. Recent Experience with Interruptions

Last summer's heat storm surrounding July 24 provided a remarkable view of a near worst-case situation, exceeding the one-in-10 year probable event, shown on the following chart. Of importance in this event was the fact that on July 24 the summer 2006 Generating Forecast was exceeded by the Actual Peak Demand and the ISO Forecast Supply was exceeded by the Total Actual ISO Supply. Yes, an orderly and predictable interruption was called in a timely manner to reduce electric demand, but there was sufficient system capacity to meet all customer needs and nearly the 5% safety margin demanded for a Stage 2 emergency. Based on the information provided by the ISO, the one hour and 57 minute interruption was largely a preventative measure, and part of a general discipline, rather than a calamity that seriously threatened the electric integrity of the Edison grid.[15] Here are lessons learned:

1. The ISO Web Site at http://www.caiso.com/outlook/SystemStatus.html can be trusted to provide real time information on current demand and supply in California. This information is available online 24 hours per day.
2. The ISO's review of this recent interruption can be relied upon to analyze pertinent conditions that contributed to the creation and solution for a demand that may exceed supply or operating standards.
3. The BIP program had a total of 91 service accounts with 78.1 MW enrolled in July 2006. Edison's BIP customers reduced from 112.8 MW down to 38.1 MW or a 74.7% reduction during one 15-minute interval during the event, a commendable performance showing success of the program in its notification and customer commitment.[16]

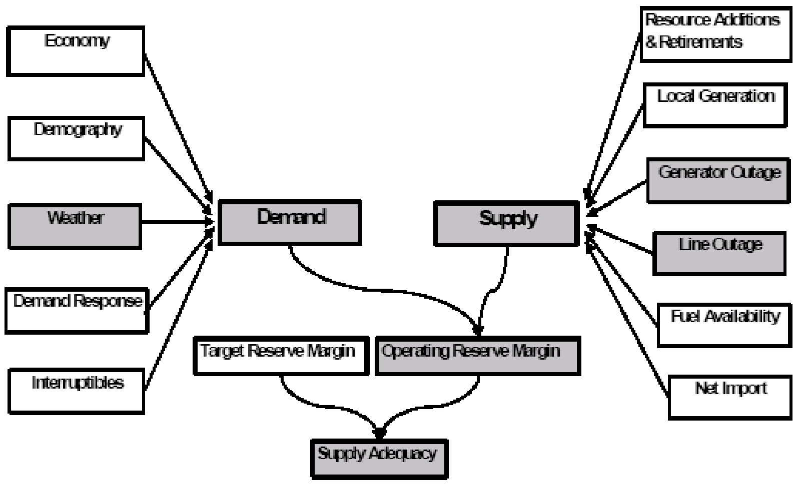


2. Outlook for Generation Resources

Looking forward to the outlook for electric supply and demand, we can see that excellent progress has been made in ensuring robust coverage and the timely addition of generating units to meet growing consumer demand. The model to balance demand with supply is show in the following chart entitled "Major Factors Affecting Supply Adequacy".[17]

[15] California Independent System Operator, CAISO Capacity Picture, August 29, 2006
[16] "Southern California Edison Company's (U 338-E) Assessment of Demand Response Program Performance during July 2006 and proposals to Augment its Demand Response Programs for 2007 and 2008," filed with the CPUC in Applications 05-06-006, 05-06-008, and 05-06-017 August 30, 2006, page ten.
[17] California Energy Commission, Summer 2007 Electricity Supply and Demand Outlook, May 2007, page 12.

Figure 2: Major Factors Affecting Supply Adequacy



Looking past the model above, what follows is the California Energy Commission's expectations for the planning reserve for the summer months of June through September 2007, remarkably above the any of the alert levels for an interruption this summer.[18]

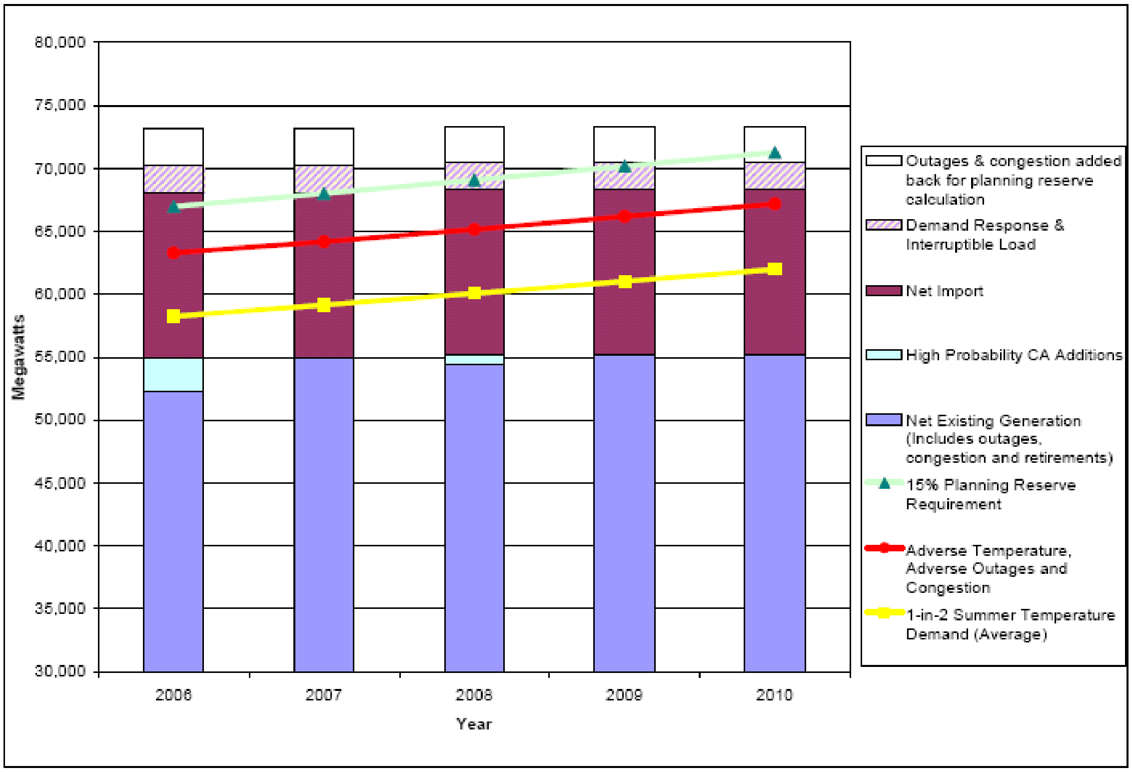
Table A-4: 2007 Detailed Monthly Electricity Outlook – California ISO Southern Region (SP26)
(Megawatts)

Resource Adequacy Planning Conventions	June	July	August	September
1 Existing Generation	21,848	21,863	22,101	22,277
2 Retirements (Known)	0	0	0	0
3 High Probability CA Additions	15	238	176	0
4 Net Interchange	10,100	10,100	10,100	10,100
5 Total Net Generation	31,963	32,201	32,377	32,377
6 1-in-2 Summer Temperature Demand (Average)	26,044	27,612	28,050	28,375
7 Demand Response	202	202	202	202
8 Interruptible/Curtailable Programs	1,087	1,087	1,087	1,087
9 Planning Reserve	27.7%	21.3%	20.0%	18.6%

Looking even further out, the following chart shows the California Energy Commission's Five year Outlook with abundant electric resources to meet demands plus 15% planning reserve readily through 2009.[19]

[18] Ibid, page 22.
[19] California Energy Commission Summer 2006 Electricity Supply and demand Outlook, April 2006

Figure 4-1: Five-Year Electricity Outlook - California Statewide



3. Renewable Portfolio Standards

All Load Serving Entities (LSEs, including regulated utilities and ESPs) are required by State Law to meet 20% renewable energy sources by 2010. While some LSE's are off to a slow start (as shown in the following Power Content Label chart), others are making remarkable strides to enhance their diversity of electric generation, away from traditional fossil fuel power plants.

On September 12, 2002, Governor Gray Davis signed a bill (SB 1078) requiring California to generate 20 percent of its electricity from renewable energy no later than 2017. The 20 percent standard was the most stringent renewables portfolio standard (RPS) to date in the United States. The new law requires sellers of electricity at retail to increase their use of renewable energy by 1 percent per year. Since California already generates about 10 percent of its electricity consumption by renewables, the new law will nearly double the state's existing base of wind, geothermal, biomass and solar energy resources. An estimated 9,000 MW of renewables will be needed.

Specifically, the new RPS program would require that a retail seller of electricity, including electrical corporations, community choice aggregators, and electric service providers, meet the minimum percentage of electricity generated by eligible renewable energy resources. If they fail to procure sufficient eligible renewable energy resources in a given year to meet an annual target, the electrical corporation would be required to procure additional eligible renewable resources in subsequent years to compensate for the shortfall.

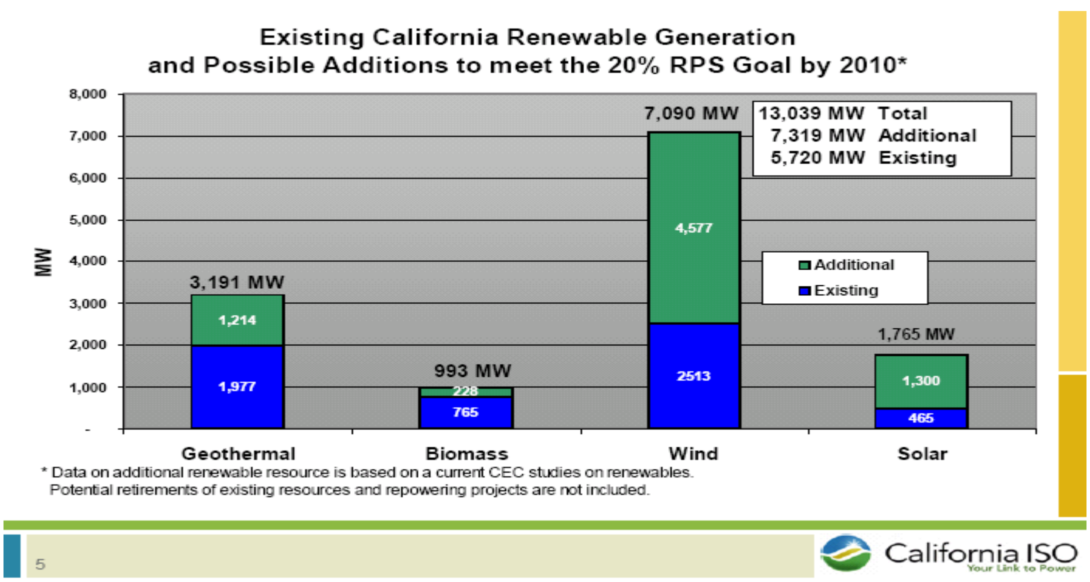
The California PUC is required to adopt rules for establishing a process for determining market prices of electricity from renewable generators, a process for rank ordering and selection of least-cost and best-fit renewable resources to fulfill program obligations, flexible rules for compliance that permit sellers to apply excess procurement in one year to subsequent years, or inadequate procurement in one year to the following 3 years, and standard terms and conditions to be used by electrical corporations in contracting with renewable electricity generators.

The bill requires the Energy Commission to certify eligible renewable energy resources, to design and implement an accounting system to verify compliance with the renewables portfolio standard by retail sellers, and to allocate and award supplemental energy payments to cover above-market costs of renewable energy.

Power Content Labels for CA ESPs - Projected for 2007

	APS ES	Constellation	Coral	Sempra	SC Edison
Eligible Renewal	21%	5%	5%	7%	16%
- Biomass and Waste	lt 1%	lt 1%	lt 1%	lt 1%	0.02
- Geothermal	20%	4%	4%	4%	9%
- Small Hydro	lt 1%	1%	lt 1%	3%	1%
- Solar	lt 1%	lt 1%	0%	lt 1%	1%
- Wind	lt 1%	lt 1%	lt 1%	lt 1%	3%
Coal	32%	38%	29%	38%	7%
Large Hydro	19%	24%	31%	23%	5%
Natural Gas	28%	33%	35%	32%	54%
Nuclear	lt 1%	0%	0%	lt 1%	17%
Other	lt 1%	0%	0%	lt 1%	1%
Total	100%	100%	100%	100%	100%

Please note the potential renewable generation resources, largely from wind generation.[20]



[20] Cal ISO Integration of Wind Generation and Other Renewables in California, David Hawkins, Cal ISO, Energy Analysis Department, 2006

4. Resource Adequacy Requirements

The Resource Adequacy requirement applies to all IOUs and ESPs to identify 90% of the resources needed to meet summer (May through September) peak demands plus 15% planning reserve margin (approximately 103.5% of peak demand) by September 30th of the prior year. IOUs and ESPs are also required to demonstrate the procurement of resources equal to 115% of forecasted monthly peak loads by the first of the prior months. The scope and timing of data submittals by IOUs and ESPs beginning in 2006 intentionally provided additional capacity to the California grid.