

WHY DID CALIFORNIA'S LIGHTS GO OUT?

By Brendan Martin
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When a politician prefaces remarks with the phrase 'we must face reality' there is usually some bad news on the way, but when California Governor Gray Davis said those words in his 2001 State of the State address, he was not about to tell the his electors anything they did not already know. Referring to how the Golden State had lived up to its reputation for way-out fads by partially deregulating and privatising its electricity supply, Governor Davis said:

'We must face reality: California's deregulation scheme is a colossal and dangerous failure. It has not lowered consumer prices. And it has not increased supply. In fact, it has resulted in skyrocketing prices, price-gouging and an unreliable supply of electricity. In short, an energy nightmare ... We have lost control over our own power. We have surrendered the decisions about where electricity is sold — and for how much — to private companies with only one objective: maximizing unheard-of profits.'

Strong words, and the kind of language used by a politician eager to distance himself from a policy failure. Governor Davis, a Democrat, was entitled to do that, since the disaster had been initiated during his Republican predecessor Pete Wilson's watch. But Wilson was able to distance himself too, because the experiment was the product of a decision by the California Public Utilities Commission (CPUC) which, according to a later report by that body, was taken with no dissent by any of the 'constituency groups' with influence over its decisions.¹

So it was from the CPUC that an embattled Governor Davis sought answers after thousands of homes and businesses were confronted by overnight price hikes and power cuts during the hot summer of 2000. Writing to both the CPUC's president, Loretta Lynch, and Michael Kahn, chair of another regulatory agency, the Electricity Oversight Board, on June 15, 2001, Davis did not mince his words:

'Dear President Lynch and Chairman Kahn,' he wrote, 'I am advised that electricity power plant and transmission maintenance problems caused interruptions in the supply of electricity to consumers throughout the San Francisco Bay Area. Compounded by severe hot weather, these electrical supply and voltage support problems experienced by residential, commercial and industrial customers resulted in inconvenience and economic losses throughout the region.'

'To reduce the drain on energy during this episode, I directed State agencies and facilities in the Bay Area immediately to institute energy management practices aimed at reducing energy use. The safety and reliability, affordability and fairness of California's energy system are of paramount concern and cannot be compromised. Ensuring a reliable electric system is central to the health and safety of every Californian as well as California's continued economic growth. Existing generation capacity simply must be available to use when Californians need the power.'

'I am directing you to exercise your respective authority to investigate the circumstances, including the reasons for the generation maintenance and transmission problems and related impact on electricity prices and advise me on actions that can be taken to avoid recurrence of this situation. Report back to me by August 1 your findings and recommendations for solving them.'

'Sincerely, Gray Davis.'

Like the best of us, Kahn and Lynch very nearly made the deadline. That was a considerable feat in six weeks: no doubt some unsung heroes at the bottom of their delegation chain burned a few candles that summer. Given the collapse in electricity supply their report described, they had probably had to. The account provided by Kahn and Lynch on August 2, 2001, was as damning a verdict on how market deregulation leads to market manipulation as we have seen — even if its diplomatic language satisfied both lawyers and protocol.²

' California' s electric system is in trouble,' their report began, telling Davis something he definitely already knew, but doing so – as the report' s content would go on to demonstrate – with commendable understatement. Its conclusion was equally succinct and no less restrained: ' In sum, power supply shortages, increased demand and a dysfunctional market are converging to undermine the state' s ability to assure its businesses and citizens have clean, reliable and reasonably priced electricity. California deserves better.'

In between those opening and concluding observations, the report traced the history of policy changes and regulatory reform of the state' s electricity supply industry over the preceding decade. Those decisions had provided private power companies with incentives both to cut investment in new generation capacity and to use their information and other advantages to ' game' the market for wholesale power.

The background to the crisis

The report told how, for half a century, California' s electricity supply industry had operated rather well as a result of state and federal regulatory oversight of mainly privately owned and operated power utilities. Those utilities were ' vertically integrated' , meaning that they owned and operated all three component parts of the supply service —generation, transmission and retail distribution. Nearly 80 per cent of California' s electricity was delivered by three such privately owned utilities – Pacific Gas and Electric (PGE), Southern California Electric (SCE) and San Diego Gas and Electric.

There was also (and still is) a smaller municipally owned sector, also vertically integrated. The major municipal utility is the Los Angeles Department of Water and Power (DWP), the largest municipally owned utility in the USA. The municipal utilities were and remain self-regulated, but the private utilities were regulated by the CPUC, while transactions between utilities and with other states were overseen by the Federal Energy Regulatory Commission (FERC). Both CPUC and the FERC were required by law to set ' just and reasonable' rates, allowing for a reasonable rate of return, on average between 10 and 15 per cent.

They did so by basing rates on demonstrated costs, and the process by which the CPUC calculated those gave all stakeholders – the utilities themselves, consumer representatives, anyone – access to relevant information and the right to offer evidence and cross-examine others. In addition, the CPUC, consisting of five members appointed by the Governor for six-year terms, exercised some authority in other ways. It set standards for performance, supervised investments in new generation and transmission, and controlled the mix of fuels and other matters of public concern.

The latter became particularly important during the 1980s, when environmental protection became a hot political issue. As a result, utilities developed energy efficiency and conservation programmes, passing the costs of these on to consumers, under CPUC supervision. ' State energy planners and regulators balanced supply and demand through Integrated Resource Planning, building new power plants when needed but investing in conservation and energy efficiency to minimize the need for costly new plants,' said the report.

In the 1990s, however, integrated resource planning was one of several victims of policy changes arising from ' rising retail prices and a philosophical shift away from cost-of-service regulation' . In 1994, the politically appointed CPUC recommended fundamental structural reform that would move substantial regulatory authority to the federal government. By then, the CPUC' s membership had been entirely appointed by successive Republican Governors committed to removing government intervention in the economy. In addition, the Federal Power Act of 1992 had given FERC authority to deregulate the wholesale interstate electricity market.

In 1995, the CPUC went further, ordering the utilities to unbundle their integrated systems so that the costs of each of the component parts —transmission, generation and distribution — would be

transparent. This would also facilitate mergers and acquisitions of each of the three component parts of the utilities separately. At the same time, CPUC moved away from cost-based regulation to a system of ' market-based' incentives. This was supposed to increase the transparency and objectivity of its decisions, but, the report indicates, it has had the opposite effect.

The following year, it went further still by issuing an order which:

- Established a California Power Exchange (PX), a private nonprofit organization which would set wholesale sales of electricity under FERC rather than CPUC oversight;
- Created incentives for utilities to sell their generation facilities to unregulated private power companies;
- Transferred operational control of the utility-owned transmission system to a new Independent Service Operator (ISO), a private non-profit organization which would manage the transmission system and its day-to-day operations under FERC oversight;
- Let the utilities retain ownership and control of the distribution system, but entitled their customers to choose their generating company;
- Enabled accelerated redemption of earlier capital expenditure by permitting the utilities to charge artificially high rates and use surpluses to pay off stranded costs, mainly for nuclear capacity;
- Provided that a freeze on those rates would end when the capital costs of utility generation assets had been recovered or at the end of a 2001, whichever came first.

Municipal utilities were given the option of joining the new system or remaining outside. If they opted in, then their customers would have the right to choose other generation suppliers, and similarly the municipal utilities would have the right to sell outside their service territory. Almost without exception, the municipals opted to stay as they were. Their customers were, therefore, excluded from – or, as it turned out, protected from — what the report calls an ' enormously complex' new power market created by CPUC' s politically driven reforms.

How the reformed system worked

' Simply stated,' said the report, attempting to explain how the market works, ' a day in advance, participating generators bid power into the wholesale market auction, conducted by the PX and their counterpart buyers, (and) estimate and order the power needed to meet California' s electricity demands. On the basis of hourly supply and demand bids and orders, the PX sets the price to be paid to all power sellers at the highest amount bid for that hour, even if some sellers would have sold power at a lower price. The ISO then directs the flow of electricity throughout the State. When supply purchased in the PX market is less than the State' s demand for electricity, the ISO makes up the difference by purchasing enough electricity to balance the load and meet specified "reserve" levels.'

The very complexity of the system was one dimension of the way in which authority within it was distanced from public scrutiny. Compared to the open hearings through which cost-based tariffs had been set, hour-to-hour market-based tariff-setting is out of reach of consumer control, but highly susceptible – as experience was to demonstrate – to producer control. ' Information asymmetries' introduced into the system handed to unaccountable and commercially motivated organizations enormous power over a market for a commodity that, since it cannot be stored, is especially vulnerable to collusive price fixing by oligopolistic suppliers. Lawyers acting for Enron have since admitted to a Senate hearing that the company ' gamed' the California market in various ways, making tens of millions of dollars in profits by engineering power shortages and other devices.³ The testimony claimed that other companies did much the same, a claim Enron' s erstwhile ' competitors' have denied.⁴

The power exercised over the electricity market by Enron and the other big US energy trading companies had already come to be greatly enhanced by another factor: the tension between continuing public determination of environmental policy, on the one hand, and private responsibility for building new generation capacity, on the other. This had arisen from earlier decisions to, in effect, bar utilities from building new capacity themselves in order that a market for new capacity would grow. But this regulatory environment had the effect of exposing the private generation industry to more risk than they were willing to take on. As a result, California's power supply continues to lag far behind growing demand.

That problem was not solved by the 1996 reforms, although, as the report points out, during the CPUC consultation exercise before they were finalized, 'proponents of renewable energy supplies and energy efficiency won legislated funding for energy efficiency renewable resources'. However, it goes on, 'pursuing a competitive market structure, policy makers made funding for these programs a low priority. The current funding for these programs is almost 70% less than it was in the early 1980s.

'The State's retreat from funding energy efficiency and renewable energy programs occurred despite the demonstrated economic benefits that energy efficiency brings to the California economy. RAND [an esteemed public policy consultancy], for example, estimates that energy efficiency in the past 20 years has provided \$1,000 in economic benefits to each Californian.'

It had brought no profit, however, to the industry interests by then exercising more influence than before over California's policy, and the 1996 reforms concentrated on building their market by accelerating the fragmentation and privatisation trend. It imposed on electricity utility companies (other than the municipal enterprises that had opted out of the scheme) an obligation to buy all their power on the PX. Utilities that had previously been integrated generators and distributors of electricity were provided with sweeteners to encourage them to sell their generating capacity to unregulated generation companies, and without exception they did so. At the same time, what little regulatory control over the price of power that survived the reforms switched from the state to Washington, D.C., coming under FERC's jurisdiction. This not only deprived local interests of their influence, but also put the width of the continent between them and the more powerful local influences of the institution now supposedly protecting them.

From public to market control

By law, FERC still had to set 'just and reasonable' rates, but the earlier switch from 'cost-based' to 'market-based' rates enabled FERC to set them 'with very little evidence to support those rates as just and reasonable,' said the report, adding: 'It appears that the FERC's assumption that the market will discipline wholesale prices is not a reasonable one at this time in California.' The influence exercised by the energy industry over Washington appointments to FERC – influence exercised particularly systematically by Enron, which provided much campaign finance not only to the George W. Bush presidential election effort but also to those of a majority of Representatives and Senators of both parties – has some significance here.

Moreover, neither the ISO nor the PX – the bodies in which the new system vested great power to make key market decisions in California – was either elected or accountable to people who are. Their boards are composed of 'stakeholders' – mainly business representatives – and ISO's is also self-perpetuating. Both have 25 or more members, of whom no more than two are residential consumer representatives. Both bodies are subject to FERC oversight, but, as the report points out: 'Although the federal government oversees the ISO and the PX, federal regulators pursue national interests, not necessarily those of Californians. For example, the FERC does not incorporate California's strong environmental values into its decision-making.'

Why did the lights go out?

The key decisions plunging the state into blackouts were taken by ISO. As the report explained: ' The events giving rise to this Report started with ISO calls for widespread interruption of industrial and other large customers on May 22, 2000, and the imposition of rolling blackouts in the Bay Area [around San Francisco] on June 14, 2000. Beginning in May 2000, costs for power in all regions and economic sectors of California increased by billions of dollars. On several days in the second quarter of the year, reliability was significantly compromised. The appearance that reliability has been compromised makes all the more distressing the huge run-up in prices —Californians are paying a lot more for a lot less, in terms of service.'

On the day before Governor Davis had demanded the report, June 14, a ' remarkable event' occurred as a result of ISO' s decisions and the market conditions which led to them, and it was this that finally forced the governor into action. PG&E had to cut supply to nearly 100,000 residential and small business customers ' for the first time in its history' . The reason was that capacity fell to a critical level because of high demand and low supply – the former caused by hot weather and the latter by decisions on the part of generators that remain the subject of much speculation.

What is clear is that a number of power plants cut generation for maintenance at the same time as each other. That might or might not have been an unfortunate coincidence – if the companies colluded in that way to cause an energy shortage to drive up prices, it would certainly be of interest to a criminal investigation —but explanation for it was aided by the earlier failures to invest in new generating capacity. Most of California' s power plants, being more than 30 years old, do need more maintenance than more modern stations require. Whatever the factors in causing it, the effect of the shutdown of several plants simultaneously was that ' voltage instability related to gaming on the previous day, import limitations, power plants out, and record temperatures set the stage for disaster on June 14, 2000.'

The extent to which the impact was passed through to retail customers in terms of sudden price rises depended on whose customers they were. Some were protected by continuing retail price regulation due to expire later under the scheme, while others were already more vulnerable. The luckless citizens of San Diego were among the latter. No longer cushioned by the CPUC or FERC, nor protected by municipal supply, they were exposed to the wholesale price surges and their bills doubled overnight. ' The rise in bills experienced in San Diego prefigures rises that will eventually come to other California customers,' the report warned, ' unless something is done.' As forecast, by April 2002, California' s retail electricity consumers were paying on average 40 per cent more for their supply than they had done before deregulation, a measure sold at its inception with the claim that it would reduce prices by 20 per cent.⁵

Why did prices go up?

The increased retail price was a product of increased wholesale prices, and when it examines the reasons for the latter, the report must be read between the lines. ' Warm weather alone does not explain the magnitude of the enormous run-up in wholesale prices,' it states. ' Wholesale electricity costs were seven times the previous year' s on days when loads were comparable. California normally experiences similar weather conditions for extended periods in later summer months. Yet never before during a heat wave have purchasers paid the prices for California power that they have paid this summer.'

The report can only hint at ' gaming' having extended to unlawful collusion, but it does urge the law enforcement authorities to expedite a full investigation. It goes on to suggest that the absence of public scrutiny over the new institutions with key roles, ISO and PX – which, unlike the CPUC, neither hold hearings nor bear obligations to disclose information —also contributed to making a bad situation even worse.

Black-outs in response to the crisis were ordered by ISO, when its reserves were reduced to dangerous levels, but the report suggests that a more consultative approach might have averted them. It points out, for example, that ' the City of Santa Clara, which operates its own utility, took an innovative approach to the supply squeeze on June 14,' and explains: ' It contacted large customers and asked

them to voluntarily cut back their power so that they would not lose all power.' As a result, there were brownouts there but blackouts were avoided. The cooperative relationships in Santa Clara – so unlike the competitive culture that replaced them elsewhere – appear to promote responsible behaviour in the public interest.

Los Angeles did even better. Its municipal utility, foreseeing the disastrous effects of the reforms from which it had opted out, brought some generating plants out of mothballs. With careful planning, it has been able to keep down its retail prices, already the lowest in the state, by selling excess power to the other energy-starved, divested private utilities — at the inflated, manipulated market prices! That smart policy has even enabled the utility to halve its debts since 1996. No wonder the LA Times has called it a 'model for proposed municipal utilities in cities hard-hit by escalating electricity-rate increases'.

The precise reasons for ISO's failure to avoid imposing blackouts on consumers within its jurisdiction remain a mystery since, the report points out, its criteria for cutting off supply are not subject to any public scrutiny. As the report notes:

' The EOB and the CPUC have been unable to obtain information about generator and marketer bidding behaviour, partly because the ISO and PX have refused to provide that information to state agencies. Because we have not had adequate information, we have not determined whether anti-competitive or illegal conduct occurred during June. The Attorney General, U.S. Department of Justice and FERC should cooperate with us in pursuing this question diligently.'

CPUC will be able to offer such an investigation the following circumstantial evidence: ' A comparison of prices and demand levels in 1999 and 2000 is instructive. Wholesale market sales were virtually unchanged for comparable periods in 1999 and 2000. Yet retail prices increased by up to ten times from 1999 to comparable days in 2000. This cannot be explained by comparable increases in costs or supply-and-demand balances. Some commentators and interested parties characterize the effect as "scarcity rents", suggesting the exercise of undue market influences, or even collusion.'

The plot then thickens: 'The unprecedented price levels of June 2000 may have had one predictable result. Many energy companies, including some participants in the California market, made very high profits during the second quarter. ... Although it is difficult to isolate the financial results from California operations, power plant operators are reporting extraordinary profits for the summer. One company that purchased 1354 MW of power generating capacity from the utilities reported a 176% profit increase for the quarter ending June 30.

' Although these businesses also produce other products than electricity and sell them in other markets than California, such high profits suggest that this group of companies benefited substantially from the summer's unprecedented wholesale electricity price run-up in California. As a PG&E Vice President recently explained: "If you've got the only Beanie Babies in town, you can charge whatever you want....Is that (price) gouging? I don't know."'

Uncompetitive electricity market

CPUC and EOB concluded in their report to Governor Davis that the state's power markets, though deregulated, are ' not now competitive' . The reasons ' may be many, said their report: ' The complexity and fragmentation of power purchase markets may be partly to blame. Their structure may encourage market participants to game the system to their benefit even while obeying the rules. Wholesale electric power has been fragmented into many products that are independently priced in a series of auctions administered by the PX and ISO. The decision to segment wholesale power into four or more separate products creates significant market inefficiencies that serve to provide gaming opportunities for market participants, opportunities that may be perfectly available under current rules.'

Whatever the detailed causes, the effects were clearer: ' The operation of California's vast and valuable electric system is now controlled primarily by the ISO and the PX, organizations that have no duty to serve California's consumers or economy. The ISO and the PX report to boards that are comprised of

' stakeholders' , none of whom represent the public and many of whom have an interest in keeping wholesale electric prices high. These organizations do not have contact with the ultimate consumers of power and conduct much of their business in private.

' The pricing system, in combination with inelastic customer demand and the ability of power sellers to withhold supply, results in wholesale prices that may bear no relationship to power producers' costs. At the same time, no government body is compelling power plant construction or maintenance during this period of aging plants and short supplies.'

This was the reality Governor Gray Davis invited the people of California to face, but what good will that do them since they no longer have access to the institutional levers with which to change it? Various measures have been taken to deal with the crisis in the short term, but the stark longer-term choice their politicians face is either to go for complete deregulation – as many in and around the White House urge – or to find ways to restore public accountability and control. The issue behind that choice is whether electricity supply is indeed just like producing and selling Beanie Babies, rather than being a public good.

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1 California's Electricity Options and Challenges: Report to Governor Gray Davis', Michael Kahn (Chairman, Electricity Oversight Board) and Loretta Lynch, President, California Public Utilities Commission (CPUC), August 2, 2000. Available as indicated in the following note.

2 Go to http://www.cpuc.ca.gov/published/report/GOV_REPORT.htm

3 'Gaming' means the employment of information advantage to manipulate the market.

4 'How Enron got California to buy power it didn't need', Richard A. Oppel, Jr, in New York Times, May 8, 2002.

5 Drift and Disarray: the California Energy Crisis continues, William Ahern, Consumers Union of the US, San Francisco, March 2002.