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December 10, 2000

## RECKONINGS

# California Screaming

By PAUL KRUGMAN

**C**alifornia's deregulated power industry, in which producers can sell electricity for whatever the traffic will bear, was supposed to deliver cheaper, cleaner power. But instead the state faces an electricity shortage so severe that the governor has turned off the lights on the official Christmas tree — a shortage that has proved highly profitable to power companies, and raised suspicions of market manipulation.

The experience raises questions about deregulation. And more broadly, it is a warning about the dangers of placing blind faith in markets.

True, part of California's problem is an unexpected surge in electricity demand, the byproduct of a booming economy. It's possible that the crisis would have happened even without deregulation.

But probably not. In the bad old days, monopolistic power companies were guaranteed a good profit even if their industry had excess capacity. So they built more capacity than they needed, enough to meet even unexpectedly high demand. But in the deregulated market, where prices fluctuate constantly, companies knew that if they overinvested, prices and profits would plunge. So they were reluctant to build new plants — which is why unexpectedly strong demand has led to shortages and soaring prices.

Now you could say that in the long run there is nothing wrong with that. Building extra generating capacity was costly, and the costs were passed on to consumers; while prices may fluctuate in a system with less slack, on average consumers will pay less. In fact, textbook economics suggests that it's actually a good thing that electricity prices skyrocket when supply runs short: that's what gives the power companies an incentive to invest. And so you could argue that no public intervention is warranted — indeed, that the caps that still place an upper limit on electricity prices only worsen the problem, that we should rely on market competition to solve the crisis.

But how competitive is the electricity market? What makes California's power crisis politically explosive is the suspicion that it's not just about inadequate capacity, but also about artificially inflated prices.

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How might market manipulation work? Suppose that it's a hot July, with air-conditioners across the state running full blast and the power industry near the limits of its capacity. If some of that capacity suddenly went off line for whatever reason, the resulting shortage would send wholesale electricity prices sky high. So a large producer could actually increase its profits by inventing technical problems that shut down some of its generators, thereby driving up the price it gets on its remaining output.

Does this really happen? A recent National Bureau of Economic Research working paper by Severin Borenstein, James Bushnell and Frank Wolak cites evidence that exactly this kind of market manipulation took place in Britain before 1996 and in California during the summers of 1998 and 1999.

You wouldn't normally expect this to happen in colder months, when demand is lower. Still, state officials have understandably become suspicious about California's current power emergency — an emergency precipitated by the odd fact that about a quarter of the state's generating capacity is off line as the result of either scheduled repairs or breakdowns.

Maybe California power companies aren't rigging electricity prices. But they clearly have both the means and the incentive to do so — and you have to wonder why the deregulators didn't worry about this, why they didn't ask seemingly obvious questions about whether the market they proposed to create would really work as advertised.

And maybe that is the broader lesson of the debacle: Don't rush into a market solution when there are serious questions about whether the market will work. Both economic analysis and British experience should have rung warning bells about California's deregulation scheme; but those warnings were ignored — just as similar warnings are being ignored by enthusiasts for market solutions for everything from prescription drug coverage to education.

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December 31, 2000

## RECKONINGS

# Real Reality's Revenge

By PAUL KRUGMAN

**A**t this time last year a share in WebMD — formerly Healtheon, the "new new thing" of Michael Lewis's best-selling book about Silicon Valley — was worth about as much as 1.5 megawatt-hours of wholesale California electricity. But since then tech stocks have plunged, while power shortages have driven prices in California's electricity market into the stratosphere. WebMD has actually weathered the dot-com crash better than many other companies, but right now you would need to sell about 75 shares to buy a megawatt-hour.

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This wasn't supposed to happen. When The Wall Street Journal surveyed the economy a year ago, it brushed aside talk of physical limits as hopelessly old-fashioned, approvingly quoting an analyst who declared: "In a knowledge-based economy, there are no constraints to growth." The new millennium had, it seemed, ushered in an economic Age of Aquarius. But now the wizards of Silicon Valley sit there shivering (they have turned their thermostats down to conserve power) and talk about electricity g-g-generation. In other words, 2000 was the year that virtual reality — companies without physical assets, without profits and sometimes without products — lived down to the expectations of the skeptics. And it was the year that the real reality of oil supplies and power grids took its revenge.

Alas, it's no accident that the era of new-economy exuberance has been followed by shortages of old-economy staples like electricity.

California's power crisis is first and foremost a crisis of underinvestment — a booming state economy undone because nobody built the power plants and gas pipelines it needed. And at least part of the reason for that underinvestment was the excessive enthusiasm of the financial markets for all things tech: when digital businesses are valued at hundreds of times earnings, while utilities have multiples more like 10, who's going to put money into boring things like generators and transmission grids?

Phil Verleger, my favorite energy guru, believes that we have only begun to pay the price for the exaltation of clicks and bytes over bricks and mortar. For example, he argues that an important reason for the broader global

energy problems of the past year, which sent prices of oil and natural gas as well as electricity soaring, was the neglect of exploration and extraction in favor of sexy new- economy ventures. Actually, he puts it even more strongly: "The United States has proceeded like a third world country. Our firms and consumers have purchased the latest technology gimmicks without bothering to build the necessary infrastructure." (If you've ever been in a developing-country hotel or office building during a power outage, you know what he's talking about.)

If he's right, the two great nasty economic surprises of 2000, the tech bust and the energy crisis, are two sides of the same coin: both reflect the fallout from an infatuation with the new that made us unmindful of the old.

Of course, there's more to it than that. California's power crisis isn't just about misguided investors, too excited by the new economy to maintain the old infrastructure. It's also a tale of misguided policy — of an ill- conceived deregulation plan gone very wrong.

One indication of how badly deregulation has misfired is this: while the error of the tech sector — overestimating the demand for its services — was severely punished, the error of the California power companies — underestimating the demand for their product — has been richly rewarded. You don't have to be a raving populist to think that there is something wrong with that, and you don't have to be a conspiracy theorist to wonder whether there are some perverse incentives when an industry dominated by a few large players finds it hugely profitable not to invest.

But more on that another time. For now, let me just point out that deregulation, too, was based on the belief that we had transcended the old limitations — in the age of the Internet we no longer had to worry about the generation and transmission bottlenecks that had always prevented a workable free market in electricity, that had made regulation necessary to prevent abuses of market power. Now California has learned to its cost — \$8 billion and counting — that those old limitations still apply.

What a difference a year makes. Last December everyone who mattered believed in magic — the magic of technology, the magic of the free market. Now it's back to dreary reality. Happy New Year.

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January 7, 2001

## RECKONINGS

## Abuses Of Power

By PAUL KRUGMAN

**H**ow did California get into its electricity mess? Now what?

Start with the less interesting question. The biggest single cause of the California power crisis is simply that nobody expected demand for electricity to grow so rapidly. When the political momentum for deregulation was building, in the mid-1990's, California's economy was still suffering the aftereffects of a nasty recession; most experts thought that there would be excess generating capacity well into the next decade. Then California began growing faster than anyone had thought possible. The result was surging demand for power.

To cope with an increase in demand, you either need to persuade consumers to consume less or make it possible to produce more. But California's deregulation did neither.

First, while the wholesale market in which local utilities buy power from generators has been set free, the prices charged by local utilities to final users have stayed under state control — at the request, let us add, of the utilities, which wanted protection from a price slump. So consumers have had no incentive to economize on electricity use.

Meanwhile, no new power plants have been built. This is partly the result of the regulatory hurdles that would-be builders of plants must surmount; it is probably also the result of the fact that companies that already own substantial shares of California's generating capacity, and which therefore stand to benefit from a tight market, have little incentive to add capacity. (Some analysts believe that these power companies have actually withheld power from the market for the same reason, though this is not the core of the crisis.) Eventually new plants constructed by new players will ease the strain — but this will take time.

So for the time being California finds itself with a demand for electricity that it cannot meet. One result has been rationing of power, mainly hurting businesses rather than families. But the physical shortages of electricity have actually been more or less manageable; what is really pushing the

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state to the brink is the financial fallout. California's utilities find themselves in a bidding war, both with one another and with their counterparts in neighboring states, for the limited supply of wholesale power available. This bidding war has sent wholesale electricity prices to 40 or 50 times their normal level, bringing huge windfall profits to the companies that generate power, but also bringing the utilities that deliver power to the edge of bankruptcy.

It's a miserable story — botched deregulation meets Murphy's Law. But the main question is, Now what?

Bear in mind that while the huge profits now being earned on electricity sales will lead, over time, to construction of more plants, it could be years before the situation returns to normal. So what are the options?

The simplest option would be for California to deregulate all the way — and let the prices to final consumers go as high as necessary to persuade them to limit their demand to the available supply. This would work; it would be efficient; and it would also transfer tens of billions of dollars from California consumers to eight lucky power companies.

An alternative would be a temporary and partial reregulation: placing price caps on wholesale power, while also raising prices to consumers, and engaging in some power rationing while fixing the pricing system and hastening the arrival of new generating capacity. This would be messy, somewhat inefficient and a lot fairer. It would also, however, require federal help. California has already found that it cannot unilaterally impose price caps on wholesale power because other states are also short of power, and the electricity simply goes elsewhere. So this solution would require higher-level intervention.

If the "power summit" now scheduled for this week had happened a year ago, one could reasonably have expected a compromise along the lines of the latter alternative — that is, a compromise that, without trying to wish the shortage away, tries to limit the damage to consumers and the windfall profits to producers. But George W. Bush doesn't just have an ideological attachment to free markets; he has close personal ties to some of the companies that are making such huge profits in California right now.

Mr. Bush has been conspicuously silent on the California crisis. But in the end it's his decision. Will he help California find an answer that does not involve paying a huge ransom to his friends?

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