

California Dreaming

The American Spectator
15 May 2001

Letters Editor

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Had William Tucker interviewed me before claiming I caused the California electricity mess (April), he could have avoided embarrassing himself and misleading your readers. I'm not talking about routine sloppiness—claiming the Sierra Club published *Soft Energy Paths*, attributing fuel-price decontrol to President Reagan rather than Carter and the retail restructuring push to FERC in '95 rather than to the California PUC in '94, ascribing the collapse of nuclear orders to Three Mile Island when Wall Street had balked earlier, confusing nonhydro renewables with total renewables, even reinventing a 25-year-old misreading (I didn't claim that "the U.S. transportation sector could run on gasohol," let alone made by beverage methods from crops of hops and grapes*). The big problem is a chain of serious errors in fact and logic.

First, Tucker believes Internet growth is causing electricity demand to soar. It's not, and demand isn't soaring; it's crawling. (Mark Mills, who started the original myth about the Internet's electricity use, brazenly repeats his junk science in your April issue. Shame on him and you.) The Internet's tiny use of electricity isn't just my claim; it's an irrefutable, carefully measured fact (<http://enduse.lbl.gov/Projects/InfoTech.html>) now accepted by virtually every professional organization in electricity and information technology.

Tucker claims "both California's and the nation's energy consumption figures belie" this. Sorry, but the national data, which he doesn't cite, show no "Internet effect" whatever. Neither do California's data. The state's per-capita use of electricity, which he claims jumped after 1996, has stayed about flat for a quarter-century, and according to the data on the California Energy Commission's website, was up at most 0.3% from 1990 to 2000 (actually down using the 2000 Census's population data). California's electrical consumption during the '90s grew with its population, but at an average rate of only 1.15% per year, half as fast as the economy grew.

Tucker also seems to have some data source unavailable to the rest of us. He says state electricity demand grew 8% in 1999; the CEC's website reports 0.94%. (It reports growth in 2000 as 4.6%, but that's normal-to-low for a hot year, a leap year, with a preliminary state estimate of 8.7% economic growth.) He also claims 12% electricity consumption growth in Silicon Valley in 2000; the CEC reports 3.1% in 1999 and 3.6% in 2000. The "server farms" he might have in mind use less—probably much less—than 1.6% of Bay Area and 0.2% of U.S. electricity. In short, Tucker's thesis is as false as his data.

Tucker also believes California's power supplies were overwhelmed by soaring peak demand: "By the spring [of 2000], month-to-month peak usages were up 21 percent over 1999." Wrong again. The peak *hour* in May 2000 did have 21% higher demand than the peak hour in May 1999, but that's a meaningless fluke. As a March 11 *San Francisco Chronicle* feature pointed out, the average of daily peaks in May 2000 was up 12.8% over a year earlier; the same figure for the hot summer of May–September 2000, 8.3%; the same for all of 2000, 4.8%; and the peak hour for all of 2000 (adding back voluntary curtailments) was 0.15% *lower* than the peak hour in 1999. The weather-corrected average monthly peak in 2000 was up less than 1%, and for July through September, it was below 1999's. In short, peak loads changed little in 2000.

Tucker then combines his spurious explanation for nonexistent demand growth with his equally false belief that California added no generating capacity after 1994, leaving the state "woefully short of power." Electricity, yes; capacity to make it, no. Tucker doesn't ask why a system that had readily met a peak load of 53 GW (53 billion watts) in summer 1999 could suffer rolling blackouts at 29 GW in winter 2000/01. Half the state's power plants didn't suddenly disappear; they were still there, but many were calling in sick—not always, it seems, legitimately. Two-thirds of the competitive bidding space was held by seven firms, each of which could move the market. Botched restructuring, concentrated market power, and strategic bidding made it more profitable for those dominant suppliers to sell less electricity at a higher price than to sell more at a lower price. Having the same firms build more plants will only give them more capacity to withhold and no less reason to do so.

As to my role in the fiasco, I acknowledge having long urged and helped California to pursue the best buys first—typically efficient use of electricity, then cost-effective cogeneration and renewables. These added over 15

GW of resources by the early 1990s and saved the state billions of dollars. Even after being weakened in the mid-1990s, the efficiency efforts still raised California's electrical productivity since 1997 nearly four times as fast as in the rest of the country. Moreover, a tenth of California's 1999 generation came from nonhydro renewables, which like hydro are valuably immune to fuel-price volatility. Of the 4.5+ GW of capacity added in the '90s—more than the state's nuclear capacity—most was decentralized and nonutility-owned, because the market so chose. I also helped make regulation emulate efficient market outcomes by rewarding utilities for cutting customers' bills, not for selling more electricity. These highly successful and profitable policies didn't cause the crisis and, if continued, would have forestalled it. But in the mid-1990s, they were abandoned, over my vigorous protests, and dreadful policy blunders created today's disaster. Tucker falsely blames me for that result— which was avoided by the municipal utilities that continued to follow my suggested path.

The central thermal power stations Tucker favors are seldom ordered any more in competitive market economies, because onsite and local generation is cheaper, faster, lower-risk, more benign, and more reliable. Anyone who knows the field will instruct him that the transition to smaller plants is irreversibly underway, driven not by ideology but by market economics. Doubters are welcome to finance giant nuclear or coal plants and lose their shirts.

I'm a longstanding fan and practitioner of market mechanisms. Using them properly is a key part of California's energy solution. *TAS* can espouse sound economic principles more convincingly by doing standard fact-checking.

Amory B. Lovins
Chief Executive Officer (Research)

*The 1976 passage Tucker misrepresents actually stated, citing technical literature, that an "efficient U.S. transportation sector" could be run on biofuels (not gasohol and probably not chiefly ethanol) made from sustainably harvested "agricultural, forestry, and urban wastes"— wastes, not crops. The quoted comparison was explicitly offered to show the physical scale of the required conversion industry, not the suggested method or product. Tucker's canard was extensively rebutted 24 years ago. If he has any other evidence that I "often overstate [my] case," he should present it.

RMI Note: Amory Lovins has submitted the following response to *The American Spectator*:

William Tucker made up facts throughout his April article on me, as my July/August response showed (its unabridged text is at www.rmi.org/sitepages/pid171.php). Yet in his reply, Mr. Tucker can't kick the habit.

- California couldn't meet 17-21 January 2001 peak loads 24 GW lower than it had met in summer 1999 because, he claims, it was exporting power to the Northwest. No; the actual net power flows were small and mainly north-to-south.
- His April article claimed California's per-capita electric usage jumped after 1996 after a decade of decline. I noted it didn't jump—for a quarter-century, demand-side efforts kept it virtually flat (for example, it was lower in 2000 than in 1990), though it rose 57% in the rest of the country. Now his response criticizes me for quoting per-capita use, the metric *he* introduced, because it ignores population growth—as my July/August reply already pointed out.
- I called the demand spike in a single hour of May 2000, 21% above the peak hour in May 1999, a "meaningless fluke" not because utilities didn't have to meet it (of course they did) but because it doesn't indicate rapid growth in general demand as Mr. Tucker falsely claimed ("By the spring [of 2000], month-to-month peak usages were up 21 percent over 1999"). Neither do the weather-corrected peak loads, which utility planners and I use to understand the underlying trend, even though their reserves meet actual peaks, which are higher on abnormally hot days. Mr. Tucker now admits some of his claims of soaring demand "may have been exaggerated." Yes, indeed. His whole thesis rests on rapid demand growth that never occurred.
- His 3.4% growth in kWh consumption for 1998–99 is correct but irrelevant to his claim that *demand* (peak kilowatts, not kWh per year) grew 8%. The CEC website's updated data say demand grew 2.0% or shrank 2.4%, depending on definition.
- Yes, state electricity consumption grew 1% during 1990-95 vs. 14% during 1995–2000, but the explanation is much simpler than the power needs of the Internet: state GDP grew 1% and 32% respectively.
- I didn't claim other states' freeloading on pool reserves was the *only* cause of California's crisis—just one of many, because it raised price volatility.

The contrarian two-thirds of Californians who think the main culprit was not a shortage of generating capacity, as Mr. Tucker believes, but unbridled market power were joined on May 29 by ten distinguished independent economists who'd carefully studied the data and wrote President Bush with the same conclusion.

Readers, or historians, who judge between Mr. Tucker's views and mine will find that since my facts are real, not made up, they support sounder conclusions.

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