



An article from Rocky Mountain Institute

Small-Scale Renewable Energy Producers Are Walloping Nuclear Power in the Marketplace

Rocky Mountain Institute researchers today doused the hype about "nuclear revival" in an icy bath of reality. They argue that worldwide, the decentralized, low- or no-carbon sources of electricity—cogeneration and renewables to be too small and too slow to help much with climate change—are already bigger than nuclear power as a global power source.

"Nuclear advocates are desperately trying to create an illusion that their failed option is being revived," says Lovins, the lead author of the analysis, "so all its remaining costs and risks, which private investors have shifted to taxpayers. This bailout, now being debated in Washington, is claimed to be vital because nuclear power is the only option fast enough to combat climate change. But industry and official data reveal that claim to be false. While under attack of market forces, its derided smaller-scale competitors are already a bigger global power source and nuclear power continues to fade away."

The analysis appears as the cover story in RMI's summer 2005 newsletter, published today (available on www.rmi.org/sitepages/pid1154.php <http://www.rmi.org/sitepages/pid1154.php>), and documents the growth of decentralized electricity generation: cogeneration (producing electricity and useful heat together) and renewable power, geothermal, small hydro, and solar, but excluding big hydro dams—any over 10 megawatts). In 2004, decentralized or no-carbon sources added 5.9 times as much net generating capacity and 2.9 times as much electricity. By the end of 2004, the decentralized competitors' global installed capacity totaled roughly 411 gigawatts, compared to nuclear plants' 366 gigawatts—and produced about 92 percent as much electricity. (The difference is because renewable sources run fewer hours per year.)

Thus, the article notes, these so-called "minor" alternative sources—often claimed to be unimportant, unproven, and in the future—actually overtook nuclear's global capacity in 2003, rivaled its 2004 and will match its 2005 electricity output by 43 percent. Official and industry forecasts indicate that in 2010, they'll add 177 times as much capacity as nuclear power will—the ultimate test of energy technology in the free market. Not, of course, that the market is far more heavily subsidized (http://earthtrack.net/earthtrack/index.asp?page_id=177&catid=66 http://earthtrack.net/earthtrack/index.asp?page_id=177&catid=66) than its competitors. That makes their market victory even more remarkable, with manufacturers earning more revenue selling renewable power equipment as nuclear plants—and the latter all selling to centrally planned and disciplined markets.

Due to a lack of global data, these comparisons don't even count competition from the demand side—manufacturers wringing more and better work from each kilowatt-hour. Lovins says that's generally bigger, faster, and more efficient than nuclear electricity. (He's widely considered one of the world's leading authorities on saving electricity, of which he has written an assessment in the 1980s and '90s. RMI earns most of its revenue by consulting for major companies or

"So the big question about nuclear 'revival' isn't just who'd pay for such a turkey, but also why bother? Why distort markets and biasing choices to divert scarce resources from the winners to the losers—a far slower and more expensive niche product—and paying a premium to incur its many problems? Nuclear advocates try to reverse the

portfolio of non-nuclear alternatives that has an unacceptably greater risk of non-adoption, but actual r

Lovins also debunks the notion that nuclear energy is the best investment against carbon dioxide emissions. The goal, he says, should be to displace the most emissions soonest for each dollar invested. As the amount of electricity and decentralized production can be installed faster than nuclear plants, and thus can displace But the key difference isn't just speed; it's also cost. An alternative that delivers electricity at one-third the many do, will buy three times as much climate solution per dollar as spending that same dollar on the nuclear power is the costliest option, choosing it actually makes climate change worse than if the best b

Operating a nuclear plant emits essentially no carbon, but the same is also true of renewable sources a cogeneration's emissions depend on its fuel (~60-70% worldwide uses low-carbon natural gas); generally than the separate power stations and boilers it replaces (often fueled with coal, the highest-carbon fuel)

"I've always been, and am today, open-minded about the possibility that [nuclear energy] may have hidden based on the literature and on deep practical experience of electric efficiency and production in scores nuclear power, using any technology, under any political system (let alone an attractive one), is or promise technically, or socially sound energy solution."

For more information, please contact Cameron Burns at 970-927-3851 or cameron@rmi.org or Anne Jak visit RMI's website at www.rmi.org.

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