



JUICE: Art Rosenfeld's Birthday Gifts to Us

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The story goes this way: Art Rosenfeld first became interested in energy efficiency back in the early 1970s, when he was a faculty member in the U.C. Berkeley physics department. Concerned about the impacts of the first Arab oil embargo, he would follow his colleagues around, flipping off the light switches after they'd left a room.

These days, Rosenfeld is known as "one of the founding fathers of energy efficiency." And that's what the White House called him last week in a news release announcing that Rosenfeld has been given the Enrico Fermi Award, our country's premier honor for scientists.

I think he'd rather just be known as Art.

Even as a member of the California Energy Commission, Rosenfeld eschews formalities and honorifics. What seem most important to him are the results of his work and the friends he has made along the way.

But I rather enjoy the irony of the Bush administration coming around to honoring energy efficiency as a science. You might recall Dick Cheney back in 2001 saying, "Conservation may be a sign of personal virtue, but it is not a sufficient basis for a sound, comprehensive energy policy."

More than anyone else, Art Rosenfeld has helped turn conservation into public policy. He helped develop and promote the three main concepts that are responsible for California's world leadership in energy efficiency - building codes, appliance standards, and utility energy-efficiency programs. These ideas have become the foundation for more sustainable energy policies, not just in the state but also across the nation and around the globe.

Coinciding with the public announcement of the Fermi prize, Art's many friends, former students, and colleagues held an all-day party for him in Berkeley on April 28, to celebrate his upcoming 80th birthday. It was also a way to promote what they called "The Rosenfeld Effect" on international energy policies and interpersonal relationships.

John Holdren, professor of environmental policy and director of the Woods Hole Research Center at Harvard University, had this to say in praise of his friend's life work: "California has shown the way, and Art Rosenfeld has shown California the way."

His early concern for conservation caused Rosenfeld to start working on ideas like motion-detecting sensors and other automated programs to make energy savings something that people do not even have to think about to achieve. And those ideas led to others: more efficient windows, better insulation materials, passive solar orientation, improved compact fluorescent bulbs and ballasts - an entirely new realm of projects and program ideas that he helped turn into reality at what would become the internationally renowned Center for Building Science at the Lawrence Berkeley National Laboratory.

That work continues today, as Rosenfeld oversees the CEC's near-constant effort to squeeze more efficiency out of the system via evolving standards for programmable thermostats, remote cycling of air conditioners and pool pumps, and the widespread adoption of interval meters for electricity that promote shifting of power use to off-peak periods.

"Ninety percent of energy efficiency is getting the technology right," Rosenfeld told me. I could imagine that there's nothing that would make him happier for his birthday than a lightbulb - compact fluorescent, of course - that would turn itself off when not needed.

Even approaching the age of 80, Rosenfeld continues to push the envelope of energy efficiency. One of his current projects is to expand acceptance of "white roofs" on buildings to reflect heat and cut the need for summertime air conditioning. "If we could get all the cities, let's say over a million people, to order white roofs, we'd save 10 to 20 percent on air conditioning. That's a huge amount of CO2. And white roofs reflect heat back into space instead of heating the world. Cooling cities turns out to cool the whole world, and gives us a reprieve on global warming," he said.

He is also relentless about searching the globe for the next great ideas for implementing efficiencies, whether in big leaps or in small increments. "Incremental is pretty good," Rosenfeld told me. "For instance, we're scrambling this year to copy from Europe, where escalators turn off when no one is using them. It's an easy sensing job. Escalators account for 1 percent of energy use in commercial buildings, and the payback time is two months," he explained.

"The Rosenfeld Effect" is now being felt in places like China, where Art and other California officials have managed to translate efficiency ideas into a workable program, endorsed at the highest levels of government. Via the work of his ex-students, it is also alive and well in developing nations, where they are applying appropriate technologies to bring heat, light, comfort, and clean water to the world's most desperately poor people.

There was one presentation, by Ashok Gadgil, a senior staff scientist at Lawrence Berkeley Labs, on the effort to introduce more efficient cookstoves to refugees huddled in camps in Darfur, in war-ravaged western Sudan. He described the terrible situation faced by these refugees, who have to walk for hours to find wood to fuel their cooking, each day walking further and further into dangerous territory because the land has been denuded by their constant foraging. He estimated that 300,000 stoves at \$15 apiece could help meet the needs of 2.5 million refugees, while cutting their need for fuel by 75 percent.

After the talk, Rosenfeld got up to tell the audience that they could help this project with donations made through an account administered by LBL - and that they could be assured their contributions will be matched.

If you're wondering from what source, the answer goes back to the Fermi award, which entails a \$375,000 cash prize. I'm told that Art is determined to give it all away.

That's just one of the many birthday gifts that Art Rosenfeld is sharing with us all.

For information on donating to the Darfur cookstove project, please contact ajgadgil@lbl.gov.

[Arthur O'Donnell](#)