CREDITS: (TOP TO BOTTOM) SMITHSONIAN INSTITUTION; DOE ENERGY INFORMATION ADMINISTRATION

# NETWATCH

edited by JOCELYN KAISER

COOL IMAGES

## Current Retrospective

These eerie ceramic tubes are draped with currents, not cobwebs, as insulators undergo a high-voltage test in the 1930s at a Westinghouse factory. The first 4 decades of electricity, when corporate scientists seemed to generate endless wonders—from televisions to electric heaters—are chronicled in 600 photos from the Science Service news syndicate and now online at the Smithsonian Institution.* The shots range from "dainty maids" (in the words of Science Service caption writers) perched in the center of huge doughnut-shaped generators, to snapshots of the first, sugar granule–sized semiconductors in 1968. The original captions reflect a wide-eyed era when, as *Science News* put it in 1927, "drama lurks in every test tube."

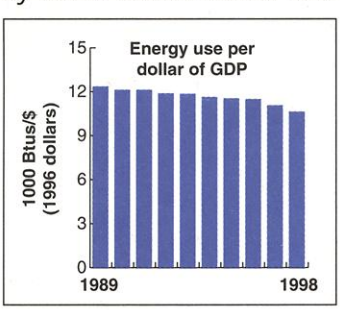
* americanhistory.si.edu/scienceservice

NET NEWS

## Internet and the Green Economy

Feeling guilty about those hours you spent over the holidays shopping at dot com stores? Take solace in the thought that your online habits might help stave off global warming, according to a provocative new report.*

Struck by data showing a plateau in U.S. energy consumption just as the commercial Internet has taken off, researchers at the nonprofit Center for Energy and Climate Solutions near Washington, D.C., set about analyzing how online shopping, telecommuting, and other Net habits may be saving energy. For example, the group calculates that buying a book from Amazon.com instead of from a bookstore consumes 1/16 as much energy, as Amazon.com sells eight times as many books per square meter of building space and has lower square-meter utility costs. Supporting this hypothesis, says lead author Joseph Romm, a former head of energy efficiency at the Department of Energy (DOE), are "astonishing data" showing that the economy boomed 4% in 1997 and 1998 while energy consumption barely rose. Despite low fuel prices, energy consumption per dollar of gross domestic product fell more than 3% each of those years (see chart), a trend too large to be explained by factors such as warmer winters, says Romm. If the pattern holds, "it will be much easier to meet the Kyoto [climate treaty] targets than everybody says," he says.



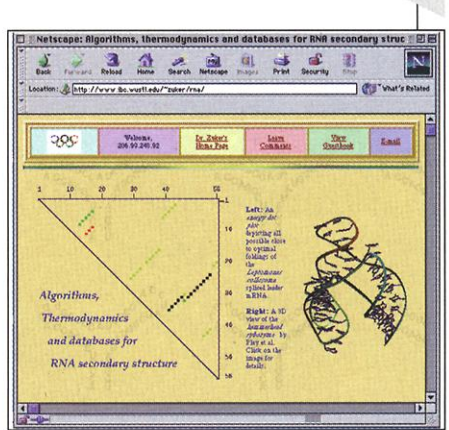

Some observers call the report's conclusions premature. The gain in energy efficiency "is certainly consistent with a beneficial effect of computers in the marketplace," but drawing conclusions from only 2 years of data "leaves me just a tad skeptical," says Joel Darmstadter of Resources for the Future in Washington, D.C.

* www.cool-companies.org

SITE VISIT

## RNA World

www.ibc.wustl.edu/~zuker/rna




Long dismissed as DNA's bland cousin, RNA is now attracting attention for talents that go beyond serving merely as a template for making proteins. Bits of RNA are under study as catalysts, as targets for drugs, and even as possible players in the origin of life. As with proteins, structure dictates function for these single strands of nucleotides. Need to know the shape of a particular folded RNA molecule? Run your sequence past Michael Zuker's RNA pages.

Several hundred requests to fold a molecule arrive each day, says Zuker, a biomathematician at Washington University in St. Louis. His algorithm, which assumes an RNA molecule will relax into the least energy-demanding pose, churns out illustrations of possible two-dimensional structures along with graphs of their energy states. Users can also browse Zucker's lectures on RNA folding or ask him a question in the site's guestbook. Still not satiated? Follow external links to RNA-oriented databases, journals, and texts—such as the intro to the 1993 book *The RNA World*, which describes the era before DNA, in which RNA may have performed the roles of DNA and enzymes. Other links dispense more software. The Universität Bielefeld in Germany, for example, offers folding animations: Watch an RNA molecule stretch, jiggle, and bend into a shape resembling an off-kilter vase.

HOT PICKS

**Tracking a killer.** Cancer sleuths seeking to decipher the cryptic meaning of regional trends can now pull up cancer death rates in all U.S. counties. This new Web atlas covering 1950 to 1994 documents, for example, a marked shift in lung cancer rates in white men, which were once highest in the Northeast and the southern coast but are now elevated across the South. www.nci.nih.gov/atlas

**Digital personas.** For a discussion on the ethics of conducting human subjects research on the Internet, check out this new report from AAAS (*Science*'s publisher). Among the questions it raises are whether one's "online persona" should get the same protection as a real person and what the risks are to subjects of a study in which a researcher listens in on a chat room. www.aaas.org/spp/dspp/sfrl/projects/intres/main.htm

**Power trip.** Aiming to help students learn about fusion is this site, where they can run a virtual tokamak, do a mock analysis of real data, or send a question to a plasma physicist. It's all part of the Internet Plasma Physics Education Experience at ippex.pppl.gov/ippe

Send Internet news and great Web site suggestions to netwatch@aaas.org