

Solar power in Spain

Even though "the rain in Spain" was just a silly refrain from a song that was all wet, the International Energy Agency is sponsoring two demonstrations in Spain of how solar energy can substitute for fossil fuels in the generation of electricity—even when it rains. Each project will pump 500 kilowatts into Spain's utility grid.

One system, being designed by the Acurex Corp. of Mountain View, Calif., with the support of Técnicas Reunidas of Spain and seven other European firms, will have a field of distributed collectors 35 miles inland from Almaria in southern Spain. The collector fluid, an organic oil, will be heated to 550°F, then passed through heat exchangers to power the turbine. The oil also can be stored in insulated tanks to provide power for up to four hours at night—or on days when it rains on the plain.

Oil to burn in Mexico

Dark forecasts for short-term oil production are starting to lighten up. As North Sea oil flows into England, and as Alaskan north slope oil pools on the West Coast, it has recently come to light that Mexico may have oil reserves that rival Saudi Arabia's. According to *THE NEW REPUBLIC*, Aug. 19, Mexico apparently has petroleum reserves of 150 to 200 billion barrels. *TNR* reports that these huge reserves have been known by the CIA for two years, but "two administrations have concealed this information from the American people and from Congress, apparently to avoid undermining energy policies premised on scarcity and foreign policies based on nuzzling the Arabs."

Rumors of huge Mexican reserves have rippled through the U.S. oil industry for some two years. And although the Mexican government is notoriously tight-lipped about its escalated reserves, officials at PEMEX, the state-owned oil company, have boosted certified estimates by 360 percent in the past six years.

Whether or not there was a conspiracy to cover up the extent of the reserves, officials in the State Department, the Department of Energy and the Treasury Department now confirm that the reserves are huge. The question at the moment seems to be whether Mexico has the equipment, the technical ability and the political muscle to tap a substantial part of the reserves. Oil industry figures suggest that, with careful development, Mexico might be able to produce 10 million barrels a day by 1985 or 1990. In contrast, Saudi Arabia now pumps 7.5 million barrels a day, and has the capacity to produce 11.5 million.

New oil finds are taking some of the punch out of predicted oil shortages. They will still occur, according to most estimates, but they will occur later and with less severity than was expected a year ago.

Uncle Sam conserves fuel

The top energy addict in the United States, the federal government, is beginning to kick the habit—at least a bit. According to the first report by the Department of Energy, "Energy Management in the Federal Government," energy use during the past two years is down 3.7 percent. During the same period, the nation's overall energy consumption increased 7.3 percent. The information compiled came from sixty-six departments and agencies and represented savings of more than 27 million barrels of oil. Energy saved by the government is enough to heat more than one million homes for one year. According to the DOE report, most savings were the result of a shift from standard and mid-sized autos to compact and sub-compact cars. Between 1975 and 1977 the number of standard sized autos in the federal fleet was reduced by nearly one-half, while the number of sub-compacts nearly tripled.

New secrecy-order challenge

A small group of Seattle inventors have spent an estimated \$33,000 of their own funds to develop and to try to patent an "advanced communications-privacy device" that employs a technology related to "spread-spectrum communications." What is it? The researchers are fighting to talk about it, but a secrecy order prevents them from discussing what it is, explaining how it works or obtaining a patent for it, according to the Sept. 8 *SCIENCE*. The order was issued by the Commerce Department at the behest of the National Security Agency.

As the laws now stand, secrecy orders are issued by federal agencies through Commerce anonymously and without explanation. They also permit issues no forum for rebuttal. Had the secrecy order on George Davida's research into safeguarding computer data (SN: 6/10/78, p.373; 7/1/78, p.7) not been mysteriously rescinded, he too would be fighting, because the act can effectively muzzle a researcher without recourse. In the process, it might put him out of a job or career.

The Seattle group, headed by Carl R. Nicolai, a tenured professor, have lawyers looking for a procedure that might grant them a chance to rebut the government's claim that disclosure of the technology will jeopardize national security. If that fails, they will consider testing the constitutionality of the secrecy order in the courts. Unlike Davida, their work was done without government support. As such, their fight will test the degree to which private firms and individuals can compete with government contractors to develop and commercially market "sensitive" technologies.

Start your own scientific society

Do you lack a society of peers with whom to share your research and theories? The Press may be your answer. Anyone with an intellectual interest not well served by an existing professional society can send a "problem statement" to The Press. The clearinghouse will help match isolated individuals with similar interests to create new societies, says founder David G. Hays, a linguistics professor at the State University of New York at Buffalo.

Hays says there is no registration fee for the service, initiated in late June. Once the nucleus for a society congeals, Hays's organization will help it circulate research papers among its members for comments and criticism. "The papers that survive will be published more widely," Hays says, "and get broad circulation with no more delay than in the usual system with referees and backlogs."

Hays said the International Committee on Computational Linguistics, which he helped to found, recently organized its first conference; several hundred persons attended. For more details, write The Press, 5048 Lake Shore Rd., Hamburg, N.Y. 14075.

Directory of Chinese R&D

Although the People's Republic of China is pursuing foreign cooperation in the exchange and development of science and technology, it hasn't been too vocal with details of its own programs and capabilities. A 1,600-page, three-volume directory by the National Council for U.S.-China Trade in Washington purports to do just that. It covers the research of all known scientific institutes through 1977, listing names and addresses of the researchers, the organizational structure of their institute, details of their past and present research, and, when known, descriptions of technical equipment. This reference work, containing no photos, was edited by an expert on Chinese technology transfer. From rural medicine to laser and semiconductor technology, it's a \$200 to \$300 key to research trends and needs.