# Carter Hails Solar Age in Presolstice Rite

*The new subsidy program follows the lead of the solar lobbyists, but they find it inadequate*

Basking in the newfound popularity of solar power, President Carter stood on the roof of the White House on 20 June—a glorious day—and dedicated a solar hot-water heater that will replace about $1000 worth of steam heat used each year in the kitchen of the staff mess. He then announced to a gathering of solar enthusiasts, federal officials, and reporters the terms of a government subsidy program designed to lead the nation into "the solar age."

The solar advocates present grumbled that the package contained more imagery than substance. Department of Energy (DOE) officials who worked on the plan over the last year replied that it set a very ambitious goal that will introduce new technologies at a pace approaching the limits of feasibility.

The goal is to supply 20 percent of the nation's energy needs with solar power by the year 2000. Today, DOE estimates, the United States gets about 6 percent of its energy from solar power, defined broadly to include hydroelectric projects, wood burning, and wind energy. The President said that his program will raise the total federal budget and tax expenditures for solar power from $799 million in fiscal year 1979 to a little over $1 billion in fiscal 1980. There will be no supplemental appropriation, but Carter claimed there will be a new expenditure of $100 million a year, beginning in fiscal 1981, to finance a solar energy development bank. However, this funding is contingent on congressional passage of the windfall profits tax on oil.

The ceremony gave evidence that the Administration considers solar energy a weighty cause, at least in terms of public relations. A squad of DOE officials was on hand to brief the press and absorb some friendly attention, which seems scarcer than crude oil these days. DOE secretary James Schlesinger was there, along with the newly nominated undersecretary (now assistant secretary for energy technology), John Deutch, the assistant secretary for conservation and solar applications, Omi Walden, the assistant secretary for policy, Alvin Alm, and others.

Members of some environmental and prosolar groups who had pressed Carter to develop a strategy of this kind said they were disappointed, however. They claimed the plan does not provide the funds necessary to meet its own goal. Herb Epstein, a representative of the group calling itself the Solar Lobby, was quoted before the package was released as saying, "It's terrible. It's the very minimum [Carter] could have done politically." Indeed, even as the President took his guests on a tour of the new heater, Epstein, Denis Hayes, chairman of Solar Lobby's board, and other solar lobbyists among the crowd on the roof were telling reporters what they felt was wrong with the plan.

The President's message came out of a prolonged domestic policy review begun on "Sun Day," 3 May 1978. Hayes organized Sun Day as a national promotion campaign, and he was the chief author of the Solar Lobby's "blueprint," which called for the creation of a solar development bank. As envisioned in that document, the bank would provide long-term, low-interest (3 percent) loans to buyers of solar technologies, counterbalancing on a small scale some of the subsidies that encourage people to burn fossil fuels. "Reasonable loan limits," the blueprint suggested, "might be in the range of $10,000 for a single-family home, $5,000 per unit for multiple-family dwellings, and $200,000 for commercial buildings." Carter's plan, born of a year's debate between solar advocates and budget-cutters in the Treasury Department and the Office of Management and Budget, adopts the blueprint's bank scheme and even its exact loan ceilings. (It differs in allowing variable interest rates, which would be set by a public board of directors.) But there are two catches in the funding mechanism that, in the view of the Solar Lobby, make the plan a minimal effort.

The first is timing. The initial federal

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Photo by Jack Kightlinger

*President Carter, pausing between summit conferences in Vienna and Tokyo, dedicates a water heater on the roof of the White House West Wing and delivers a solar message.*



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science at the Massachusetts Institute of Technology; and Jerome Berson, a chemist at Yale University. The academy would like to complete its study in time for OSHA's consideration, but says it will take until December to wrap things up.

**Darvon**, the most popular prescription painkiller in the United States (*Science*, 2 March). Secretary of Health, Education, and Welfare Joseph Califano has delayed for another year a final decision on whether Darvon's use should be strictly limited by the federal government. "I have concluded that we need more research on Darvon to make a reasoned and legally defensible judgment" on more tightly controlling Darvon under the drug abuse laws, says Califano. Research will focus on the propensity of Darvon to cause either physical or psychological dependence, an area where Califano says "we do not now possess sound overall data." In the meantime, he urged doctors and pharmacists "to heed this simple message: Never use Darvon . . . unless there is really no alternative, and then only with care." Doctors should avoid prescribing it, pharmacists should dispense it only with extra warnings, and patients should not ask for it, Califano says.

**Skylab** (*Science*, 18 May). The satellite is still up in the air as of this writing (and now expected to come down in July), but residents of Basidpur, Pakistan, became excited on 11 June when an object fell nearby that appeared at first to be part of the satellite. Bearing the numbers 10-95 and 14-47-84, the contraption resembled a flying saucer with two foam bags and nylon ropes; Pakistani scientists apparently decided it was part of a different satellite. The understandably embarrassed nation that sent it into space has not yet owned up.

**The Middle East study center at the University of Southern California** (*Science*, 9 March). The center, which became embroiled in charges of Arab influence, has been completely restructured by the university's board of trustees. Financial arrangements with the initial Arab donors have been dropped, and a former Arabian American Oil Company executive is no longer assured of obtaining the post of director. An academic advisory group and a board of outside visitors will oversee the center's operations and the new director search. Meanwhile, a similar center at the University of Texas has resisted the appointment of Abraham Marcus, a Jewish doctoral candidate at Columbia University, as one of its Arab historians. Members of the history department at Texas, who are pushing for the appointment, claim that Marcus is being denied the post because the center fears it would endanger their funding from Arab nations. The director of the center says that other considerations figure in their resistance.

**J. Anthony Morris**, a scientist who persistently criticized the federal vaccine program from within the Bureau of Biologics at the Food and Drug Administration (*Science*, 30 July 1976). Resolving a long-standing fight between Morris and the FDA, an FDA administrative law judge on 13 June upheld the decision of Morris' superiors to fire him from the agency in 1975 for insubordination and inefficiency. Morris had claimed his firing was in retaliation for various grievances he lodged against the agency, and also for his opposition to the swine flu immunization program. In this latest round, the judge declared that "Dr. Morris' allegation of retaliation for filing a grievance is based solely on circumstantial evidence and post hoc reasoning" and that the penalty of firing "is not in itself overly severe in light of the charges" sustained in earlier administrative proceedings. Morris also claimed his firing was prompted by negative peer reviews from an advisory group that depended heavily on the Bureau of Biologics for grants and contracts (members of the group had received $11 million in federal money between 1972 and 1976). The judge concluded that he was "unable to find that the Panel's criticisms of Dr. Morris' work were not in good faith."

**Antibiotics in animal feeds** (*Science*, 29 April 1977). At the time this was going to press, the Food and Drug Administration (FDA) was placing the finishing touches on an order banning the use of diethylstilbestrol (DES) in animal feed to promote weight gain. DES is thought to pose an increased cancer risk for consumers of beef; its ban has been sought by FDA since 1972, and personally by FDA Commissioner Donald Kennedy since he took office. Kennedy left office on 30 June, and the ban was his last act.

***R. Jeffrey Smith***

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contribution to the bank is not due until fiscal 1981. That will be too late to rescue many of the fledgling solar industries that jumped into the market early and are now on the verge of bankruptcy, Epstein said. His chief disappointment, however, was that the bank's funds will come from Carter's proposed Energy Security Trust Fund, which will be financed by revenues collected through the windfall tax on oil profits. The latter has run into strong congressional opposition, and some doubt that it will clear the Senate Finance Committee, whose chairman, Russell Long (D-La.), has earned a reputation over the years as a defender of the oil industry against unwanted tax proposals.

The President's strategists feel they have made a clever decision in linking a popular item in Congress with an unpopular one. Domestic policy adviser Stuart Eizenstat said at a White House briefing that the solar plan "will make the windfall tax a more attractive thing to support." Asked whether the defeat of the tax would also kill the solar bank, Eizenstat said, "We'll cross that bridge when we come to it." He expected the tax to pass. Schlesinger chimed in, with a smile: "Any examiniation of congressional behavior over the last few years does not reveal a reluctance to fund solar energy projects." If Congress provides the money before fiscal 1981, Eizenstat said, the solar bank will begin operating sooner. A solar bank bill (HR 605), drafted by Representative Stephen Neal (D-N.C.), has been approved by one subcommittee of the House banking committee and now awaits the review of the housing subcommittee, due to be completed by 3 August.

Schlesinger described the federal government's role as that of a catalyst. The effort, he said, "is not akin to a man on the moon type project." which was done entirely with federal muscle. The success of Carter's plan depends very much on the degree of enthusiasm shown by state governments, private industry, and individual consumers. DOE will not push for rapid commercialization of solar technologies unless they have proved to be competitive in the marketplace. For example, Schlesinger said, the government is not about to make massive purchases of photovoltaic electric cells for its own use, because the DOE believes the technology is not yet commercially marketable. He would prefer to wait until the cost per peak watt has fallen from the present level of around $10 to $2. Buying photovoltaic cells now, Schlesinger told reporters, would risk "freez-

ing'' the technology in a primitive stage.

This cautious approach drew fire from the Solar Lobby, which likened Carter's plan to something that might have been produced by Presidents Nixon or Ford. Gus Speth, a former member of the private environmental group called the Natural Resources Defense Council, now a member of the President's Council on Environmental Quality, said he was disappointed by this criticism. One of solar energy's promoters in the Administration, Speth argues that Carter's plan adopts what was known as option 2—the ''maximum practical'' plan for accelerated growth—in the domestic policy review memorandum (*Science*, 19 January 1979). Speth said, ''This represents a $3 billion commitment through 1985 over and above the R & D baseline budget we've had from the Office of Management and Budget.'' He called it a ''major leap forward,'' an ambitious program near ''the upper limit of what we can achieve.''

Some of the important pieces of the program, aside from the bank, are as follows:

- The largest item ($1.5 billion) is a proposed tax credit of 20 percent, or up to $2000 per house, for construction of new homes using approved ''passive solar'' designs. This, like other credits, depends on passage of the new oil tax.
- An increase from 10 to 25 percent in the investment tax credit for industries and farms building solar ''process heat.''
- A new 15 percent tax credit for the purchase and installation of one wood-burning stove in each principal residence.
- A permanent exemption for gasohol from the 4-cents-a-gallon federal gasoline tax.
- A change in Environmental Protection Agency (EPA) regulations to allow industries to ''bank'' their investments in solar energy in the EPA's pollution books as a credit to offset debits created by future pollution they may produce.
- An exemption from DOE regulations requiring industries to switch from oil or natural gas to coal. This will be given as a permanent exemption to any company that constructs a boiler deriving at least 20 percent of its annual energy from a solar source.
- Many administrative changes designed to bring new solar technologies to the attention of high-level bureaucrats, private investors, loan officers, and consumers.—ELIOT MARSHALL

# AAAS IV Is Curtain Raiser on Innovation

## *Discussion at policy colloquium moves toward broad assessment of the interrelationships between R & D and the economy*

Innovation is a hot topic in the Washington science policy circuit these days and at the fourth AAAS R & D Policy Colloquium on 19 and 20 June innovation was a recurring theme.

Planners of AAAS IV, as it is dubbed, hoped they had timed the meeting to make possible discussion of the results of a major interagency study on ways for the federal government to encourage innovation in industry. The report has been completed, but the White House has yet to finish winnowing out the recommendations it will back.

Jordan Baruch, the Commerce Department assistant secretary in charge of the project, who spoke at the meeting, was limited to dealing mainly with the methodology used in the study. In general, the focus was on innovation in the individual firm in industry and on the variables the federal government can do something about. Of possible models for the study, said Baruch, an ''investment model'' was chosen, and the object was to identify what influences decision makers to make the investments that lead to innovation.

The study indicated, for example, that an important consideration for the firm is the ''stream of payments'' that can be expected from innovation. The government has the power to influence this stream of subsidies, procurement policy, patents, and tax policy.

Baruch said that ''What we're seeing in the rest of the world is government making a conscious effort to join with industry to enhance the economy for society.'' In the United States, changes in policy involve the interests of unions and other groups and the adjustment of existing laws, and the question is what is ''appropriate.''

Word on the subject of innovation also came from Senator Adlai E. Stevenson (D-Ill.), sponsor of a proposal to enact the National Technology Innovation Act (S-1250), on which hearings were held in late June. The bill's purpose is to ''enhance technological innovation for the improvement of economic, environmental, and social well-being of the United States.'' Main features would be creation of an Office of Industrial Technology in the Commerce Department and establishment of ''centers for industrial technology'' around the country. The centers would be affiliated with universities and other nonprofit organizations and would promote innovation by building the base for ''generic'' (nonproprietary) research, fostering cooperation by individuals from industry and universities on technology innovation projects, and improving training and information programs in the field. The bill authorizes $40 million for the first year.

Stevenson, chairman of the Senate subcommittee on science, technology, and space, has announced that he will not seek reelection in 1980. He is generally regarded by scientists as a senator who understands. Stevenson has not discussed his reasons for leaving the Senate in any detail and, in a question period, was asked why he was not running.

On his service in the Senate, Stevenson said that ''10 years are enough, 16 years, too much.'' He had reviewed a panorama of problems involving science and technology and said what is needed is ''new ideas.'' Outside the Senate he hopes to have ''time to think, speak, and try to influence events.'' He gave the strong impression that he was not abandoning public life.

The R & D colloquium, which has become a regular AAAS rite of late spring, is based on the yearly analysis of the federal R & D budget by Willis H. Shapley and Don I. Phillips.* Attendance has grown steadily, rising from 261 last year to 387 this year. As a sign of the times and the growing sophistication of the ex-

**Research & Development, AAAS Report IV*. Available from the American Association for the Advancement of Science, 1515 Massachusetts Avenue, NW, Washington, D.C. 20005; $6.50.


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