Carter Plan: Dividend for R & D

Since it is political open season, President Carter's economic revitalization message will inevitably be read as a campaign document as well as a policy blueprint. The more because Carter's proposals concentrate on tax measures which, in an election year, tend to inspire skepticism.

In his message on 28 August, Carter continued to stress the importance of increased productivity in breaking the grip of an inflationary recession. To foster technological innovation, he proposed adding $600 million over the next 2 years to federal support of R & D, much of it to underwrite basic research. But on the innovation front he seems to be counting mainly on the "Industrial Innovation Initiatives" that he proposed last October.

Those initiatives were the product of a year-and-a-half-long domestic policy review (DPR) (*Science*, 27 July 1979) designed to tell the President what the federal government could best do to encourage innovation. Industry representatives involved in the exercise urged the government to reduce disincentives to innovation imposed by regulatory, patent, antitrust, and tax laws. They gave top priority to reforming the tax structure to encourage investment rather than consumption.

Carter's bid in his new program for a major acceleration of tax depreciation allowances, therefore, is welcomed by industry spokesmen who see faster depreciation as encouraging investment in new plant and technology with consequent improvement in processes, products, and productivity.

Another tax measure, a proposal to provide an investment tax credit, which under certain circumstances would be refundable, has been met with less enthusiasm. The tax credit is intended to encourage investment by firms which are not profitable enough to pay taxes. It is thought that it will be especially helpful to new, highly innovative firms. Opposition to refundable tax credits, however, is formidable, particularly from those who regard them as subsidies.

The major news for the research community is the promise of $600 million in added budget authority for fiscal years (FY) 1981 and 1982. Part of the money would be used to maintain Carter's commitment to a 3 percent growth, in real terms, in support of basic research in each of the next 2 years. Basic research funding this year should total about $4.5 billion. Money to upgrade university science and engineering facilities would also be forthcoming.

Other initiatives are promised. Presidential science adviser Frank Press says that the program particulars will be included in the FY 1982 budget in January and that in coming months the Administration will consult with scientists and engineers in universities and industry on the details.

Press indicated that the Administration will put more emphasis on programs to promote collaboration in research involving government, universities, and industry and on measures to promote "generic" research to benefit whole industries. Legislation authorizing the creation of industrial technology centers for such generic research has been passed by the Senate and reported out by the House committee with jurisdiction.

Regarding other ideas from the domestic policy review there is progress, if slow. Patent law reform is in the works and help for the beleaguered Patent Office seems to be on the way. The Justice Department, after many drafts is expected soon to issue a guide to help companies that want to cooperate on research find their way through the antitrust law maze.

Much of the success of the Carter program will depend on the Administration's ability to convince Congress to accept the necessity of long-term solutions to the nation's economic difficulties. The uncertainty of the Administration's own long-term prospects is a complication.

Politically, the new program could pay off for Carter if the voters believe that it provides a foundation for economic growth with reduced inflation. Economically, it represents a shift from short-term, Keynesian countercyclical measures to steer the economy. Ideologically, it is an attempt to change the industrial climate by sending a message to the private sector saying that the government is serious about quelling the adversarial quality that has chilled its relations with industry.—J.W.

corn. DOE has a couple of reasons for sponsoring these projects. One is that Congress has told it to do so. Feasibility studies must be undertaken so that DOE and the Department of Agriculture may sensibly spend the $1.2 billion they have been given to support energy production from biomass and urban waste. Another reason is that the technology for making alcohol is easily available and, with current subsidies, commercially viable.

DOE officials point out that less of the money spent this summer has gone to ethanol projects (25 percent) than to coal gasification or liquefaction (35 percent). Among the big joint ventures sponsored by DOE were five coal projects, one of them designed to produce liquids. The last is of particular interest, since the crisis that inspired the entire synfuels effort was a shortage of liquid fuel (gasoline).

The Texas Eastern company, with the help of a $24 million start-up loan from DOE, proposes to build a duplicate of South Africa's SASOL II coal liquefaction plant. The total cost of the project in 1979 dollars will be about $3.5 billion. It will produce the equivalent of 50,000 barrels of oil a day, half as gas and half as liquid. The most optimistic estimate is that the plant will be operational in 6 years.

Another arm of DOE, the research and development branch of the fossil energy program, is investing on its own in a variety of coal liquefaction technologies, none of which is close to being commercially viable. The most ambitious of these projects is known as Solvent Refined Coal II (SRC-II). It uses a process developed by a subdivision of Gulf Oil, one which is far more efficient than SASOL's. The system has been tested successfully in a pilot plant at Fort Lewis, Washington, for 6 years, and now the DOE hopes it will prove itself in a large demonstration plant, producing the equivalent of about 20,000 barrels of oil a day. West Germany and Japan have joined Gulf and the DOE in financing the plant, which should be fully operational after 1985. It is designed to be the first of five duplicate segments that will become a huge profitmaking plant in the 1990's. This is only one of many synfuels projects DOE has nurtured over the years.

How will the SFC choose winners from the army of competitors lured into the race? That remains to be seen. It is plain, however, that when the new board of directors arrives in Washington, it will be greeted by a large constituency in industry and the bureaucracy with definite ideas of how to proceed.

—ELIOT MARSHALL

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