Energy R&D: Slicing the Promised Pie

If the White House takes the advice it requested from Atomic Energy Commission chairman Dixy Lee Ray, federal support of nonnuclear energy R & D will rise by more than 40 percent or $94 million this year, over and above the $220 million originally requested from Congress. Among a number of underfed and long-neglected areas of energy technology due for an increase, geothermal power would receive nearly triple its current level of $4 million in federal funds; money for energy conservation studies would nearly double; magnetohydrodynamic (MHD) power generation would receive a major boost; and a small kitty would even be set aside for turning "urban wastes" into alcohol fuel.

Nuclear energy would receive a small bonus—$7 million for gas-cooled reactors to serve as backup technology for the liquid metal fast breeder reactor—but the lion's share of the added money, just over $50 million, would go into coal-related projects, mainly to accelerate the development of gasification and liquefaction technology.

This, at least, is the substance of recommendations contained in a report from the AEC chairman, and currently under review by the White House Office of Management and Budget (OMB). The report, which Ray spent most of the Labor Day weekend polishing before dispatching it to the OMB, is in turn an outgrowth of President Nixon's promise of 29 June to devote an extra $100 million to energy research in the current fiscal year. With the stricture that half the money or more be dedicated to coal, the President left it to the AEC chairman to suggest how the remainder should be divided, and to supply a report by 1 September.

The task was an unusual one for any AEC chairman, but it was only a prelude to a much larger Presidential assignment: To examine (under the general supervision of the White House energy policy office) the present state of government-supported and private energy R & D, to devise a $10 billion, 5-year "integrated energy research and development program for the nation," and to have at least the 1975 part of the master plan ready by 1 December. Needless to say, the aura of urgency created by such tight deadlines, and the smell of all this money in the wind, have combined to generate a certain jostling and scurrying for attention, if not for leadership, in the federal energy establishment. How it all came to pass provides an instructive lesson in the evolving new processes of research planning, now that the White House has dismantled its own formal advisory mechanism.

In his first energy message of the year, last April, Nixon paid abundant homage to research, but said nothing about spending more on R & D than the $772 million contained in his fiscal 1974 budget request to Congress, released at the end of January. This was a sizable increase, roughly 20 percent above the 1973 figure, but evidently was not enough to pacify influential elements of Congress and the energy industry. Carl Bagge, president of the National Coal Association, said he thought the failure to accelerate coal technology to an even faster pace "shortchanges the nation." Democratic Senator Henry Jackson, who was then pushing for a $20 billion, 10-year Apollo-esque energy program, bluntly labeled the Nixon effort as "inadequate." According to one Democratic congressional staff assistant, "from last October to January there was enormous pressure on the White House to come up with something like $840 million for energy R & D. Instead, they settled for $772 million."

What happened between April and June? The year's first and much-criticized energy message dealt mainly with economic aspects of the nation's energy problems, perhaps as a reflection of the fact that its principal author was an economist (James E. Akins, then a State Department authority on international fuels policy, now President Nixon's ambassador-designate to Saudi Arabia). The all-but-defunct White House Office of Science and Technology was invited to contribute essentially nothing to the energy statement, and, although the White House had an embryonic energy policy staff, there was little time for it to incorporate any substantial new initiatives.

"We hadn't been in business very long," a staffer in the energy policy office, now under the direction of former Colorado governor John Love, said recently. "We really weren't on top of things by then."

A less charitable diagnosis current in government circles is that higher authority in the White House suffered an acute and uncomplicated spasm of embarrassment from reaction to the first message. "In all candor, it was not well received," says one highly placed administration official. "The way I put it together, all the criticism about lip service to research really stung. They had to show they meant business, that they were really doing something."

That decided—whatever the motivations—two formidable problems remained even after the President released his second message on 29 June: Where to find an extra $100 million, and where to spend it.

Solving the first problem, it now appears, will require either some budgetary sleight-of-hand, some painful sacrifices in other programs, or a discreet raising of the self-imposed $269 billion budget ceiling—or possibly a combination of all three. In public at least, the President has been adamant about holding the lid on spending. Moreover, as he quite pointedly stated in his June message, "These vital [energy] programs must and can be funded within that ceiling."

The implication, it is now clear, was that energy's gain would be someone else's loss; whose loss he didn't say, for the simple reason that no one knew. Two months later, knowledgeable White House officials still produced conflicting and rather cryptic answers on this point. On the one hand, a staff assistant in the energy policy office expressed doubt that other research programs would be cut for the benefit of energy R & D. Speculating that some money would be shuffled from other areas of the budget and that some would simply be added on, he noted that Congress had already authorized some tens of millions of dollars for coal, nuclear, and other specific energy programs that the Administration had not requested. "Our position," he said, "will be to examine these add-ons, and where they are consistent with Administration desires, we will not oppose them."

On the other hand, when asked whether, for instance, a biomedical re-

searcher might reasonably worry about his money being siphoned off for a coal gasification plant, an OMB official would only say that "we haven't explicitly identified program areas" from which the new energy money might be drawn.

There seems to be general agreement on two points, however: The additional $100 million really is an addition to the $772 million previously requested, and will not be conjured by mirrors from within the larger amount as some in government had feared. ("There's not going to be any monkey business here," one White House staffer insisted.) And, what with the first quarter of fiscal 1974 already past, no more than about half the $100 million will actually be spent this year, with the balance spent next year.

The Administration's second problem—where to spend the money—was dropped in the lap of Dixy Lee Ray, though she was already thoroughly preoccupied with the concerns of the AEC. The desire of the White House to produce an immediate "impact" on energy programs by spending the money in fiscal 1974, and the fact that fiscal 1974 was already well under way, conspired to severely limit the amount of time and thought that could be invested in planning the disbursement of the $100 million. Nevertheless, Ray plunged ahead. By mid-July she had recruited two staff assistants, and together they organized an advisory panel of representatives from ten federal agencies with major energy programs. Formal solicitations for ideas went out from Ray's office at the end of July, leaving federal agencies only about 2 weeks to shake the dust off whatever R & D proposals happened to be handy and submit them for screening. From some 320 projects worth $400 million, Ray and the panel winnowed out $100 million in winners just in time to meet the Labor Day deadline.

The consensus of those involved in this frenzied process seems to be that Ray did succeed in injecting an element of considered thought into what had been little more than a hip-fire decision by the White House. Moreover, there was a laudable ambience of openness to it all. Other federal agencies took an active part, the AEC appears to have received no special consideration, and the appropriate committees of Congress were consulted. "I don't mean to damn with faint praise," said one Congressional aide, "but she made a gallant effort."

Inevitably, though, this rush to judgment has left a good deal of grumbling in its wake. There was time only to resuscitate 6-month- or year-old proposals that the OMB had previously spurned, and to pump up the size of existing federal programs. Universities and industry had no chance to compete directly for a slice of the $100 million. OMB was said to be unhappy that Ray's report was not more explicit about what the money would buy in the way of useful new energy technology. Some agencies were apparently overlooked in the screening process; among them was the General Services Administration, which is looking for new ways to reduce the government's consumption of energy. Other agencies were unhappy with what they regarded as an unnecessarily narrow definition of "energy R & D," as applied to the summer sweepstakes. A number of proposals to examine the environmental and health effects of energy production, for example, were declared ineligible.

In response, Ray says that the limits of time, and the demand that the money be spent this year, made it impossible to look beyond the federal establishment in this initial effort. "Our instructions were not 'go thou into the countryside and survey the world,' " she said in a recent interview. "Unless this is understood, there will be criticism."

As for what should and should not be called energy R & D, she commented that:

> You'd be surprised, when something becomes popular, how many things people want to include in energy research . . . enormous mapping programs of the entire United States, impacts on human health, long-range genetic effects, and so on. Certainly there is a relation with energy, but it is hard to call such things R & D and to fit them into the requirement that the money be spent in fiscal 1974.

More than once in the interview, during which her two gray dogs lay congenially nearby on the rug of her office at Germantown, Maryland, Ray emphasized that the September report was to be considered an entirely separate undertaking from the one due in December. It was not, she insisted, a "mini-preview" of the $10 billion master plan.

Precisely how this is to be assembled in the next 2 months still seems uncertain, however, and there are signs of wheel-spinning at the AEC. No doubt the AEC staff or one of the national laboratories could whip up a presentable shopping list, but, for the sake of credibility, Ray is anxious to produce something more thoughtful and ecumenical than that. "This cannot be an AEC document," she said at one point. "The agency is not being asked; the President asked the chairman for her advice."

A large advisory apparatus and public hearings have been rejected as too cumbersome and time consuming, although a tentative stab was made in that direction. A panel of consultants, including Alvin Weinberg, the director of Oak Ridge National Laboratory, convened for several days in early September but now appears to have slipped into limbo.

Fortunately, a great deal of homework for the December report has already been done—ironically enough—by the now-defunct OST. In a little noticed sentence in the President's energy message of June 1971 (written by the OST), the OST instructed itself to survey the world of energy R & D and suggest where federal money might be most productively invested. A year later, the result was a foot-high stack of 12 reports from 11 panels organized under the aegis of the Federal Council for Science and Technology, an interagency group which the president's science adviser headed. "Just about every technological opportunity you can imagine was covered," says one of the project's initiators.

Only one of the 12 reports (on solar energy) has been published, but others provided the justification for higher funding of energy R & D in fiscal 1974.

Along with its function as the government's ultimate font of science advice, the OST's reports were bequeathed to the National Science Foundation, which is busy updating them. The NSF is at least as interested as the AEC in asserting primacy in the planning of energy R & D, but Ray is nevertheless banking on the newly revised reports being available.

In the meantime, the processes of national research planning—at least so far as energy is concerned—remain rather in disarray during this interregnum between the fall of OST and the rise of something else. As one student of energy affairs in Washington expresses it, "the first agency to put together a convincing R & D program will have a leg up on all the others." What may emerge in the way of a grand design for research is anyone's guess, but Presidential promises aside, the betting is against any major new initiatives before fiscal 1976.—ROBERT GILLETTE