MIT Chemist, Schlesinger Ally Assumes Energy Research Post

John Deutch was just 23 when he first came to Washington. Although he was only a part-time whiz kid, he worked closely with the small group of bright civilian systems analysts in the Defense Department who made a national reputation for themselves under then-Secretary Robert McNamara in the early 1960's. Deutch went on to become a successful theoretical chemist (it is said that he could have been any sort of scientist but he chose to be a chemist) at Princeton and MIT. Now only 39, he is returning to Washington to take the most powerful scientific post in the Department of Energy (DOE). After his nomination is confirmed by the Senate, Deutch will be the first head of the department's newly created Office of Energy Research.

His nomination has been effusively praised by the scientific community. "Very enthusiastic," "enormously pleased," "extraordinarily good choice," and "uniquely qualified" are some of the reactions given by prominent scientists. "He's a doer" who will "get to the bottom of any problem, technical or political," says one industrial executive who knows Deutch well. He is widely regarded as a forceful figure who is certain be an activist in the Department of Energy, moving to straighten out the role of basic research and improve the health of energy R & D. Deutch was reportedly singled out by DOE Secretary James Schlesinger, who "wooed, urged and persuaded" him to take the job.

Because of the force of his personality, the chances are that his scope at DOE will be much wider than expected. ("Trying to profile John Deutch is like trying to catch the stream of a firehose in a teacup," said one of his colleagues at DOE.)

The Office of Energy Research was created because of successful lobbying by research scientists around the country, particularly a delegation that visited Schlesinger last July to press the point that an independent office was needed for basic research (*Science*, 12 August). But the potency of the office was left in doubt by the legislation that established the department, and the amount of administrative responsibility was left to Schlesinger to decide. "When we heard who had taken the job, we knew the clout would be substantial," says one prominent science administrator. As it turned out, Deutch will have administrative responsibility for the entire, $400 million per year, basic research program inherited from the Energy Research and Development Administration (ERDA) and will also be charged with coordinating energy R & D throughout the agency. In addition, he will have direct responsibility for five single-purpose laboratories (primarily doing basic research) and an important role in directing the multipurpose laboratories (*Science*, 2 December). At present, he is more knowledgeable about energy than the DOE Under Secretary, to whom he reports in the chain of command. Without direct budgetary responsibility for the big competing energy R & D programs, Deutch is in a position to give impartial advice such as the other assistant administrators (ostensibly at the same level) may not be able to give. Particularly because of his close relationship with Schlesinger, there are signs that Deutch is already becoming an influential member of the DOE management.

"The main reason I took the job," he said in an interview with *Science*, "was to provide a source of independent technical advice to the Secretary on all R & D matters. I consider that a challenge."

Immediately before taking the DOE position John Deutch was chairman of the chemistry department at MIT, and before that he was on the faculty at Princeton. Although he was known as a first-rate chemist who had successfully tackled a number of hoary problems in physical chemistry and statistical mechanics, his academic base was broader than that of many a chemist. He took an undergraduate degree in history and economics at Amherst, and commuted regularly to the Pentagon during summers and vacations between 1961 and 1965 to work on strategic arms problems related to the North Atlantic Treaty Organization while he was in graduate school at MIT. "Like other bright young people, he had a nose for where things were happening," says Alain Enthoven, who was head of the Defense Department systems analysis group during that time. "He was able to identify problems and think broadly," says Enthoven, "and per unit of time he was one of the very productive people in the group."

While he was in academia, the new energy research director kept up his contacts with the defense establishment. He has known James Schlesinger for many years, and when Schlesinger was Secretary of Defense in 1975, he appointed Deutch to the prestigious Defense Science Board. Harold Brown, the present Secretary of Defense, has been an acquaintance since the early 1960's. Frank Press, the White House science adviser, who was previously a department chairman at MIT, is "a very close friend." Although Deutch is young, he has a broad range of contacts in government and in industry. (On becoming MIT chemistry chairman in 1976, one of his first moves was to set up improved vehi-

Photo by Eric Poggenpohl

John M. Deutch

cles for communication with industrial chemists.) Asked about Deutch's ability to work with the bureaucracy, the chairman of the Defense Science Board, Eugene Fubini, said it was no problem, "he's wired in like crazy."

The style of the new energy research director is to be aggressive, hard-headed, and energetic, to come on strong and to move quickly. Rather than wait for problems to come to him, he likes to take hold of a situation, get good people to advise him, and act. ("Whatever you write," he told *Science*, "don't say that nothing will change.") He will ask questions, assess matters, and be very critical of fuzzy thinking. "If he thinks something is nonsense, he will lay it on the table and say that he thinks so," says TRW vice-president Dick DeLauer, who has served with him on the Defense Science Board. He will ask hard questions and will try to answer them, says Kent Wilson, the National Science Foundation administrator who worked closely with him when Deutch was chairman of the NSF chemistry advisory panel. At both the Defense Department and NSF, there was reluctance to see him depart.

When he became chairman of the MIT department, his ascendancy was met with a mixture of "relief and fear." He proved to be a strong administrator with definite views who had a long-range vision of where things were going, according to an MIT colleague. He can be blunt in sizing up a person or an issue, a characteristic which many acquaintances find to be offset by a certain impish, country-boy sense of humour. The only negative trait mentioned by persons contacted by *Science* was the observation that he can be abrasive.

Although most acquaintances characterize Deutch as a broad-guage individual, two possible deficiencies in his background were noted. One was that he had not had much experience managing a large group of people—the MIT chemistry department is moderate-sized with 40 people and a $6 to $7 million budget. The other apprehension comes predominantly from the high energy physicists, who will be be under Deutch's wing at DOE and who worry about a chemist's understanding of the problems of big science. MIT physicist Herman Feshbach says that, even though he does not think Deutch has a "gut feeling" for research projects of the size of a typical high energy experiment, he has gained some familiarity with the problems of the field while serving on the university's research structure panel. The physicists' apprehension could also be attributed to their unusually weak representation in policy circles in this Administration. With characteristic candor, Deutch says that "it's true that I'm not a high energy physicist, and that is not all bad."

The Massachusetts scientist has specific ideas about what he intends to do in the new energy department. (He commutes to the capitol each work week from Lexington, where his family lives and where he was a town selectman. Friends in other cities contributed small amounts to aid his election, and copies of his campaign poster are treasured as rare pieces of Deutch memorabilia.)

Healthier Energy Research

The now-defunct Energy Research and Development Administration (ERDA) was generally criticized for putting too much emphasis on big demonstration projects and Deutch argues that the inherited programs do not include as much fundamental work as would be healthy in some areas—such as the solar energy effort. He also thinks there is need for more basic research in the environmental and conservation programs, noting questions about the safety of liquefied natural gas transport and the atmospheric buildup of carbon dioxide. "My ambition is to see all of the mission-oriented programs do good basic work rather than have it all done in the basic research program," he says. Deutch will have a formal budgetary role in reviewing the goal-oriented programs, and will also head an R & D coordination council that will assess the health of specific programs on request from either "the top policy makers or my colleagues." Some of the areas he may survey initially are fusion, solar research, battery development, and geopressurized natural gas resources.

At the end of the institutional life of ERDA, it was thought in several quarters that the universities had been disenfranchised by the energy agency and that industrial capabilities were being underutilized. Deutch says that the academic scientists have had inadequate opportunities to compete, and that his appointment means there is a commitment for both the universities and industries to undertake research. To further their participation, new methods of contractual relations with universities are needed, the new energy research director says, and the industrial research policy needs to pay particular attention to the proprietary and patent problems that are unique to the energy agency. Newly institutionalized, active liason with industry is needed, he thinks.

Deutch himself thinks that he is most often criticized, not for inexperience with big science, but for a penchant for high technology, perceived because of his Defense Department and MIT connections. To counter this impression, he intends to emphasize noncentralized technologies. "Across the board, the department does not spend more than $5 to $10 million on small-scale technology now," he says. An enormous amount of work on small-scale energy systems is justified ("France spends much more of its solar research money on decentralized systems than we do"), Deutch thinks. He suggests that there is a need for a central office to coordinate small-scale energy research throughout the agency. The MIT chemist, who prides himself on his good relations with his industrial counterparts, also thinks that the energy agency has given surprisingly little attention to engineering research, such as process development.

The suggestion that someone is a chemist brings to mind a certain character type—the person who toils long hours at a laboratory to bring the public "Better Things for Better Living," or an ascetic professor more comfortable with molecules than social problems. It is not an image that fits Deutch. "To think of John as a chemist is something you just don't do," says his mentor from the Defense Department advisory board. Instead, Deutch's work in chemistry may have been an intentional interlude in a career plan that has never veered too far from matters of public policy. His interest in theoretical chemistry may have led him to that science as a place where he could make a mark and gain the credibility necessary to work in public policy. Enthoven, from the McNamara systems analysis group, thinks there are marked similarities between the requirements for Deutch's early defense work and his present job. Furthermore, it is almost essential to establish credibility in some disciplined field. "In public policy, everybody thinks he is an expert," says Enthoven, who is now a professor at the Stanford Business School.

Having returned to Washington, Deutch appears to be in his element. Old hands are already noting him as a figure to watch. Some associates are still slightly bewildered that he has gained such broad experience so young. But it is apparently not through happenstance that he has so many friends and colleagues in the defense establishment, the chemical industry, the universities, and elsewhere. The man who played a minor role in the civilian redirection of the Defense Department may have arrived at just the right time to play a major role in developing energy strategy.

—WILLIAM D. METZ