drawing board is also expected to play a significant role in the debates on levels of support for the SERC's own domestic facilities, such as the Synchrotron Radiation Source opened last year at its Darsbury Laboratories, and the new Spallation Neutron Source, due to start operation toward the end of this year at the Rutherford Laboratories.

So far, the Conservative government has given little indication that it is prepared to meet the scientific community's request for extra funding. Sir Keith Joseph, the secretary of state for education and science, has preferred instead to draw attention to the government's commitment to hold funding level, and appears to be waiting for the community to decide on its own priorities within the constraints that this has imposed.

In contrast, the opposition Labour Party has been quick to pick up the scientists' complaints. In a recent letter to the London *Times*, Jeremy Bray, the Labour Party's chief spokesman on science and technology, warns that the SERC's analysis of its plight painted "an overall picture of intellectual atrophy going far beyond damage done to the reputation of the government to sapping the vitality of science, engineering and their applications in Britain far into the future."—**DAVID DICKSON**

New Jersey Votes a High Tech Bond Issue

New Jersey voters on election day approved a $90 million "Jobs, Science and Technology Bond Issue" that will put substantial sums of money into universities within the state. The vote put New Jersey one up on many of the states that have put public funds behind programs designed to promote high technology development.

The bond issue referendum, which received 60 percent of the vote, was backed by Governor Thomas H. Kean, got a strong bipartisan endorsement from the state legislature, and had broad-spectrum support from business, labor, educators, and citizen groups.

New Jersey followed a pattern established in other states by creating a Governor's commission on science and technology to analyze the state's economic development needs and make recommendations for action. The provisions in the bond issue were based directly on the report of the commission delivered at the end of 1983.

The largest portion of the funds, $57 million, is earmarked for the development of advanced technology centers at New Jersey's research universities. Centers are planned in biotechnology, hazardous and toxic substance management, food technology, and industrial ceramics. And $15 million will be set aside to fund centers in new high tech areas when they emerge. Most of the advanced technology centers are expected to follow the model of academe-industry cooperation set in the cooperative research centers supported by the National Science Foundation (NSF). In these centers, industries pay an annual sum to participate; research projects are designed to reflect the interests of academic and industry participants.

New Jersey has a heavy concentration of research-oriented industry, including pharmaceutical and chemical companies. The centers are designed to enhance opportunities for growth in such industries, and, in the case of the hazardous waste center, to deal with problems of public health and the environment they may pose.

Absent from the plan is the sort of major effort to encourage the development of electronics R&D and manufacturing that has figured in the initiatives of many states bent on high tech development. According to Edward Cohen, executive director of the governor's commission, the panel made a basic decision against recommending an industrial policy based on the government deciding which industries had the greatest growth potential. He said the commission looked carefully at existing industry in the state and asked, "What makes sense for New Jersey?" The aim is to make possible greater interaction between industry and academic research and then to let the marketplace operate.

In addition to establishing the high technology centers, a major purpose of the New Jersey program is to bolster the educational infrastructure supporting the growth of high technology industry. Thus, the balance of the bond issue money, some $33 million, will go toward building new labs and classrooms and buying technical equipment to develop science and engineering programs at the state's public and private universities and 2-year colleges.

While New Jersey ranks among the leading states in high technology industry, it does not have high-powered research universities comparable to those in neighboring states, such as Massachusetts, New York, and Pennsylvania. New Jersey began late in expanding its public higher education system and Princeton, its best-known private university, is regarded as strong in basic sciences but does not have medical or engineering schools.

New Jersey, which does not have a state income tax, has experienced periodic difficulties in finding state funds for its education system, particularly during times of economic stress. For example, a major bond issue for higher education was turned down at the end of the 1970's. Observers attribute the success of the high tech bond issue in part to the emphasis its sponsors put on job creation and also say that the economic recovery made voters more receptive to funding issues generally.

Cohen notes that the New Jersey bond issue is part of a larger agenda. For example, Princeton, Rutgers, and the Institute for Advanced Study are engaged with a group of heavyweight institutions from other states in a consortium bidding to win a major NSF-sponsored supercomputer project for location in New Jersey. Legislation has been introduced for establishment of an advanced technology center in agriculture with $15 million in funding separate from the bond issue. Of broader import, the governor and leading legislators are committed to improving the climate in the state for high technology industry. On the list are statutory and regulatory changes and actions to encourage increased availability of venture capital and offer assistance to the start-up of fledgling firms. Success of the bond issue has increased the sentiment for making the science and technology commission a permanent body. New Jersey officials concede that the state still has a long way to go to achieve its high tech aspirations, but at least, as Cohen puts it, "with the bond issue, we're on our way."

—**JOHN WALSH**