

# Centers Fear Self-Sufficiency Is Prelude to Government Cuts

MELBOURNE—Success breeds success. At least, that's the way it's supposed to work. But try telling that to the managers of Australia's Cooperative Research Centres (CRCs), set up in 1991 to unite government, industry, and academic researchers in an effort to boost the nation's high-tech economy. The most successful centers have attracted industrial support and laid the groundwork for new products, but they fear that this is only encouraging the government to cut their funding in the hope that industry will pick up a larger share of the bill. "It's a Catch-22 situation," says Nick Nicola, former director of the CRC for Cellular Growth Factors in Melbourne. "If your CRC looked like it could be self-sustaining, they'd say there was no need for government funds. If it didn't look like it could be self-sustaining, they'd say you didn't deserve [the money]."

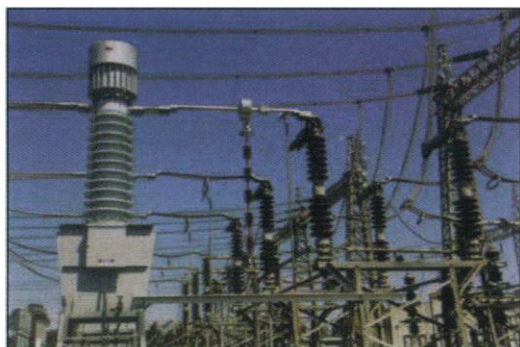
CRC directors are running scared in part because the government recently announced that it would trim the program's overall operating budget by \$10 million over 2 years and begin a yearlong review aimed at making centers more self-sufficient and more attuned to commercial applications. The program has also just gone through a bruising competition involving 13 of the original 15 centers and 23 new applicants; only six of the existing centers won full funding for another 7 years, and some that had won high marks from outside reviewers either lost out or had their government funds trimmed sharply.

The competition, moreover, is likely to get even more intense. Center directors say they worry that pressure to trim a persistent federal deficit will put a big squeeze on the \$146-million-a-year program, which has grown to 65 sites. "There is a belief around Canberra that the government would like to reduce the program by half," says one former science manager who requested anonymity. In addition, the Department of Industry, Science, and Tourism has recently dropped two other programs offering R&D incentives to industry, leaving the CRC program as the sole holdover in a portfolio begun by the previous Labour government. While government sources deny the rumor, they say that increased accountability and value for money is essential. They calculate that industry contributes only 15% of the CRC's overall budget, once government subsidies are subtracted, and they will be looking for ways to increase that share.

The centers were set up to correct a situa-

tion, common in many countries, that featured strong fundamental research institutions with few ties to industry and a private sector averse to innovation. The program represents nearly 4% of the government's overall R&D investment, and supporters say a continued flow of public funds is needed to grease the wheels of cooperation with industry and to support projects not yet ready for the market. "A lot of people think CRCs are incubator companies," says Geoff Vaughan, ex-vice chancellor of Melbourne's Monash University and chair of the CRC's policy-setting body. But that was never their intention, he says. "They are the intellectual bases for the nation's R&D."

The program has surpassed expectations in bringing together industrial, academic, and government researchers. It has helped to raise industry's contribution to the country's overall R&D effort from 25% to 46% in the past decade. It has prompted changes in graduate training, adding courses on intellectual property to the usual fare of research techniques.



GARY WOODS

**Charged up.** This university-based photonics center gets support from Australian government and industry.

"Our students don't share the view of some of their supervisors that pure research is sullied by an industrial partner," says Nicola.

The CRC program's scientific results have also made a big splash. In the past few weeks alone, CRC-based research has grabbed global attention for several new findings, including a mathematical description of solitons, or standing waves, that may mean a brighter future for telecommunications (*Science*, 6 June, p. 1538) and a new biosensor that can take assays of individual molecules (*Nature*, 5 June, p. 580).

One CRC director unsettled by the shifting currents is Mark Sceats of the Australian Photonics Institute, whose scientists were responsible for the recent publication on the mathematical description of solitons. The

Photonics CRC lays claim to two showpiece examples of technology transfer: A signal-dispersion compensator for the telecommunications market is being commercialized by Siemens, and Asea Brown Boveri is planning to commercialize a fiber-optic current sensor. But any commercial application of solitons is a decade or more into the future, Sceats says, a time frame that deters companies with their eyes glued to quarterly financial reports. Such research also requires an investment in human capital, he notes, adding that "industries are not going to support Ph.D. students."

Two CRCs whose funding was recently cut are trying to keep industry interested by putting a stronger commercial focus on their work, but the outlook is not bright. "With government funding, we could approach companies like AgrEvo to carry out high-risk research looking at genetic manipulation of important crops," says Chris Buller, manager of the CRC for Plant Science in Canberra. But those talks are now in limbo, he says, and the center's future is uncertain. Says Robert Bitmead, director of the CRC for Robust and Adaptive Systems in Canberra, "It's hard to imagine collaborative research without government funding."

Eric Huttner, chief operations officer for Groupe Limagrain Pacific Pty. Ltd., says that the government's failure to renew the Plant Science CRC is a big disappointment. "We had gotten to know the scientists and established a track record," he says. Being able to share the risk with government, Huttner adds, "is what attracts industry to invest in precompetitive research."

But while Sceats thinks that most centers would need at least 10 years of government funding to keep the lifeblood of innovation flowing, two centers that have received wind-down funding say they're optimistic about their chances of survival. "We've always proclaimed our potential for self-sufficiency," says John Ballard, the director of the CRC for Tissue Repair and Growth Factors in Adelaide, which hopes to profit from milk-derived growth factors through a spin-off company, GroPep/L. David Naim, the director of the GK Williams CRC for Extractive Metallurgy in Melbourne, views the situation as a challenge: "If we've delivered to industry, they'll continue our funding."

Government officials will examine these issues in an upcoming review of the CRC program by the finance and industry/science departments. Advocates hope the review will clarify the government's role. "I suspect the push to self-sufficiency is coming from groups that don't understand the background, structure, and potential of CRCs," says Vaughan. "The review will give [program officials] a chance to explain that."

—Elizabeth Finkel

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