Plan to limit Cambridge high-tech growth

[LONDON] Local authorities in the east of England are preparing to defend controversial plans to restrict the numbers of new high-technology companies setting up near the city of Cambridge.

The plans are being opposed by business organizations which want new information technology and biotechnology companies to be located on the outskirts of Cambridge near existing clusters of such businesses, as well as the university and the science parks.

The newly formed East of England Business Group is to challenge the proposed planning restrictions at a public examination starting on 2 February. Last month, a report commissioned by the group of 10 business organizations, which includes the Confederation of British Industry and the Institute of Directors, said restrictions would damage prosperity and economic growth.

Written by the Cambridge-based management consultancy Segal Quince Wicksteed, the report says that planning restrictions will conflict with a recent government white paper, which promised to find ways of supporting clusters of high-technology industries (see *Nature* **396,** 714–715; 1998).

But the Standing Conference of East Anglian Local Authorities (SCEALA), which covers the three counties of Cambridgeshire, Norfolk and Suffolk, says it wants to restrict the pace of development in Cambridge's existing technology clusters, and to regenerate other, more deprived urban areas.

Authorities belonging to SCEALA are concerned that the region has too few skilled workers to meet continued growth in Cambridge's high-technology sector. Staff would have to be recruited from outside the region, leading to greater pressures on roads and housing, which the counties wish to avoid.

The Cambridge region is home to more than 1,200 high-technology businesses, compared to 350 in the mid-1980s. It is one of Britain's most prosperous regions. Between 1991 and 1996 it accounted for all regional growth in employment. Some parts of Norfolk and Suffolk, by contrast, have employment rates and incomes per head below the UK average.

The previous Conservative government

Quebec's tax incentives act as a magnet to research companies

[MONTREAL] Tax incentives and other measures introduced in Canada's budget last March appear to be turning Quebec into the country's most attractive province for high-technology companies that carry out research and development (R&D).

Most other provinces also have generous R&D tax subsidies for manufacturers, making the average rate for Canada the highest in the industrialized world. Defining tax subsidy rates as the net cost of investment after taxes and subsidies puts Canada's rate at more than twice those of Australia and the United States, the next highest.

But for foreign-controlled non-manufacturing firms in particular, Quebec's corporate tax rate of 9.15 per cent is well below the average for the other nine provinces of 16.1 per cent. When added to the savings afforded by Canada's weak dollar, this makes Quebec the cheapest place in North America to conduct research.

During the past seven months, new institutes have opened in Montreal, Quebec City, Hull and Laval, where new (and not-so-new) companies can locate and gain benefits including a five-year holiday from income, capital and payroll taxes.

In their first three years there, companies can obtain tax credits of up to 40 cents for each Canadian dollar spent on wages for eligible employees, and on the purchase or lease of equipment. The institutes have advanced telecommunications equipment and infrastructure.

Vorton Technologies, for example, a software company based in Ontario, found that by moving about 25 kilometres across the Ottawa River to Hull, in Quebec, it could save more than Can$100,000 (US$65,000) a year through tax benefits.

The saving is enough to pay the rent in one of the new institutes. The company will also be able to hire more professional staff, so it can do more R&D, according to Vorton's chief technology officer, Tony Davidson. Many more companies are considering making similar moves.

CORBIS/YANN ARTHUS-BERTRAND

Irresistible offer: tax breaks are luring companies to Montreal (above) and other Quebec cities.

Over the past three years, seven other provinces have offered tax credits, and British Columbia plans to do so. Ontario's R&D tax incentives total Can$100 million.

But the tax subsidies have their critics. In a report last September, the Organization for Economic Cooperation and Development (OECD) said such subsidies should be "rationalized". It said tax breaks should be incremental, rising with the level of R&D performed rather than offering a set value per dollar of R&D investment.

The report says that: "A comparison (between) Australia, Canada and the United States concludes that volume-based tax incentives do not generate much R&D beyond the tax expenditure incurred by the government".

One study it cited of 55 Canadian firms found that the value of R&D performed "did not amount to more than 40 per cent of lost tax revenues". Incremental tax credits, on the other hand, have generated as much as $2 in R&D for every dollar in tax credits.

Canadian officials contest this, however, claiming that their R&D tax incentives have sometimes generated more than three times the value calculated by the OECD. Pierre Etienne Gregoire of Quebec's Ministry of Economy, Industry, Science and Technology, says Canada has tried incremental tax credits, but results were not good.

Jack Mintz, professor of business at the University of Toronto and author of a major study of corporate taxation, says the Canadian tax subsidies are not working. Canada's ratio of private R&D expenditure to gross domestic product (about 1 per cent) is much lower than that in Sweden (2.3 per cent), for example, as well as those of other countries with smaller populations.

"The question is whether the tax system is the best way to deliver all the R&D assistance that we expect," says Mintz. He also thinks that Quebec's use of the new low-tax institutes will not be the answer.

The institutes may result in more R&D being performed there, he argues, but they will not necessarily provide a proportional commercial spin-off or job creation.

The political uncertainty of locating in Quebec, whose Parti Quebecois government is committed to separating from Canada, does not seem to deter companies from moving there.

David Spurgeon

CORBIS/PATRICK WARD

Prime location: the Napp Building, one of the research facilities at Cambridge Science Park.

tried to ease the pressure on Cambridge, and to reduce the regional economic disparity, by encouraging high-technology businesses to move to poorer rural areas. These would be linked by new roads to major inter-city roads, enabling staff to commute.

The new Labour government has taken a different approach. It cut the roads programme last year. And the SCEALA authorities, which have changed from being predominantly under Conservative control, to Labour, have decided to concentrate on urban — rather than rural — regeneration. In addition, a government committee chaired by architect Lord Richard Rogers said last week that new housing should be built on disused 'brownfield' manufacturing sites in urban areas and not on 'greenfield' rural sites.

Under SCEALA's proposed planning restrictions, new businesses would be encouraged to locate in or near towns and cities other than Cambridge. The strategy also aims to encourage greater use of public transport for travel to work.

But Bill Wicksteed of Segal Quince Wicksteed says that preventing the growth of clusters of high-technology businesses will ultimately disadvantage local communities as well as the high-technology industry itself.

"Growth should not be grudgingly accepted, but embraced and shaped," says Wicksteed. "If [local authorities] work from an assumption that growth must be resisted, they will fail. They will get growth, but they will be unable to control it."

The Wicksteed report believes that it is inappropriate for SCEALA to try to integrate its technology management policies with the aim of urban regeneration. And it doubts whether technology companies will want to move to areas where they may not be able to find enough qualified staff.

The controversy will intensify the government's difficulties over a planning application from the Wellcome Trust for a genomics research complex on the outskirts of Cambridge, which the local authority opposes. Prospects for the complex will not have been helped by the recent resignation of industry secretary Peter Mandelson, the architect of the government's decision to promote knowledge-based industry. **Ehsan Masood**

Tough times set to continue for US biotech start-ups

[SAN FRANCISCO] US biotechnology companies are bracing themselves for continued financial problems in 1999 as the public markets look to industries that can provide quicker, more reliable returns on their money, according to industry analysts.

Those attending the annual Hambrecht & Quist (H&Q) healthcare investment conference in San Francisco last week were also told that, although investing in high-risk venture companies is likely to reach an all-time high in 1999, biotechnology is unlikely to enjoy the benefits.

Industry observers did not believe that the fall in funding would trigger a slowdown in science. "There's such innovation in biomedical research that, for every failure, there are probably ten professors writing a business plan," says Alex Zisson, pharmaceutical analyst for the investment company.

But even top university administrators acknowledge that outside interest in licensing products or funding start-up companies from bioscience research has slipped. Katherine Ku, director of the office of technology licensing at Stanford University, says that entrepreneurial activity in the physical sciences has outstripped biotechnology for several years.

About 20 biotechnology companies, including some long-established ones, slashed operations or closed their doors entirely last year due to the cash crisis. Casualties included Alpha One, Biocircuits, Cellex, Cellpro, ChemTrack and ImmuLogic, and more failures are predicted this year.

"Too much capital is needed to bail everybody out," says Dennis Purcell, managing director and head of life sciences banking for H&Q. He predicts that smaller companies will find it hard to raise the money they need.

According to Purcell, about 95 biotechnology companies have less than one year of cash available to fund operations. The industry raised only $951 million in public shares last year — a 60 per cent drop from the $2.28 billion collected in 1997. Initial money raised in shares was $417 million in 12 companies launched on the stock market, 44 per cent down from the $750 million collected the year before in 22 flotations.

Kurt Von Emster, portfolio manager for the Franklin Biotechnology Fund, attributes much of the crisis to the high level of enthusiasm in 1991 and 1992, which fuelled a boom of marginal companies and products. But poor market performance for six years running and the largest ever number of projects in which drugs failed to fulfil their promise have created a desperate need for capital, he adds.

Von Emster estimates that about a quarter of public biotech companies need to raise money, while another 100 are still waiting to go public after six years of private operations. "About $5 to $8 billion need to be raised over the next 16 to 18 months," he said. "That's just not going to happen."

Even though the Nasdaq biotechnology shares index climbed 40 per cent over the year, representing a sharp recovery from falls of 2 per cent in 1997 and 1 per cent in 1996, most of the gain came from the top ten companies. Almost two-thirds of publicly quoted companies in the sector lost value, and 50 are trading below their cash value, says Purcell.

But he is optimistic that investors will return, lured by the gap between low stock valuations and the value represented by product potential and real revenues.

Venture capitalists at the H&Q conference said that, while funding is more difficult to come by these days, good ideas will not go begging. They seemed most charmed by promises of steady revenue from young companies that could sell subscriptions or service contracts for platform technologies such as genomics or drug-target validation.

Zisson points out that, although enthusiasm for technology transfer in the academic world remains high, in today's climate a great technological product is not enough: scientists must come up with a smart business plan as well.

Lita Nelson, director of technology licensing at the Massachusetts Institute of Technology, says that, as leading venture companies have become consolidated, this has left a gap at the level of creating companies. The pioneer funds have become so successful that they cannot afford to make smaller investments or put the time into helping small companies get started.

While a few new venture companies have moved in, start-ups have lost the benefit of the older, established venture capitalists' experience, say Nelson and others. These young companies will probably have a hard time surviving entrepreneurial speed bumps, such as raising more capital when needed. "These companies won't be as successful when they run into trouble," says Nelson.

Jeff Casdin, chief executive of Casdin Capital Partners, is optimistic that there will eventually be a broad recovery in the value of biotechnology shares. He predicts that the scientific potential will become irresistible to investors.

"If the stuff is good, interesting, kicking, I don't think it's hard to get attention,' says Jan zur Hausen, an associate with MPM Asset Management of Cambridge, Massachusetts. **Sally Lehrman**