PUBLIC SECTOR RESEARCH ESTABLISHMENTS

- *What they are and do.*
- *Management reforms since 1979.*
- *Current scrutiny exercise.*

Since December 1993, 53 Public Sector Research Establishments (PSREs) have been reviewed by a 'Scrutiny Team' whose report was published on July 11; 4-months consultation follows. These PSREs comprise a substantial part of the UK's civil science and technology base (31,000 staff; budget of £1.3B), and there is parliamentary concern over the review's scale and speed, and implications for wealth creation and the quality of life. The Science and Technology Committees of both Houses are pursuing enquiries in this area.

This scrutiny is the latest of many initiatives on the ownership and management of PSREs. This note summarises its outcome against the backdrop of earlier initiatives reviewed by POST in 1993[1].

BACKGROUND

The latest scrutiny arose from the "Stewart/Levene" review in 1993 which advocated a more open market for government-funded R&D, continued privatisation and (controversially) the amalgamation of research establishments into a Civil Research Agency. The White Paper (Realising Our Potential) thus set up a special scrutiny by the Prime Minister's Efficiency Unit to review the scope for early privatisation of PSREs and the best organisational and management structures for those likely to remain in the public sector. 53 PSREs were selected in two broad groups:

- Government Research Establishments (GREs) such as MAFF's Fisheries Laboratories, DoE's Building Research Establishment (BRE), DTI's National Physical Laboratory etc. Also the REs of non-departmental public bodies such as the PHLS, HSE or NRPB.
- Research-based Institutes (RIs) of the Research Councils (RCs) and the Scottish Office (SO) - ranging from the MRC's Virology Unit to the SO's Hannah laboratory on milk and lactation.

Locations of the two groups are shown in the **Figure.**

Although comprising a substantial proportion of such bodies, the coverage is not comprehensive on scientific grounds (e.g. only 5 of the 46 MRC institutes or units are included). The PSREs also cover a wide range of sizes (48 to 8,000 staff), embrace very different forms of ownership (from parts of departments, through agencies, charities, to companies limited by guarantee). Moreover, even a complete coverage of PSREs would have subjected to scrutiny only 29.8% of the publicly-funded civil R&D spend; the rest being in Higher

1. These were covered in detail in 'Science and Technology Agencies' (March 1993 - 52 pp), available from POST (extension 2840).

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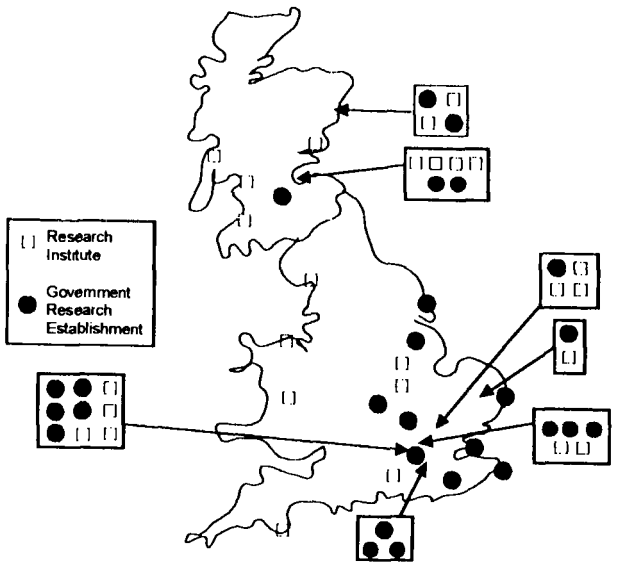
POSTnotes are intended to give Members an overview of issues arising from science and technology. Members can obtain further details from the PARLIAMENTARY OFFICE OF SCIENCE AND TECHNOLOGY (extension 2840).

Figure LOCATION OF THE PSREs IN THE SCRUTINY REVIEW



Education Institutions (HEIs), Research and Technology Organisations and industry. As a result, concerns were expressed whether the scrutiny could take fully into account the complex scientific objectives, linkages between disciplines and organisations, and other scientific considerations in the time available.

The GREs were reviewed in detail in the 1993 POST report[1] which pointed out that they had been set up to provide a range of technical services to Government. In contrast, RIs have been set up as a means of pursuing most effectively the basic research funded via the Science Vote, and carry out long-term research and training under the charters and missions of the Research Council or other body (e.g. Scottish Agricultural Science Agency) concerned. Both GREs and RIs comprise key elements of the national science and engineering base, with the consequence that the ways in which they are managed, redeployed, allowed to run down, or dispersed is important for the UK as a whole, including industry.

Most GREs are now run as agencies, established under the Next Steps Initiative (see POST report for details of how agencies are established and run). Under the agency procedure, each GRE is reviewed periodically for privatisation under the 'prior options' procedures. In addition, special reviews have been completed by the Departments of Trade and Industry and Transport

Box 1 OUTCOME OF DEPARTMENTAL REVIEWS OF GREs

Department of Trade and Industry (DTI)

The earlier POST report described the work and status of the five DTI REs in existence as of March 1993, i.e.

Laboratory of the Government Chemist (LGC)
National Physical Laboratory (NPC)
National Engineering Laboratory (NEL)
Warren Spring Laboratory (WSL)
National Weights and Measures Laboratory (NWML).

A decision to close WSL was announced in May 1993, and continuing programmes (environmental work particularly) transferred to AEA Technology and its National Environmental Technology Centre. Around 90 of the ~300 staff (1992/3) transferred.

A review of the other DTI REs was started on 4 May 1993. DTI's intentions were announced on 14 April 1994, and are that:

- NEL will be prepared for privatisation by trade sale in 1995;
- LGC should be established as a non-profit private company by 1996, although the possibility of a trade sale remains;
- NPL is to be run by a contract management;
- NWML will remain a DTI agency.

Department of Transport (DoT)

The Transport Research Laboratory (TRL) became an agency of the DoT on 1 April, 1992. In May 1993 the Secretary of State announced a conclusion in principle that the laboratory should be privatised, and commissioned consultants to advise on the options. The Commons Transport Select Committee was not persuaded that TRL's independence and expertise would survive under privatisation, but that concerns would be less for a sale as a non-profit company than a competitive trade sale. The Secretary of State has since announced his preliminary intention to proceed with a trade sale.

on the future of their agencies (see **Box 1**). The Research Councils have been reviewing the arrangements for managing their institutes and have themselves been reorganised under the 1993 White Paper; specific reviews have also been initiated for some institutes (e.g. Daresbury and Rutherford Appleton Laboratories). The Scrutiny Team's work is thus against a background of sustained and substantial change already under way.

The Team assessed all PSREs against privatisation criteria concerning the nature of the work undertaken, the degree of control which would be required over the output of the resulting private sector organisation, and the extent to which the PSRE was in shape to thrive in the private sector. The Team concluded that for most PSREs (other than those already marked for privatisation), the work was not seen as suitable for privatisation, the PSRE was not in shape for privatisation or both. MAFF's ADAS was seen as closest to meeting the criteria and the Team recommends it be privatised. DoE is also urged to review the case for moving elements of BRE into the private sector.

The Team found few examples of duplication but did comment on areas of "overlap" which suggested to the Team scope for rationalisation. A number of organisational models to encourage further rationalisation were reviewed - including ownership by a single 'Central Research Agency' (CRA), intermediate groupings into 'mini-CRAs' with common interests or features, or reorganisation on a geographical basis. The team did not favour the CRA option because of concerns over extra bureaucracy and distance from customers, preferring options to reorganise on the basis of either four market sector groups (**Box 2**) or to create geographically-based groupings in Scotland and in England and Wales. Alternatively, a process could be set in train by appointing two "Directors of Rationalisation" to review in more detail areas of potential overlap and make specific recommendations.

Box 2 OPTIONS FOR MARKET SECTOR RATIONALISATION

1. **Marine resources and environment.** PSREs currently owned by MAFF, Scottish Office (SO) and NERC merged under Scottish Office.
2. **Environment (non-marine).** PSREs currently owned by NERC, SO and Forestry Commission merged under NERC.
3. **Agriculture and Food.** PSREs currently owned by SO and Research Councils merged into BBSRC.
4. **Biotechnology and biological sciences.** PSREs currently owned by Research Councils and SO merged under MAFF.

ISSUES

The Scrutiny Team's Report

The Scrutiny Team was faced in a short time with addressing the complexities of many different types of organisations, missions, owners, customers, subjects, and types of research. Particularly significant is the scientific diversity in organisations with different missions. Thus RIs are often set up to allow a critical mass of scientists from different disciplines to be brought together to pursue longer term basic research strategies. Such units may be attached to a university and regularly subjected to peer review and have a limited life; as such they are just one of the options available to RCs to deploy the funds voted by Parliament to best effect, and compete for grants with individual grant proposals, Interdisciplinary Research Centres etc. In contrast, GREs are much more the archetypal 'bricks and mortar' establishments charged with applied research and technical support for departmental and other customers; most are already managed on an arms-length basis through agency status and their work negotiated under individual contracts subject to increasing competition.

The Royal Society and others cautioned that simple market solutions cannot deliver the long-term objective of building up and maintaining the requisite human resources for sustaining the national knowledge base, and there is a view that the final report has paid insufficient attention to the fundamentally distinct scientific nature of the work[2] carried out in the different

2. The Team's terms of reference made no mention of maintaining or enhancing scientific quality, although it can be argued that this was implicitly intended.

organisations. Moreover, the Royal Society and others see the current diversity as a strength, and point out that duplication and overlap may well be desirable, since competition between peer groups is a key driving force in scientific progress as well as economically beneficial. They see a danger that forced 'rationalisations' will reduce the freedom of research organisations and sponsors to select the most appropriate model for their purposes and remove the competitive pressures which sustain and improve quality. There is also concern that the report has not recognised the fact that the world class scientific research encouraged by the Research Councils is 'bottom up' and depends on excellent scientists choosing to apply their creativity to particular fields, and is much less amenable to 'top-down' central planning than technical service support and some applied research.

As already mentioned, the scrutiny has taken place against the backdrop of major change in the management of PSREs. Many of these are described in the POST report of 1993 but in addition, Research Councils have implemented major rationalisation programmes (e.g. 11 AFRC institutes have been closed since 1984 and institute staff reduced from 6300 to 3700 with restructuring costs of £127M). NERC is transferring its Institute of Oceanographic Sciences to Southampton University, together with its research vessel services. Further mergers during the scrutiny exercise reduced the 53 PSREs to 50.

There is thus a widespread view that the current system is swiftly adapting to change and that, if market inefficiencies were to be overcome, market and peer pressures would maintain the pace of rationalisation without compromising the quality of the science. The Scrutiny Team did agree that an 'Open Market' for science and technology was an important tool for rationalisation, but pointed out that R&D spend by Civil Departments fell by 29% from 1986/7 to 1992/3 and is expected to fall by a further 25% by 1996/7, leading to "over-capacity" the Team saw as warranting additional measures. Notwithstanding this view, the Team did include some 'fine-tuning' recommendations to address market imperfections, including improved customer-side coordination, rationalisation reviews when capital sums of £2M or more are involved, encouraging consortia, and other incentives for managers to consider rationalisation. The research market is also continuing to become more open (e.g. Research Councils are considering opening up their funds to bodies outside their traditional boundaries), further strengthening competitive pressures for rationalisation in the absence of additional measures from the centre.

Managing the GREs

The pros and cons of current GRE management policies were discussed in the 1993 POST report and many of the issues are still relevant today - particularly since the extent to which solutions to current problems can be found will affect perceptions of the need for the measures recommended in the Scrutiny Team's report.

As far as the GRE is concerned, its ability to manage its resources to best effect is closely linked with its parent **departments' science and technology policy.** Departments need scientific and technological support for a number of reasons - because of statutory responsibilities, to inform and implement policy, to respond to unforeseen events, to improve services, to support R&D aimed at benefiting and protecting the community at large, to underpin the setting and monitoring of appropriate standards and requirements etc.

Departments need to decide the balance between the minimum technical support required to discharge statutory responsibilities and to react to events, and the longer term strategic programmes to inform the department's future policy development. By publishing its research strategy, the department can provide a basis for debate with other sources of expertise over, for instance, the balance between short-term responsive activities and longer term anticipatory work; broader debate can also identify 'blind spots' where the department may have paid insufficient attention to the potential policy implications of new developments. More openness and debate on departmental strategy was an option discussed in the earlier POST report and the annual 'Forward Look' implemented by the Government will help by bringing together departments' future objectives in science and technology.

The **Customer-Contractor Relationship** is also very important, and departments have introduced a clear separation of the roles of departments as customers for work carried out in agencies, and as ultimate 'owner' of the agency. The departmental customer has had to develop its own 'intelligence' in order to be able to deal effectively with the scientific and technological work contracted out to agencies or other organisations, and 'teething' and other problems in this area were reviewed in the POST report. The **ownership responsibilities** of departments also involve them in very different considerations to those arising from their 'customer' role. The 'owner' will be more aware of the inflexibility inherent in highly specialised staff and equipment built up to meet previous policy needs. Where changing priorities and the closer customer-contractor relationship lead to mismatches between current needs and the expertise available, the department as 'owner' may have to decide how to deal with the surplus expertise. Options include agreeing transitional funding to allow the agency time to redeploy, retrain or reduce staff, redundancies, or redeployment into other parts of the department.

At the time of the earlier POST report, some agencies felt that while the full power of the departmental customer had swiftly been brought to bear under agency status, the role of owner had not received the attention recommended. A recent review by OPSS (the 1994 "Trosa report") concluded that this aspect of the agency system was still not working well; indeed some see it as difficult to develop this role while fundamental questions remain over how far Ministers see a long-term public sector role for GREs, or see agency status as an intermediate stage to privatising many of the existing functions[3]. The current PSRE scrutiny is thus important in suggesting that departments clarify once and for all which GREs are to remain in the public sector, so that departments are able to develop a long-term view of their roles as owner. Repeated reviews under the prior options and other mechanisms have diverted substantial amounts of management time away from adapting the agency to its new customer requirements (e.g. the future of BRE has been reviewed five times since 1979).

As already pointed out, the pace of change is substantial and continues as existing measures take effect in encouraging regrouping and restructuring. One pressures for change is the **competition and market testing** introduced through the 1991 White Paper "Competing for Quality". Increasing competition remains a cornerstone of Government policy and it is thus critical that this take place on a **'level playing field'** if a GRE is to make the most of its capabilities through competition. The POST report found some scepticism in agencies and private organisations alike over whether competition between an agency with public sector obligations and other organisations will ever be 'fair' - whether between agencies from different departments, RIs, universities or private sector organisations. The Scrutiny Team repeats earlier recommendations that HEIs should charge Full Economic Costs, but the POST report found many other instances where the playing field was unlevel - including between comparable institutions in EU States. The EC Procurement Directive (whereby all contracts over 40,000ECU have to be advertised to contractors in all EU States) also affects the UK much more than other countries because competition and market testing remove the exemption for departments commissioning research in-house.

Both the Scrutiny Team and the earlier POST report looked at alternative organisational models. The option of a 'Central Research Agency' (CRA) has already been mentioned. Another model is to build on closer links between GREs and the University sector, and the Scrutiny Team identified areas where such links might be developed (e.g. between the Natural Resources Institute and the University of Greenwich), and recommended that departments (and RCs) should routinely examine the potential for transferring PSREs to universities (this counts as "privatisation" under the Team's definition). In view of the small size of many university departments relative to GREs and the limited management experience of universities, scientific and educational links may be more readily encouraged than changes of ownership (however defined).

Although the majority of the PSREs were not seen as privatisable in themselves, the Scrutiny Team concluded that some of their activities could, in principle, be carried out in the private sector. In this context there are differing views over how large is the 'core' of science and technology support functions that should only be provided from within the public sector itself. The key focal point of this debate is over ownership of activities critical to the department's primary mission - e.g. responsibilities laid down by statute, the direct expert input into policy formulation (especially where such input has to be free (or seen to be free) of influence by special interests), the provision of day-to-day technical support, and emergency response capability. Support for these 'core' departmental functions may not be free-standing and often relies on being part of a larger more broadly-based organisation.

The Royal Society argues that management and ownership issues are inseparable from issues of mission. Since most GREs undertake work in the public domain and of public interest (e.g. to underpin regulations appropriate to an advanced industrial democracy), they should continue to be in public ownership. Others see the provision of scientific and engineering support in the same light as other services already contracted out to the private sector, and share the Team's view that there is scope for privatising parts of a GRE's work even if the overall establishment is not.

Whichever model is favoured, it has to recognise that science and technology resources take time to build up and cannot be turned "on" and "off" with the ease of some services Government buys from the private sector. Lessons from previous experience described in the earlier POST report suggest that Government may find that it cannot disentangle the question of future funding from the privatisation process, since it is likely to remain the key customer for any organisation which wishes to remain a viable concern rather than a liquidator of assets. Models abroad which appear to be successful are based on receiving a baseline of around one third of income from government-funded 'core' long-term research projects; to this is added a similar amount of work won from government on 'hard-charged' (i.e. competitively-tendered) projects, and a similar amount from non-government contracts. Structuring work in this way appears to offer prospects of viability and flexibility, whether publicly or privately owned.

3. The Transport Research Laboratory was 13 months into its first 3-year period as an agency when a decision to privatise was announced.