cc Master

JL 4/7.

10 DOWNING STREET

From the Private Secretary

17 July 1985

Dear Rob

The Prime Minister yesterday met Trevor Skeet MP and Sir Gerard Vaughan MP of the Parliamentary and Scientific Committee, at their request, to discuss the ABRC and SERC Review Group Report on UK Participation in High Energy Particle Physics.

Trevor Skeet explained that his main concern was the review's recommendation for a reduction in UK support for CERN. It was important not to dismiss the usefulness of this kind of research, in the area of "big science", and into fundamental concepts. For instance, research into high energy particle physics might well lead to valuable developments in the fusion field, particularly in ways of catalysing fusion reactions; in the use of neutrino beams for geographical prospecting; in the use of pions for the treatment of tumours; and in applying positron beams for assessing the likelihood of fatigue failure in metals. The UK should not be left behind in this important field; and the signs were that other countries, particularly the US and Japan, were increasing their commitment to it. The savings which might accrue from reducing CERN's budget would be insignificant by comparison with the overall level of public expenditure. It was vital not to throw away our leading position in the field of high energy physics for such a relatively small sum.

The Prime Minister said that the Kendrew Review was a report to the ABRC and SERC. They would be advising the Government in the autumn. The proposition that the CERN budget should be reduced by a quarter was not therefore one currently before Ministers. However, her own view was that there were dangers in tying up too much support for scientific research in institutions. This cut flexibility in the deployment of research funding, and could prevent support being given to work of practical value at the frontiers of knowledge. Furthermore, when she had last visited CERN the Prime Minister recalled she had detected an element of complacency and some lack of concern for efficiency. It was possible that resources currently devoted to CERN might be applied more productively to, say, microbiology or medical research. She accepted it was not

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possible simply to convert high energy physicists to microbiologists, but the map of scientific research could not be frozen for ever.

The Prime Minister indicated, in response to a suggestion put by Trevor Skeet, that there might be attractions in finding a way of negotiating with CERN to ensure that their operation became more efficient, and so that more of the equipment they used was commissioned from the UK. Mr. Skeet thought the Kendrew Review could perhaps be used in this way, as a bargaining lever.

I am sending a copy of this letter to Sir Robin Nicholson.

Yours ever

Mark Addison

Mark Addison

Rob Smith, Esq.,
Department of Education and Science.

E.R.

Prime Minister

YOUR MEETING WITH TREVOR SKEET MP AND GERARD VAUGHAN MP

Trevor Skeet and Gerard Vaughan are coming to see you in your room at the House at 4.00 p.m. tomorrow.

I attach some briefing.

MICHAEL ALISON
15.7.85

BRIEFING FOR THE PRIME MINISTER FOR MEETING WITH TREVOR SKEET MP AND OTHER MEMBERS OF THE PARLIAMENTARY AND SCIENTIFIC COMMITTEE ON 16 JULY TO DISCUSS CERN

BACKGROUND

1. The ABRC Report "Scientific Opportunities and the Science Budget 1983", which was published in March 1984, stated inter alia that the problems that faced the Research Councils were so grave that it would be wrong of them not to consider the possibility of creating greater scope for responding to the many challenges of science by withdrawing completely from a major area of scientific activity. Subsequently, with the concurrence of the Secretary of State, the ABRC, jointly with the SERC, set up a Review Group under the chairmanship of Sir John Kendrew to inquire into UK participation in high energy particle physics, a subject which takes about 10% of the total Science budget.

2. The Kendrew Report was published on 18 June and the Prime Minister will recall that Sir Keith Joseph minuted her on that date. Despite being extremely positive about particle physics and the standing of the UK in the subject, states that, with the present resources available for science and taking into account the opportunities in other areas of science that are having to be foregone, particle physics is taking too great a proportion of the Science budget. The Report rcommends that the UK give notice to the CERN Council that it can no longer remain a Member State of CERN after 1989 unless its subscription can be reduced by 25% by 1991/92. It also recommends that the domestic expenditure on the subject be reduced by 25% by 1990/91.

3. The publication of the Report was brought forward to 18 June because the Parliamentary and Scientific Committee had invited Sir John Kendrew to address them that evening. It was not possible to bring forward the publication still further to before the debate on/science in the House on the previous Friday.

4. The main issues likely to be raised by Trevor Skeet and his colleagues are:

i. the Kendrew Report recommendations.

ii. the statement on the REport by the Group's consultant, Dr Llewellyn Smith.

iii. the importance of CERN

iv. the effect of the Report's recommendations on CERN.

v. the effect of the recommendations on other international scientific collaboration.

vi. various general points on the Science budget.

THE KENDREW REPORT

Background notes on particle physics in the UK and on the findings of the Kendrew Report are attached at A and B. The ABRC and SERC have taken delivery of the Report and will be having preliminary discussion before the summer. They expect to advise the Secretary of State in the Autumn.

Line to Take

The Kendrew Report was commissioned by the ABRC and the SERC and it would not be right to comment on the recommendations before they have advised the Secretary of State in the Autumn, but very interested to hear views.

STATEMENT BY THE REVIEW GROUP'S CONSULTANT DR C H LLEWELLYN SMITH FRS

Because the Review Group did not include a particle physicist in its membership, Dr C H Llewellyn Smith FRS, a theoretical particle physicist, was appointed as a consultant to the Group to brief Members on the subject and to explain technical issues. He did not, however, attend meetings at which evidence was evaluated or when recommendations were formulated. After the publication of the Report he issued a statement saying that he considered that the recommended cut of 25% to be unrealistic and impossible to achieve. (Copy attached at C).

Line to Take

Copies of Dr Llewellyn Smith's statement have been sent to all Members of the ABRC, with the Kendrew Report, and the Board will, no doubt, take it into account when advising the Secretary of State.

CERN

There is little doubt that CERN is at present the leading particle physics laboratory in the world and there are good prospects of this continuing into the next decade. It is also arguably the most successful example of European cooperation. A background note is attached at D.

Line to Take

During my visit a few yers ago I was very impressed with CERN, and this view has been confirmed by the Kendrew Report. It is however extremely expensive and no matter how illustrious an organisation is, it should not be immune to reviews of its operation.

THE EFFECT OF THE KENDREW RECOMMENDATIONS ON CERN

The Report makes it clear that it would not be easy to achieve a reduction of 25% in the cost of the UK's subscription. The CERN convention requires member states to contribute to CERN's budget on a GNP basis, and other Member States are therefore highly unlikely to allow the Convention to be changed so as to permit the UK a unilateral reduction in its subscription. Such a reduction can therefore only be achieved through obtaining additional members and/or by cutting the total budget. In the timescale the contribution from additional members is likely to be relatively small and it is probable that a 20% cut in the overall budget would be required. This will have a major effect on the science programme at CERN, although it should still be possible to exploit the Large Electron Positron (LEP) collider, which is currently being built,albeit at a reduced pace. Further details are given in E.

Line to Take

Membership of CERN is a Government responsibility even though SERC pay the UK subscription. If the ABRC and the SERC recommend that there should be a change to our relationship with CERN this will be fully discussed with our fellow member of the Organisation.

OTHER CERN MEMBER STATES REACTION TO THE KENDREW REPORT

Reactions from our CERN partners to the Kendrew Report have been muted. There was some criticism in the Swiss (and to a lesser extent the French) press, but reporting has generally been accurate stressing that the Government has yet to make decisions. Dr Schopper, Director General of CERN, has however openly criticised the Report's findings. Clearly if decisions are in due course taken to change the terms of UK membership our partners can be expected to react more strongly, particularly if this might threaten CERN's pre-eminent position in particle physics or the basis on which collaboration now rests. Though it is thought that some of our partners might welcome a reduced CERN budget, they all attach considerable importance to CERN as an effective example of European scientific collaboration.

Line to Take

The Secretary of State for Education and Science has kept the relevant Ministers in other CERN Member States informed of the progress of the review and will continue to do.

LARGE INTERNATIONAL FACILITIES FOR CONDENSED MATTER RESEARCH: THE PROPOSED PACKAGE

The United Kingdom is trying to persuade other European countries, notably France, Germany and Italy (but some smaller countries also), to agree to a package deal whereby each would have access to international facilities for research into condensed matter. The facilities in question are the Spallation Neutron Source (SNS) at SERC's Rutherford Appleton Laboratory, the proposed European Synchrotron Radiation Facility (ESRF) likely to be built at Grenoble, and the Institute Lane-Langerin (ILL) also at Grenoble. The package involves trading-off capital and running costs of one facility against another in a mutally acceptable way. The scene is fast-moving; France and Italy seem to be broadly amenable to the UK's ideas but the Germans have got to be fully talked round; discussions continue. Seven of the smaller countries are due to visit the SNS in the next two months. The UK's future participation in CERN may become caught up in the package discussions, although initially it had been intended to keep its consideration separate.

You are visiting later this year, though this is not public knowledge.

Line to Take

The wider implications of any actions over CERN will be carefully considered and it may be possible to discuss CERN with other countries as part of the proposed wider package of international scientific collaborations.

GENERAL POINTS ON THE SCIENCE BUDGET

The following issues might be raised:

GOVERNMENT FUNDING OF CIVIL SCIENCE
PRIORITIES

Line to Take

1. The demands for money for science are always going to outstrip what can be afforded. This is true even in the wealthiest of countries and particularly so in the UK because of our poor economic performance over recent decades. It is therefore vitally important that we should keep research priorities under review to ensure that the distribuition of the money available best reflects national interests.

LEVEL OF FUNDING

Line to Take

2. Under this government, funding of the research councils through the Science Budget has grown by 8% since 1979-80 in real terms. There is no hard evidence that research in the universities has been disproportionately affected by reductions in UGC grant; on some indications, the volume of research activity in the universities appears buoyant.

THE BRAIN DRAIN

Line to Take

3. There is no firm evidence to support reports that the net brain drain from the UK is increasing. Of course it is a matter for concern if increasing

numbers of our brightest scientists are leaving the country but no firm evidence has yet been produced to show that this is in fact the case.

Background notes attached at F.

NOTE: ABRC's annual advice to the Secretary of State stresses the case for additional funding to raise the proportion of alpha-rated research applications funded - 72% in 1983/84, compared with 88% in 1979/80 (AFRC, MRC, NERC and SERC) - and to modernise more laboratory equipment in universities and research institutes. The Secretary of State will be considering ABRC's advice seriously with colleagues. No commitment can be given.

A

BACKGROUND INFORMATION ON PARTICLE PHYSICS

1. SERC EXPENDITURE ON PARTICLE PHYSICS

In 1984/85 the total expenditure was £55.5M broken down as follows:

	£M
Domestic Expenditure	
Grants to Universities	4.2
Direct Cost of Experiments	12.3
Computing	3.3
Total Domestic Expenditure	19.8
CERN Subscription	35.7
Total	55.5

A graph of SERC expenditure on particle physics since 1975/76 is attached. Since 1980 the CERN budget has been held constant in real terms; the rise in the UK subscription is partly due to a relative increase in the UK net national income compared with other member states, and partly to the fall in the value of sterling.

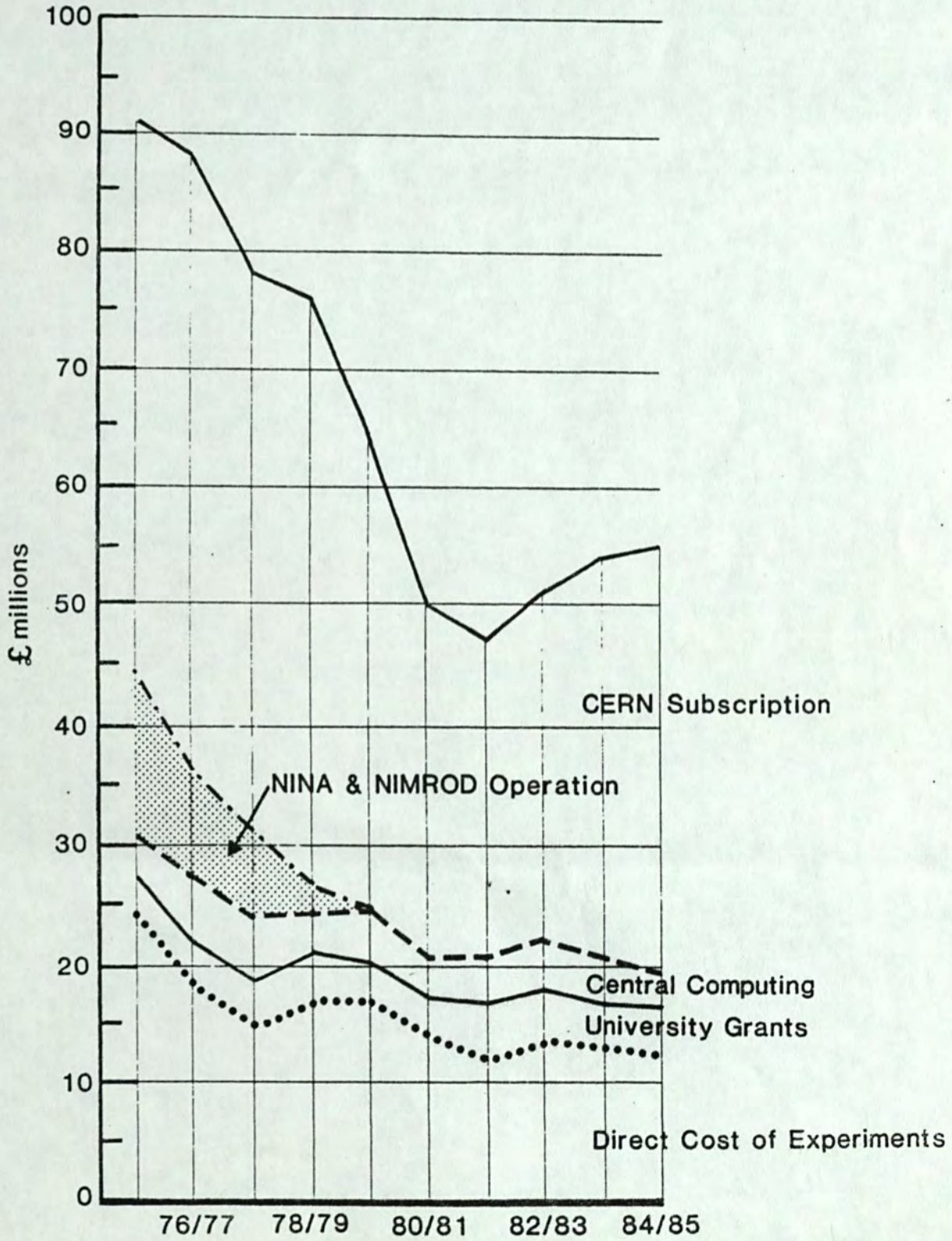
THE PARTICLE PHYSICS COMMUNITY

The UK particle physics community consists of just under 400 post doctoral physicists and 240 post-graduate students, with the following distribution between experimental and theoretical particle physics in 1984:

	University		SERC Staff		
Physicists	Academic Staff	Post-doctoral Fixed Term	Permanent	Fixed Term	Research Students
Experimental	133	80	16	29	104
Theory	90	34	6	6	132
Total	223	114	22	35	236

FIG. E.2

SERC EXPENDITURE ON PARTICLE PHYSICS 1975/76 to 1984 AT 1984 PRICES



B

THE KENDREW REPORT

1. The Review Group report that particle physics is at an exciting stage of development in which UK physicists are playing an important role and that the facilities at CERN, both current and under construction, are of the highest standard. Nevertheless, with the present resources available for science in the UK the Group has concluded that the proportion of funds devoted to the subject is too high and that it should be reduced by 25% over a period of time.

2. About 60% of the expenditure on particle physics (about 6% of the Science budget) is used to pay the subscription to CERN, which is currently about £38M. The contribution from each state is determined in proportion to its net national income and at present the UK's share of the total budget is 16.1%. The Report acknowledges that little can be done to reduce the UK's subscription until the construction programme for the Large Electron Positron (LEP) collider is complete in 1988/89 and has therefore recommended that the UK press for a 25% cut in its subscription by 1991/92, and that if a suitable reduction cannot be achieved the UK should withdraw.

3. Much of the remaining 40% of expenditure on particle physics is used to support staff and to contruct experiments for use at CERN and other high energy physics laboratories. Just as the UK is morally committed to not disrupting the construction of LEP it is also committed to providing important components for three of the four LEP experiments. This limits the speed with which cuts could be achieved in the domestic budget and the Report recommends the full 25% reduction by 1990/91. This level of cut is likely to result in at least 25% of the present particle physics community not receiving funding for their research.

4. The Report stresses that even the final 25% saving (about £14M per annum) would not in itself solve the financial problems of other areas of science, but that it balances the advantages of continuing effective research in particle physics and at least making a partial contribution to the needs of other areas of science. In the short term additional funds are urgently required, at least until the full savings from particle physics can be achieved but in the longer term the strength of the case for increased funding would depend on how well the science community could show that it had made the most cost effective use of the available funds.

Response to the Report of the ABRC/SERC Enquiry on High Energy Particle Physics

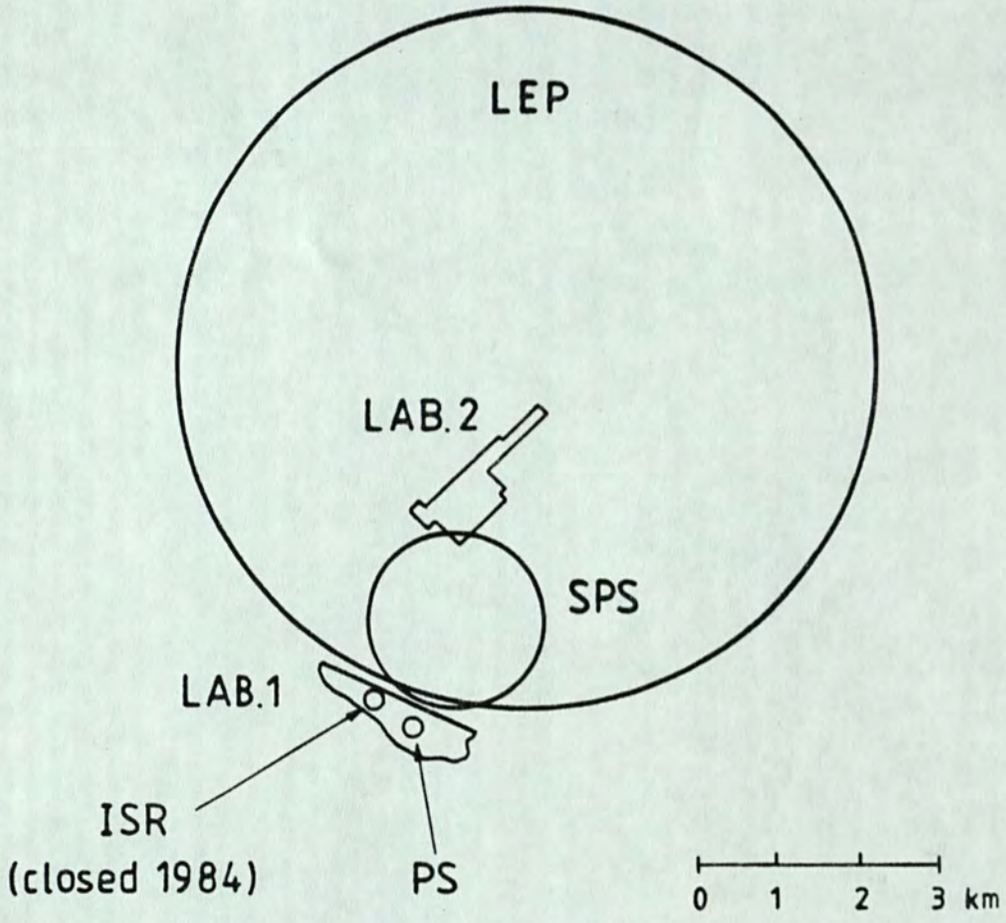
Having acted as consultant to the enquiry and finding myself in disagreement with unsubstantiated assertions in their report, I have decided to issue this brief riposte. *It should not be quoted until the report is published on June 18*, when the Chairman, Sir John Kendrew, will hold a press conference. I will be happy to answer questions about my statement, although I may be hard to contact as I will be dealing with final exams from June 20.

C. H. Llewellyn Smith,
Department of Theoretical Physics,
1 Keble Road,
Oxford OX1 3NP
0865 – 53281 × 355

Embargoed until 3 p.m. on June 18

CERN Today

The proposed cut of 25% would reduce the budget to the same level as in 1967–68 when CERN consisted of Lab 1 only, with ISR construction just beginning, and served a much smaller community of users.



UK Expenditure

Ratio of expenditure on particle physics in 1984 to that in 1975, in real terms.

	Total	Excluding CERN contribution
$\frac{1984}{1975}$ =	0.61	0.45
[Excluding running costs of two UK accelerators, closed in 1977 and 1978]	0.71	0.65

The report recommends a further reduction of 25%.

Response to the ABRC/SERC Enquiry on High Energy Particle Physics

C. H. Llewellyn Smith FRS

The real issue facing all branches of science in the UK is the erosion of our superb scientific tradition brought about by the inadequate level of the science budget. The existence of the ABRC/SERC enquiry is a symptom of the present desperate situation, which is diverting scientists from their true vocations and turning them against one another. I hope that these remarks will not fuel this internecine struggle but contribute to the real battle for science generally.

The Kendrew committee was composed of an industrialist, an economist, and five scientists from fields other than particle physics, in contrast to usual SERC practice *e.g.* the committee now investigating engineering contains two engineers. I was therefore invited to act as a consultant to explain technical issues, but I did not attend meetings at which evidence was evaluated and the conclusions were formulated. Although I believe that the committee did their job conscientiously, I also believe that when they weighed the claims of particle physics against those of other sciences some arguments went by default. Being the only particle physicist in a position to respond quickly, I have decided to issue this brief riposte pointing out some of the consequences of the recommendations which it appears that the committee have neglected to consider and some of the lacunae in their arguments.

The most important points which need to be made clear to readers of the report are

(1) The recommendation that the UK's contribution to CERN be reduced by at least 25% by 1991 amounts to a recommendation that the *total* CERN budget be cut by about 25% because we cannot cut our contribution unilaterally and there is no prospect of substantial new contributions by 1991 either from new members or from intermediate members in the new category suggested in the report. Indeed countries such as the USA and Japan are never likely to join except in support of a new project.

(2) The unsubstantiated contention that a 25% cut in the CERN budget by 1991 is attainable and would allow CERN to maintain itself at a world-class standard is false. In particular:

   a) As the report acknowledges, there is little scope for cutting the budget before 1989, when the first stage of LEP construction should be completed. It would not then be possible to cut the budget by 25% by 1991 without halting almost all experimental activity. Certainly a rapid cut of 25% in the total budget at CERN, as at any large laboratory, would require a much greater cut in scientific activity due to the necessity of maintaining the existing infrastructure and the fact that personnel costs, which comprise nearly half the budget, cannot be reduced rapidly. This is especially true at international

such as CERN, where a redundancy typically costs $3\frac{1}{2}$ years' salary.* Unless salaries are cut significantly, personnel costs at CERN are actually set to rise due to a changing age distribution and a technical problem with the pension fund; they will not begin to fall until after 1991 even if *no* departing and retiring staff are replaced.

b) The present CERN budget is the same in real terms as in 1971/72 when CERN consisted of Lab 1 and the ISR. Now (see map) Lab 2 and the SPS have been added and LEP is under construction. LEP is being built without any increase in the budget, which fell by over 20% following the construction of the SPS, by making severe economies involving closure of major facilities and termination of some research programmes, and postponement of maintenance. There is therefore little scope for cutting the non-personnel budget following completion of the first stage of LEP if it is to be exploited properly and the programme is to recover from the sacrifices which were made in order to fund the construction of LEP. Even on a workable time scale, a 25% cut would devastate the scientific programme and require postponing, possibly indefinitely, the planned upgrading of LEP to the energy it is designed to reach, which determined the size and initial cost of the machine. It would put the budget back to the level of 1967–68 when CERN was much smaller (see map) and served a much smaller user community, as there was then still vigorous activity at a number of accelerators in the UK, France, Italy and Germany which have since been closed.

(3) Some member states might welcome a small cut in the CERN budget, although I imagine that the Italians would oppose any cut, having just doubled their funds for supporting experiments. But it is inconceivable that the required two-thirds majority would support a 25% cut by 1991 in view of the devastating effect it would have. If taken seriously, and not just as a negotiating tactic, the recommendation that the UK withdraw from CERN if the proposed cut is not achieved therefore implies withdrawal (thus reducing the CERN budget by the UK's share of 16%). It is unfortunate that, by failing to consider whether the proposed cuts could realistically be achieved, the committee fail to face up to this consequence.

(4) In addition to cuts at CERN, the committee recommend that the "domestic" budget, used to support experiments at CERN and elsewhere, be cut by 25% in the next five years. Following a cut of 35% over the last ten years, this domestic support is already much lower than in France, Italy and Germany, making it harder for us to get value for money from membership of CERN. A further cut of 25% would, in my opinion, entail a similar, almost irreversible, cut in the number of experimental particle physicists and technical support staff. The report's suggestion that this can be done in an orderly way allowing those who remain to be chosen on merit is ludicrous: most of the cut would be likely to fall arbitrarily on those involved

* The terms of redundancy are much less generous for staff hired since 1980.

in experiments which are about to be completed. At the new proposed budget level, the remaining groups will still be able to participate in some front-line experiments but there would be no scope for new initiatives or for the development of new techniques, which is already almost at a standstill. Furthermore, I believe that a 25% cut, following a 35% cut, will drive many of the most able young particle physicists overseas, leaving behind a demoralized and ageing community.

(5) Scientists generally (and all MPs who spoke on the subject in last Friday's debate in the House of Commons) accept that most branches of science in the UK are now grossly underfunded and that the science budget should be increased. Increasing demands and new developments, together with cuts in UGC funding, have created very severe problems for all the research councils, despite the fact that, with the possible exception of the MRC and the SERC, their budgets do not seem to have decreased in real terms in the last decade.* In the case of the SERC, cuts of 40% in the total particle physics budget in the period 1975–1984, combined with a cut of 25% in the budget of the Astronomy Space and Radio Board, have helped to alleviate the problems for other sciences, allowing the budget of the Engineering Board to increase by 125% and that of the Science Board to increase by 25% in real terms. It can be argued that expenditure on particle physics was too high in 1975 since we then still supported two UK accelerators, in addition to CERN, but even if their operating costs are subtracted the cut between 1975 and 1984 was 30%. The demand for a further cut of 25%, which — as emphasised in the report — would only go a small way towards solving the problems faced by the research councils, will be a bitter pill to swallow, especially in view of the SERC's submission to the ABRC in 1981 that "Council ... wishes to see funds for this area [*i.e.* nuclear and particle physics] remain at an essentially constant level throughout the forward-look period", which was accepted by the ABRC who stated in their advice to the Minister of State in 1982 that "we now accept the contention of the SERC that there is no case for further redeployment of resources away from big science". These policy statements formed the basis for long-term planning in particle physics, which involves commitments for periods of

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* Comparing the Science Vote Estimates for 1971/72 with the figures for the total income of the research councils for 1984/85, *all* budgets have *increased* in real terms if the rpi is used to allow for inflation. Using instead the inflation factor which is supposed to be appropriate for research and development, according to *British Business* (a DTI publication) of 18 January 1985, the budgets of the MRC and of the SERC fell by 1.5% and 5.5% respectively. All budgets have decreased as a fraction of gdp, the decrease corresponding to a "loss" today of about £37M p.a. relative to the budget in 1971/72 in the case of the SERC, which is nearly three times as much as would be "saved" by cutting 25% from the particle physics budget. The fact that the gdp has risen, and is rising now, makes nonsense of the claim which is sometimes made that we can no longer afford the same level of scientific activity as in the past. [The figures in the rest of this text are based on rpi].

a decade, but have already been negated by cuts in the particle physics budget imposed by the SERC in the last two years.

(6) I am happy that the report describes the subject to which I have devoted my professional life as "enormously exciting, exhilarating and intellectually rewarding". However, I think that the committee have underestimated the value of technological spin-off from particle physics, but this is a matter of opinion as no serious attempt to quantify all the benefits of spin-off has ever been made. More importantly, they have made a serious error in dismissing the possibility of useful future applications as an important reason for supporting particle physics. Personally I believe that, in the long run, momentous applications are almost inevitable. History suggests that, even if the odds were long, the magnitude of the potential returns would more than justify current expenditure on basic science such as particle physics. Perhaps the Germans and Japanese, who are now constructing their own large accelerators, appreciate this argument.

(7) The recommendations in the report would severely damage particle physics, while only making a small contribution to the solution of the crisis in science funding, and would also damage the UK's credibility as an international collaborator in science generally. The ABRC and SERC do not have to accept the recommendations. Let us hope that a rapid increase in the science vote makes it unnecessary for the ABRC and SERC even to contemplate making wounding cuts in particle physics or other healthy parts of the body of British science.

CERN

THE CERN BUDGET

The present CERN budget is 700 M Swiss franc (about £230M) and the cost is distributed to Member States in proportion to their net national income. At the present time the UK's share is just over 16%. Attached is a graph showing the overall CERN budget and the UK subscription since 1975 at 1984 prices.

CERN FACILITIES

The main facility at CERN is the Super Proton Synchrotron (SPS), which can also be used as a proton-antiproton collider. Recent successes on the collider include the discovery of the W and Z bosons and the sixth quark. At the present time there is little doubt that CERN is the leading high energy particle physics laboratory in the world.

The Large Electron Positron collider, which is currently being built should ensure that CERN has a world class programme well into the next decade and beyond.

THE EFFECT OF THE KENDREW RECOMMENDATIONS ON CERN

1. The Kendrew Report acknowledges that it will not be easy to achieve the recommended level of cuts either to the CERN subscription or to the domestic programme and Dr Llewellyn Smith in his statement says that a 25% cut in the CERN subscription is impossible to implement and therefore that the UK will be forced to withdraw.

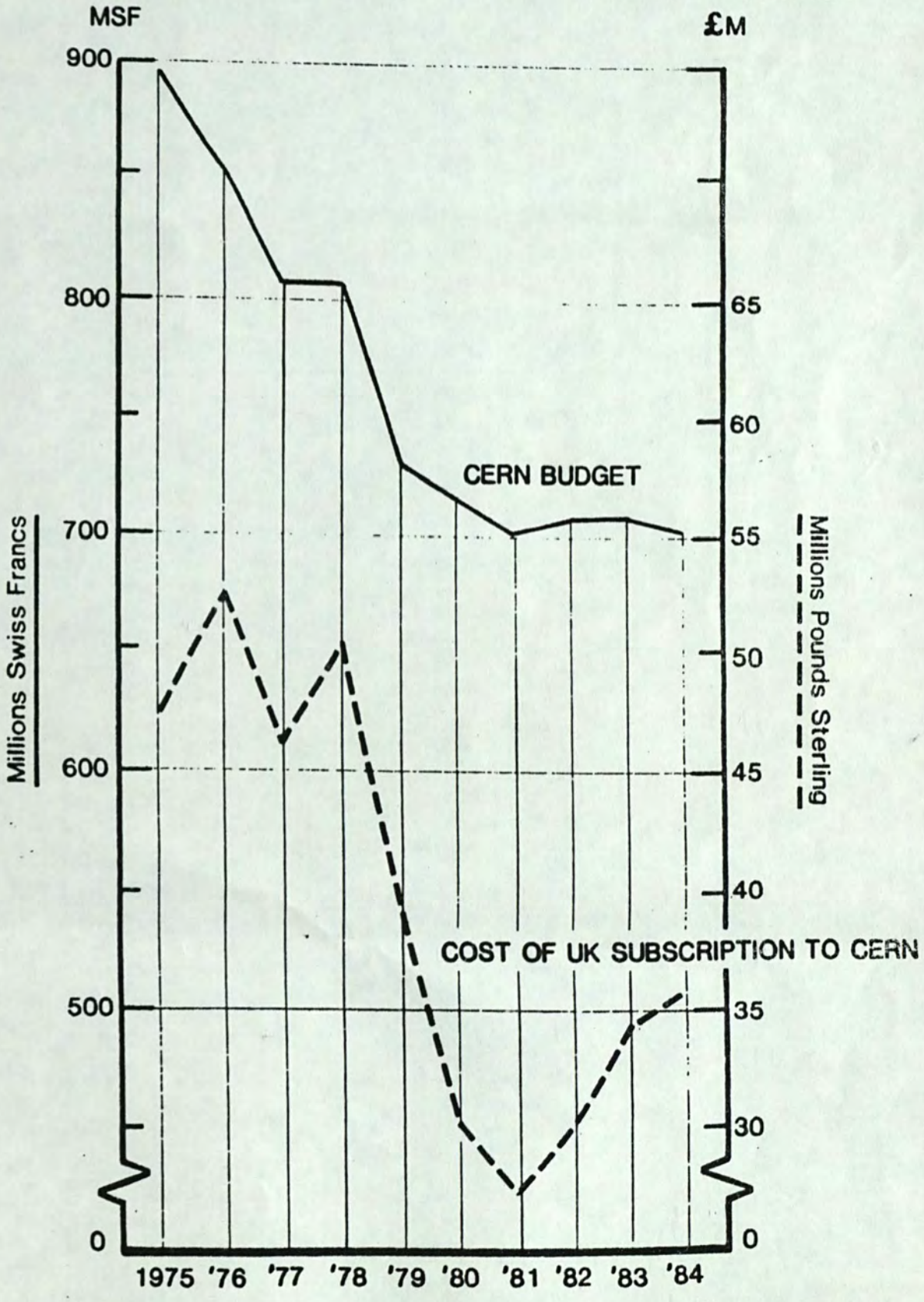
2. The UK clearly cannot expect special treatment from the other CERN members and hence a 25% reduction to its subscription implies similar treatment for all the other members. With the present structure this could only be accommodated by some combination of reducing the overall budget and attracting more members. Up to the early part of the next decade it is unlikely that more than 5% of the CERN budget could be covered by new members even taking into account the increasing contributions from Spain, which has recently rejoined. Hence a cut of about 20% would be required in the CERN budget.

3. A cut of this magnitude is probably achievable but, as the Report indicates, not without considerable disruption. It should be possible to exploit LEP, but most of the other work would have to be drasticly curtailed. It remains to be seen how acceptable this is to other members, especially those from Northern Europe, who have less of an interest in LEP.

4. Two Members of the Review Group visited Dr Haunschild, the Permanent Secretary of the West German Ministry of Research and Technology, and Sir John Kendrew visited Professor Curien, the French Minister for Research and Technology. Both indicated an interest in reducing the cost of CERN, but are unlikely to support a call for a 20% cut in the budget.

FIG. F.5

THE CERN BUDGET AND UK SUBSCRIPTION FROM 1975 TO 1984 IN MILLIONS OF SWISS FRANCS AND £M. RESPECTIVELY (1984 PRICES)



E

BACKGROUND NOTES ON THE SCIENCE BUDGET

1. A table showing the growth in real terms of the Science Budget 1978-79 to 1985-86 is attached. However, the Advisory Board for the Research Councils in their advice published on 13 June (copy of press release attached) estimate that allowing for certain special cost increases, the resources available for science within the Science Budget may have fallen by 5 % since 1981-82 and on present plans, could fall by a further 4% by 1988-89, making a total real reduction in the 1980s of 10%.

House of Commons Debate on Science: 14 June

2. The Secretary of State for Education and Science has acknowledged (most recently in the House of Commons debate on the Government's policies for science on 14 June) that the research councils are facing increases over and above average inflation in certain overheads costs (notably superannuation and the foreign exchange in which international subscriptions are paid); and that the ABRC have made a "powerful" case for more money for science. At the same time Sir Keith took credit on the Government's behalf for the real growth, measured against average inflation, of the Science Budget; and stressed the need for greater selectivity and concentration of the resources available for research in order to get the most value from them. (Hansard of Sir Keith's opening speech attached).

Research in the Universities

3. In the last public expenditure White Paper, the Government estimated that reductions in UGC grant had cut universities overall funding by 8% in real terms since 1981-82. Many commentators (including the ABRC) argue that the reductions in university research have been greater than this because of universities' desire to protect teaching, but the DES line is that there is no evidence for this. Universities' income from research grants and contracts has increased in real terms since 1981-82.

TABLE 1

SCIENCE BUDGET 1978-79 TO 1985-86 AT CONSTANT PRICES[1]

£m
Cmnd 9428

	1978-79	1979-80	1980-81	1981-82[2]	1982-83	1983-84	1984-85	1985-86
Science Budget	503	494	481[4]	502	503	516	525	534
Index				100	100.2	102.9	104.6	106.4
Other income[3]	96.5	97.3	100.8	104.8	103	99.7	94.7[5]	96.9[5]
TOTAL	599.5	591.3	581.8	606.8	606	615.7	619.7	630.9
Index	100	98.6	97.0	101.2	101	102.7	103.4	105.2
				100	100.1	101.5	102.1	104

1. Average 1983-84 prices, using the GDP deflator.
2. Figures adjusted for transfer of commissioned research funds this year from DHSS and SHHD to MRC.
3. Mainly (75%) from commissioned research funded by Govt departments.
4. Provisional figure, being checked with Treasury.
5. Estimated figures.

EXPENDITURE ON SCIENCE - BACKGROUND MATERIAL
(EXTRACTS FROM ABRC PES ADVICE

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