

S
3001

PREM 19/2252

PART THREE

MORATORIUM ON APPLICATIONS

FOR SUPPORT AND INNOVATION.

RESEARCH AND DEVELOPMENT.

(1986 Annual Review of Government
Funded R&D - In Folder)

INDUSTRIAL

POLICY.

PART 1: NOV 1984

PART 3: OCTOBER 1986

Referred to	Date	Referred to	Date	Referred to	Date	Referred to	Date
13.10.86							
17.11.86							
28.11.86							
3.12.86							
4.12.86							
5.12.86							
8.12.86							
10.12.86							
11.12.86							
23.12.86							
12.2.87							
26.2.87							
3.3.87							
5.3.87							
10.3.87							
12.3.87							
24.3.87							
25.3.87							
30.3.87							
27.3.87							
PREM 19/2252							
X							
PART ENDS							

PART 3 ends:-

31.3.87

PART 4 begins:-

1.4.87



Qz.05720

MR. WICKS (10 Downing Street)European Community: Research and development

I undertook to let you know the latest position following the Research Council of 24-25 March. It seems to us that the main points now are

1. the framework programme. The framework programme is not a completely new investment in Community research. There are individual programmes running now; and the Commission and some member states are always trying to increase their range and cost. The framework programme is intended to put some order into these arrangements and, in particular, to establish research priorities and to set an overall spending limit for the five years. We (and the Treasury) supported the idea in the working discussions before the Single European Act. Experience has shown that it has been possible to move the programme emphasis on to better (and, in particular, better value for Britain) research and to cut back the Commission's ideas on expenditure. The Prime Minister will recall that, when it was suggested at a European Council that 6% of the budget should go on Community research and development, on our advice she conclusively rejected that. Subsequently we have knocked down the Commission's suggested expenditure on the framework programme from over 10 billion ecu to the present Presidency proposal for a total new framework of 4.5 becu over 5 years (there are also 1084 mecu of commitments from existing programmes). In almost a year's discussion we have not moved up 1 ecu and it is, of course, obvious that the E(A) decision has played the main role in bringing the whole Community's ideas down.
2. Community budget ceiling. It is essential, whether or



not we go along with a framework programme, that we make absolutely clear that we shall not permit the decision to be prayed in aid of any proposal to raise the budget ceiling. This is the right course. It is also coherent with current expenditure levels - the annual rate of expenditure under the now reduced framework programme is close to that in this year's budget, so that other member states cannot sustain a case for raising the ceiling on this ground.

3. Action now. We have toiled in the boiler-room. Now we have a choice of

either

(a) to stand absolutely pat on our position. It is only right to point out that there are some risks in this. It would be equivalent to vetoing all Community research and development because the framework programme is supposed to subsume all the detailed programmes (framework programme unanimity, detailed programmes qualified majority). Other member states are not going to let this research and development run down to zero and will look for ways of bypassing. In due course they would probably claim that the Council has failed in its duty to set a framework programme and that it must move on to deciding the bits separately. We must be careful that we do not lose the redistribution of research and the big cuts in expenditure we have achieved by our hard line in negotiation so far.

Or

(b) to stand with the Germans. It is our joint weight which has achieved the most so far. It is possible - although not certain - that we could push some more elements outside the framework programme period. In short, we should be aiming with the Germans to settle at or very close to a



framework programme of 4.2 becu new money and the 1084 mecu of existing commitments. We are now quite close to the point at which we could live within the existing PES baselines. We estimate that, if we follow this option, the extra financing cost might be about £15-£19 million a year, after allowing for some offsetting savings identified earlier.

We have conducted the discussions both in Brussels and London on the basis of the research priorities and the public expenditure cost. It is, however, worth keeping in mind that, in sharp contrast to the situation on the CAP, the United Kingdom is a net beneficiary of the research and development expenditure of the Community. Over the full five year period of the framework programme we expect that about £940 million of research and development would be financed by the Community in the United Kingdom, about £215 million more than our total contribution to the programme. Having forced the programme down and into shape, we need to think carefully about passing this up.

D.F. Williamson

D F WILLIAMSON

27 March 1987

CDP ②



DEPARTMENT OF TRADE AND INDUSTRY

1-19 VICTORIA STREET
LONDON SW1H 0ETTelephone (Direct dialling) 01-215 5147
GTN 215 5147
(Switchboard) 01-215 7877From the Minister of State
for Industry and Information Technology

RT HON GEOFFREY PATTIE MP

Rt Hon Sir Geoffrey Howe QC MP
Secretary of State
Foreign and Commonwealth Office
Downing Street East
LONDON
SW1A 2AL

Dear Secretary of State,

Prime Minister
This summarizes the
situation needed at
25 March 1987
Research Council.
A decision on whether to
strike absolutely to our

EC R&D FRAMEWORK PROGRAMME - 24 MARCH RESEARCH COUNCIL

You will have seen the two Reporting Telegrams on Tuesday's
Research Council but I thought that you and colleagues should
have a summary of my own views on the outcome.

Until this Council we had been able to keep together with France
and Germany to curb the excessive ambitions of the Commission and
some other Member States. Chirac's public declaration earlier
this week that his Research Minister, Valade, had authority to go
beyond 5 becu at the Research Council effectively destroyed the
prospect of the triple alliance continuing.

That indeed proved to be the case. However Riesenhuber, although
stating his readiness to move to 5 becu if it secured unanimity,
nonetheless co-operated closely with me throughout the Council
and steadfastly refused to allow us to become totally isolated.

Ten Member States rallied - if somewhat hesitantly - to a revised
Presidency compromise (see below). Riesenhuber and I were asked
by the Presidency to report back to our respective Governments
and to let them know our positions by 3 April. Whilst
acquiescing to the Presidency request, I resolutely maintained
that the UK position remained 4.2 becu and I could not in anyway
anticipate the reaction of my colleagues in London. The
Commission will not give their views on the compromise until
shortly after 3 April.

position will be needed
shortly.
CDP
26/3

MR7/MR7AAT



The Presidency compromise consists of 1.084 becu commitments already agreed to plus 4.533 becu of new commitments to be entered into during the period 1987-1991, giving a total of 5.617 becu. Added to this is a "tail" of 0.863 becu not to be committed until after 1991.

The equivalent UK position is 1.084 becu of commitments already agreed plus 3.116 becu of new commitments, giving a total of 4.2 becu. Provided we can obtain a watertight guarantee that none of the "tail" can be committed until after 1991 then we could possibly agree a "tail" of about 0.8 becu.

At the Council I could not accept the Presidency compromise because the overall total for commitments in 1987-1991 of 5.617 becu is well above the level agreed by colleagues; we have to be confident that watertight guarantees are in place to ensure that the "tail" cannot be committed until after 1991; the distribution of the total and the "tail" among the main activities within the Framework Programme was not entirely clear.

Although I could not accept the Presidency compromise, the very substantial progress we have made in cutting back the total figure has to be acknowledged. Last March the Commission's original ideas were for 10.375 becu and their formal proposal is 7.735 becu. The latest Presidency compromise itself represents a reduction of about 0.4 becu on their previous compromise. The triple alliance must take a great deal of the credit for this achievement and it is regrettable that we can no longer rely upon French support to influence discussions.

I am copying this letter to the Prime Minister, Peter Walker, Kenneth Baker, Norman Fowler, John Moore, John MacGregor, other Members of OD(E) and to John Fairclough in the Cabinet Office.

Yours sincerely

Julian Farrel

GEOFFREY PATTIE

(Approved by the Minister, and signed in his absence.)

MR7/MR7AAT



Secretary of State for Trade and Industry

DEPARTMENT OF TRADE AND INDUSTRY
1-19 VICTORIA STREET
LONDON SW1H 0ET

Telephone (Direct dialling) 01-215) 5422
GTN 215)
(Switchboard) 01-215 7877

CONFIDENTIAL

24 March 1987

The Rt Hon Nicholas Ridley MP
Secretary of State for the Environment
Department of Environment
2 Marsham Street
London SW1P 3EB

NBRM

Dear Nicky,

E(RD): DEPARTMENT OF THE ENVIRONMENT RESEARCH & DEVELOPMENT

You will recall that on 30 September last year (E(RD)(86)4th Meeting, Item 1(i) you agreed to report to the Sub-Committee before the end of 1986 on a number of issues described in paragraph 12 of E(RD)(86)10.

In the event, there was no report to the Sub-Committee by the end of last year. The Cabinet Office have been in touch with your officials at senior level since last December and were given an undertaking in early February that a report on the outstanding remits would be put to E(RD) at the Sub-Committee's meeting in March (now fixed for 5.00 pm this Thursday, 26 March). I now understand that there is yet further delay and that you will not be able to report to the Sub-Committee on these issues in time for Thursday's meeting.

I also understand that you made an announcement on 23 January this year that your Department was now beginning discussions on the implementation of the recommendations of the Harrop-Chilver report on the role and activities of the Building Research Establishment. I was a little surprised at this since it was the very subject of one of the remits from the Sub-Committee. I have not seen the Harrop-Chilver report myself, but I understand it recommends that BRE's role should be to act as contractor and adviser to your

JG1AXF



CONFIDENTIAL

Department, with less emphasis on securing the benefits of well-directed research for the construction industry as a whole. If this is the case, it would seem to run counter to the general thrust of E(RD)'s thinking.

I should be grateful if you could let me know how soon you will be able to report to the Sub-Committee on the work that was agreed should be carried out last September. I should also be interested to learn how it is proposed to consult the Sub-Committee on the particular question of BRE.

I am copying this letter to the Prime Minister, members of E(RD) and to Sir Robert Armstrong.

Y
ms,
Paul

PAUL CHANNON

SUBJECT
CC MASTER

Meeting record

10 DOWNING STREET
LONDON SW1A 2AA*From the Private Secretary*MR. FAIRCLOUGH
CABINET OFFICER AND D

You discussed with the Prime Minister yesterday morning your minute of 17 February about R and D.

2. The Prime Minister agreed very strongly with you that action had to be taken to ensure that Government support for R and D was directed towards national priorities. This would form part of the Government's programme for the next Parliament. The House of Lords report had created an expectation of change. But the likely opposition to change should not be underestimated. Your proposals should be worked out in much greater detail, concentrating on how the major areas of R and D spending would be tackled: it would not be helpful to antagonise the people running smaller programmes. You might consult a few people outside Government, for example Sir Kenneth Berrill, Lord Dainton and Sir Robin Nicholson. The Prime Minister emphasised her concern that any new machinery should substitute for existing machinery and should not add to it.

2. You mentioned your idea of creating directed research centres on university campuses, to be funded jointly by the research councils and the UGC. The centres would be multidisciplinary, and universities would have to compete for them. You also said it would be important to try to break down the barriers between departments and universities. The Prime Minister said she would be against

the creation of more research institutes: these tended to become simple lobbyists for more spending.

3. The Prime Minister invited you to prepare a further paper, together with a draft reply to the House of Lords Select Committee on Science and Technology.

4. May I offer some suggestions on what your further paper might cover?

5. The main areas will clearly be:

- (i) the arrangements for providing advice on priorities;
- (ii) the arrangements for taking decisions on the allocation of resources, and how those decisions would be expressed;
- (iii) the arrangements for implementing the decisions, including links to the Public Expenditure Survey;
- (iv) the arrangements for monitoring and review and feedback to (i) above.

6. The arrangements for taking the decisions and how they would be expressed ((ii) above) are probably the key areas. Assuming the central structure proposed in your minute, the relationship between E(RD) and the expanded ACARD on the one hand, and individual departments, the UGC and the research councils on the other will need to be carefully defined. Paragraphs 7 and 8 of your paper make a start on this. However, the Prime Minister clearly wishes E(RD) and ACARD to have a greater role in determining science priorities than you seem to envisage, and it does seem unlikely that the process you describe in your paragraph 8 would have much effect on patterns of spending.

7. Your present proposal would seem to imply that E(RD)'s decisions would be of the "more should be spent on applied science and less on basic science" variety. This view could be made known to the research councils, and departments, and the results monitored. E(RD) and ACARD could then remain aloof from decisions of detail. But the effects on R & D would be slow, uncertain and probably small.

8. At the other extreme, E(RD) could specify that £ x m. should be transferred from one category to another and how the money should be spent within those categories. E(RD) would then also have to decide which bodies should take action to bring about the transfer. In other words, E(RD) would be expected to approve the spending plans of MOD, the research councils and so on, in some detail, down to the particular problems or technologies to be studied. This would be fiercely resisted.

9. A middle course would be for E(RD) to take a broad view of priorities, and then to consider and amend or approve the plans of departments and research councils in the light of those priorities. The plans might cover, say, three years ahead. E(RD) would consider priorities primarily in terms of the broad categories, but might within those also say that special priority should be given to one or two areas, for example new materials. The plans of a third of the spending bodies which would be considered each year.

10. Plans set for three years ahead should be supported by funding agreed for the same period. This suggests that E(RD) should work to a timetable geared to the Public Expenditure Survey. (The Treasury will hate it).

11. Even this degree of central control of science spending will be resisted. And it would seem to me wrong for a Cabinet Committee to hold all the discussions of the kind envisaged in complete secrecy. The research councils and UGC may need at some stage in the process an opportunity to present their case direct to the deciding body. The Council

proiposed by the House of Lords, or some version of it, might have a role in the way it would bring ACARD and Ministerial discussions together.

12. The position of MOD will need special attention. The Treasury has allowed MOD for twenty or more years to run a block budget, with general discretion on how they allocate their resources. Treasury approval is required for spending on larger individual projects, but the Treasury has virtually no influence on the decision whether a particular weapon is needed. It is extremely difficult to question a military or intelligence judgement. E(RD) should be able to influence, for example, the balance between in house R & D and R & D carried out under contract by industry. An influence over the pattern of R & D would be hard to win, even once the Committee had got to the bottom of the MOD's figures.

13. The categories within which E(RD) discussed the allocation of R and D would need careful attention. If those in George Guise's note were to be adopted, I would predict a steady fall in UK spending on basic science - as projects were reclassified to other categories.

14. I suggest it would be worth aiming at another discussion with the Prime Minister well before Easter: otherwise the lobbies will hear of the exercise and you will lose control of it at too early a stage.

15. I am sending copies of this minute to Sir Robert Armstrong and to Mr. Guise (No. 10 Policy Unit).

DNS

David Norgrove

12 March 1987

CCB/UP



Prime Minister.

A note by George Gurn is attached. You may also wish to glance again at John Fairclough's minute.

Ref. A087/673

MR BEARPARK

Research and Development

psl
10/3

The Prime Minister is to discuss with Mr Fairclough tomorrow the issues raised by his minute of 17 February. The Government will need to make a response to the report of the House of Lords Select Committee on Science and Technology on civil research and development. I should like to support the recommendations in Mr Fairclough's minute.

2. I share Mr Fairclough's view that we do not need a specific Minister in Cabinet, under the Prime Minister, designated to speak for science and technology or council for science and technology on the lines suggested by the Select Committee. On the other hand I think that Mr Fairclough's proposals for strengthening the remit for ACARD make good sense. And I support in particular his proposal for machinery to establish priorities for research and development across the board, so that we can look at all the various departmental expenditures on research and development together.

3. The Ministerial Sub-Committee on Research and Development (E(RD)) had been doing a good job of work, and I agree with Mr Fairclough's proposals for giving it a clear role in the annual review of priorities for science and technology. I think that E(RD) should submit its report on this to the Prime Minister, and she can decide whether it should be discussed in Cabinet or in the Economic Steering Committee or at an ad hoc meeting.

4. If the Prime Minister is minded to agree with Mr Fairclough's general recommendations, I think that the next



stage should be for him to discuss them with the Secretary of State for Trade and Industry, who is the Chairman of E(RD).

Chairing the Committee is not a very easy task particularly when it comes to discussing issues arising on defence research and development: the Ministry of Defence are adept at resisting change which erodes their autonomy or reduces their share of the spend.

5. As you know, there are separate proposals in the wind for taking the responsibility for science out of the Department of Education and Science and bringing it under the Department of Trade and Industry. Such a change would emphasise the importance of the industrial application of research and development; but it would also be seen, particularly by the "pure" scientists, as attenuating the link between those responsible in Government for education and those responsible for science, and I think that the "pure" scientists would be unhappy to see responsibility for "pure" science and responsibility for the ABRC taken away from the Department of Education with its responsibility for universities, and (as they would see it) lost in the much larger and harsher world of the Department of Trade and Industry. I suspect that it may be better to leave the division between the DES and the DTI as it is, but to strengthen the central co-ordinating links via the enhanced ACARD and the work of the Chief Scientific Adviser, Cabinet Office, himself.

RIA

ROBERT ARMSTRONG

10 March 1987

JOHN FAIRCLOUGH'S R&D PAPER OF 17 FEBRUARY

This paper is not about the amount spent on R&D nor the priorities of expenditure. It is a plea for a simpler, tighter management system for allocating and controlling the Government research effort.

The current system is both chaotic and anarchic with over a dozen Civil Departments, five Research Councils, the University Grants Committee and the Ministry of Defence all arguing for their own PES allocations and then deciding about how it should be spent. In particular, the research councils are like so many warring barons, each complaining that the other's expenditure is a waste of money. These feuds have become particularly vicious over recent years as the real Government allotment to R&D has been perceived as falling. I have set out in the appendix how these individual allocations of money are spent in terms of basic and applied research and development. They come together in the grand total of £4.6 bn spent in the last year.

Such a system for allocating R&D funds is highly dependent upon internal politicking, and the relative strength of individual personalities. It is unlikely to serve the two key principles which I recommend when dealing with investments for which the long term returns cannot be accurately quantified:

- a. The area selected must be done well preferably by building on past success. This is the opposite of the scatter-gun, or all or nothing, approach where we do a bit of everything so that no-one is offended.
- b. Once the expenditure is allocated it must be managed professionally and not left entirely to the whims of the scientists. The goal is that as much as possible goes into the field of study rather than in administration, meetings, conferences, and all the other forms of frittering which erode a badly managed budget like termites.

Fairclough's Proposals

It is unsurprising that Fairclough has attacked the structural tangle which underlies Government's allocation of R&D money. At IBM, which has an

outstanding track record for effective R&D, he supervised the work of 9,000 research staff, reporting to him through six levels of management. In essence, he now argues that there should be a single advisory body covering the whole R&D spectrum from basic research to industrial application. This advisory body (an enhanced form of ACARD) would provide the input to an executive allocating mechanism in the form of a cabinet committee (an enhanced form of E(RD)). The total R&D budget would then be allocated both by the category of activity, ranging from basic science to development, as well as by which organisation does the spending. Money would therefore be allocated and reported against according to a grid system as set out below and in more detail in the appendix.

R&D EXP. IN 1985/86 FIGURES IN £m	BASIC SCIENCE	APPLIED STRATEGIC	APPLIED SPECIFIC	DEVELOP- MENT	TOTAL
Civil Depts	47	214	430	294	984
Res Councils	283	193	62	-	540
UG Committee	487	106	77	-	670
MOD	-	35	348	2006	2388
Govt Total	817	548	917	2300	4582
88/89 level in 85/86 £m	791	525	886	2131	4334
% Annual Cutback (real)	3.3	4.6	3.7	7.8	5.8

Fairclough believes that this organisational change could be achieved with minimum disruption. For instance, the ABRC (the Advisory Board for the Research Councils), the UGC and the Civil Departments would remain the administrative system for disbursements once the overall grid pattern had been established.

Comment and Recommendation

Fairclough is asking for an annual science plan, analogous to a nationalised industry's corporate plan, which would be settled annually and run for several years ahead. Once the plan were accepted, the individual departmental allocations would be made by the Treasury as part of the PES procedures.

E(RD) and ACARD would become the overlords of Government R&D expenditure. It would therefore be essential for these organisations to be strengthened. In particular, ACARD would need to be seen to be served by outstanding

industrialists and academics. Furthermore, the Chairmanship of E(RD) would be a key matter best handled by a Cabinet Minister without any particular spending department allegiance, such as the Chancellor, the Chancellor of the Duchy, or even the Prime Minister in the capacity of Minister for Science.

Fairclough's plan achieves much of what the House of Lords Committee seek but without a new bureaucratic council imposed from above. There is much the paper does not address which will need to be examined soon. For example, there is a strong case for privatisation of the Government Research Laboratories which would take the contractor/customer principle to its logical conclusion. Indeed, Fairclough's excellent observations on the Ministry of Defence in Paragraph 13 all but make this case for the whole of military research and development! The overall level of the R&D budget itself must be decided as well as the future of specific projects like CERN and JET.

John Fairclough's proposals are therefore no panacea. They make a start on the organisational problem which obscures many fundamental questions about value for money. Fairclough's whole career has been in the management of scientific effort and here are some concrete proposals which should be heard. They will not be universally popular. In particular the DES may feel threatened. The Treasury will also be highly suspicious of any system which could eventually challenge its final allocation to Departments in the PES process. What is certain is that Fairclough has an impossible task in making any of this happen without your strong personal support for his plan. He will not be asking for this tomorrow but he will be expecting some view of whether you think this is where we should be going. I think it is.



GEORGE GUISE

Appendix: The Government R&D spend in 1985/86.

APPENDIX

R&D EXPENDITURE IN 1985/86 FIGURES IN £m	BASIC SCIENCE	APPLIED STRATEGIC	APPLIED SPECIFIC	DEVELOP- MENT	TOTAL
MAFF	6.4	22.2	46.7	46.4	121.7
DES (excl. UGC)	-	-	8.0	6.8	14.9
D/Em (excl. UKAEA)	5.0	9.0	7.7	13.3	34.8
UKAEA	-	39.4	130.9	19.4	189.6
DoE	-	4.2	33.6	6.4	44.2
ODA	-	-	24.0	0.0	24.0
DHSS	-	8.9	15.6	2.9	27.4
HSC	-	0.3	5.0	2.2	7.5
Home Office	-	0.3	12.8	1.0	14.2
DTI	4.3	112.6	73.2	177.3	367.4
D/Tp	-	1.1	22.8	0.8	24.7
NI Depts	0.5	2.1	9.6	1.5	13.8
Scottish Depts	13.5	8.0	27.0	6.5	54.9
Other	17.2	6.2	12.5	9.4	45.3
SUB TOTAL - CIVIL DEPTS	46.9	214.1	429.4	294.0	984.3
AFRC	29.1	20.4	-	-	49.5
ESRC	10.9	6.4	1.6	-	18.9
MRC	39.2	41.4	40.9	-	121.5
NERC	49.8	12.2	3.1	-	65.2
SERC	154.2	112.4	16.6	1.2	284.5
SUB TOTAL - RES COUNCILS	283.3	192.8	62.2	1.3	539.7
UG Committee etc	486.6	105.8	77.4	-	669.8
TOTAL - CIVIL R&D	816.7	512.8	569.1	295.2	2193.8
MOD	-	34.5	348.0	2005.8	2388.3
TOTAL - ALL GOVT	816.7	547.2	917.1	2301.0	4582.1



fo er.
cco.

10 DOWNING STREET
LONDON SW1A 2AA

THE PRIME MINISTER

10 March 1987

Dear Sir Francis,

Thank you for your letter of 26 February conveying the views of ACARD on the report by the House of Lords Select Committee on Civil R & D. The Government will be responding to the report in July and ACARD's comments will be fully taken into account in preparing our response.

I hope you will succeed in obtaining the support of industry and the City for your proposal on Exploitable Areas of Science. It is important that the Centre should be independent of Government and owned by industry. I would like you to write to me again on this matter once you can say what measure of support you have obtained.

I welcome the fact that ACARD is to undertake an examination of the civil implications of defence R & D and also that you are taking steps to examine the value of international collaboration. I look forward to your continuing advice on these issues.

*Yours sincerely
Margaret Thatcher*

Sir Francis Tombs

m



SR.
P. x h/pe

MR BEARPARK
10 Downing Street

9 March 1987

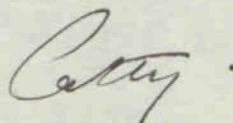
cc Mr Fairclough

Thank you for your letter of 5 March. I attach a draft reply to Sir Francis Tombs' letter for the Prime Minister. Sir Francis raises five issues:

- i. The need for some financial support from government for Exploitable Areas of Science (I enclose a copy of the consultant's report and the brochure being used in our discussions with industry). I would suggest that the Prime Minister should leave the door open until Sir Francis can report on success with industry.
- ii. Changes in the central structure in government for dealing with science and technology. ACARD has confirmed the Government is not seen to be giving science and technology the attention it merits as an essential component of economic growth. They would prefer to see the existence of the Ministerial Sub-Committee on Research and Development made public but realise there may be problems with that. Nevertheless, they would like a higher profile for the work which Ministers are engaged in on questions concerning research and development in order to encourage industry and the City to take the issues more seriously. However, I think it would be more appropriate for the Prime Minister to arrange for ACARD's comments to be taken into consideration in the preparation of a government response to the House of Lords Report than for any immediate response to be made on this issue in a letter to Sir Francis.
- iii. The level of industrial investment in R & D is too low in this country and ACARD has provided advice to the Sub-Committee on R & D on possible measures to improve this situation. So far, Ministers have been unable to produce any very constructive measures based on

that advice and when we report back to ACARD, as we will need to do in May, members are likely to be disappointed by the response. However, I think it is not a matter which need be addressed in the reply to this present letter.

- iv. Civil implications of defence R & D - I would suggest that the Prime Minister welcomes ACARD's decision to undertake an examination of this subject.
 - v. The need for a more rigorous questioning of the value of international collaboration - again, I would suggest that the Prime Minister merely welcomes ACARD's intention to carry this out.
2. John Fairclough has minuted the Prime Minister on the matters he would like to discuss on Wednesday, and some are relevant to Sir Francis' letter. He would not, however, seek to discuss Sir Francis' letter directly.
3. If you need further information, please let me know.



CATHY CUNNINGHAM

Encs



EL3BU4

DRAFT LETTER FROM THE PRIME MINISTER TO SIR FRANCIS TOMBS

Thank you for your letter of 26 February conveying the views of ACARD on the report by the House of Lords Select Committee on Civil R & D. The Government will be responding to the report in July and ACARD's comments will be fully taken into account in preparing our response.

I hope you will succeed in obtaining the support of industry and the City for your proposal on Exploitable Areas of Science. It is important that the Centre should be independent of Government and owned by industry. I would like you to write to me again on this matter once you can say what measure of support you have obtained.

I welcome the fact that ACARD is to undertake an examination of the civil implications of defence R & D and also that you are taking steps to examine the value of international collaboration. I look forward to your continuing advice on these issues.

Ind Policy



SUPPORTS + INNOVATION
PT 3



NOV 1960

From: The Rt. Hon. Geoffrey Parker, M.P.



House of Commons,
LONDON, SW1A 0AA.

7th March 1987

Dear Prime Minister,

R & D is the flavour of the
mouth. I thought you might like
to see a copy of an article on the subject
which 'the Times' have asked me to do
in view of their obsessive interest in the
subject. The article contains some home
truths.

The reason that you have not seen
me around the House very much of
late is because I have been out every
week in the regions carrying the news

of ~~technology~~ achievements into local companies & universities & onto local press, TV & radio. I find that people are much more interested in & aware of technology which affects their company & their school than in the generalities of national spending or R & D.

The response I have been getting is very positive indeed - lots of coverage, plenty of good schemes & good case histories. Another success story for the Government.

When you read this I will be in Korea leading a delegation of twenty six businessmen to British Informatics Technology Week.

From: The Rt. Hon. Geoffrey Pattie, M.P.



House of Commons,
LONDON, SW1A 0AA.

2

While I am away you may well be adjudicating on the Space Plan. All I would ask is that you keep in mind the great fascination and excitement that Space holds for the young — bettering grammar school, Surrey University — and their satellites.

I hope you will agree to see Roy Gibson the Director of the BNSE. He is internationally recognised as a first class person. He has prepared a series of options for you to consider. My advice would be to select his Option 4 — and show the

confidence in our technological future
that people have come to expect
under your Government.

Yours ever

Jeffrey

R & D INNOVATION AND WEALTH CREATION BY GEOFFREY PATTIE

The exploitation of technology has become a vital and major driving force for wealth creation and amongst the developed nations the richest are those which have made best use of it. Technology has become as important a component of economic development as human and natural resources and whilst its application cannot guarantee success, failure to apply it will ultimately lead to decline.

Already the rate of technological change has increased to the point where fewer and fewer organisations, however large or sophisticated, can acquire all the necessary expertise internally. This demands an end to the 'not invented here' syndrome, the need to develop awareness of the Science & Technology opportunities which exist outside the firm and where appropriate, the creation of strategic alliances and collaborative programmes.

The linkages between science and technology and economic performance have at their roots the process of innovation, a process in which R & D is increasingly a key feature; a view supported by the growing awareness of a strong relationship between the levels of industrial investment in R & D and industrial competitiveness. However, despite this evidence and the now wider acceptance that an adequate civil R & D

base is an essential pre condition for wealth creation in an advanced nation, there is concern that the current levels of UK industry's own R & D spend could be falling below that critical level necessary to achieve an international competitive edge. Analysis of the R & D spend by UK industry reveals that it funds only 36% of the total R & D in this country.

An international comparison of industrially funded R & D over the latest 20 years shows that whilst UK levels increased by 20% the figures in the USA and Germany doubled. It more than doubled in France and tripled in Japan, albeit from a low base. Industry in all our major competitor countries has therefore taken a sharply different view and backed R & D with its own money.

Economic success is only achieved when science and technology are exploited in the form of competitive products and processes in the market place. With a few notable exceptions the evidence suggests that much of UK industry has failed to exploit fully the wealth of available science and technology and seemingly will continue to fail, unless it starts to address the underlying problems.

The ability of our major industrial competitors to better exploit the opportunities offered by the large international science base and our own indigenous strengths in science therefore points to the conclusion that a major UK industrial weakness lies in its management of technology.

An effective R & D capability at the level of the firm is not simply a case of providing a technical function or even ensuring that all functions in a firm have a minimum level of technical competence, but ensuring that technology is fully integrated into the organisation. Ultimately the major responsibility for this rests with the senior executives in the organisation.

Of course the process of innovation leading to wealth creation is not achieved through R & D alone, important as it is. Innovation involves all those activities needed to bring new products and processes successfully to the market place and will include R & D, licensing, product and design engineering, manufacturing and marketing, and good industrial relations. It is critical to recognise their interdependence since failure in any one could result in an inability to maximise the market opportunity.

And what of Government's role? Just as it is the principal responsibility of senior management in industry to create a conducive environment for innovation so it is the Government's aim to provide a framework and climate in which business can prosper.

Although Government is fully aware of the need to secure higher levels of industrial R & D it has recognised that decisions on the nature and extent of such activity must be based on a sound commercial footing. Industry is much better placed to make these decisions. Nevertheless there are circumstances where defects or failure in market mechanisms do justify Department of Trade and Industry support for industrial R & D, ie where projects are particularly risky for a firm to take them on alone, where they lack relevant information, where the benefits of R & D are too diffuse for any one firm to have sufficient incentive to undertake it, to aid competition and maintain a UK capability in important technologies and markets.

Our failure to capitalise fully on a science base which has a world wide reputation has been of particular concern to the Department and we have taken the lead in a number of Government initiatives to bridge the gap between the research activities in higher education and those in industry. Probably the most notable of these has been the

£350m ALVEY programme, although more recently the Government announced a new initiative called LINK to stimulate and accelerate the commercial exploitation of research. LINK will generate a range of collaborative programmes between the scientific community and industry to cover the entire spectrum of science-based technology. The cost of the scheme will be at least £420 million over five years, shared equally by Government and industry.

The Government is also working hard to improve the effectiveness of the Research programmes in the European Community. The current argument with the Commission has more to do with quality of the programmes than it has about budgets. As the present Framework Programme is underspent due to blockages in the system and inadequate monitoring it is ridiculous for the Commission to assert that the only way to head off the Japanese challenge is to have a higher budget. Highly targetted and focussed research programmes closely linked to products on sale in a genuine internal market are the answer.

There are of course limits to the contribution that Governments bring to bear on the process of wealth creation and in many of the areas already indicated the primary responsibility rests with industry itself as the recent House of Lords Select Committee report on civil R & D has

made clear. Our competitors are already well ahead in their approach to the wealth creation process particularly in the areas of investment in R & D and its exploitation. They will continue to increase this lead unless UK industry takes on its share of the responsibilities and responds quickly and effectively.

1987

5 March 1997

I should be grateful for your advice on the attached letter from Sir Francis Tombs. Is this one of the things John Fairclough will be discussing next week, and will you be providing a draft reply?

(ANDY BEARPARK)

Mrs Cathy Cunningham,
Cabinet Office.

CCBG



DEPARTMENT OF TRADE AND INDUSTRY
1-19 VICTORIA STREET
LONDON SW1H 0ET

Telephone (Direct dialling) 01-215) 5147
GTN 215) 5147
(Switchboard) 01-215 7877

From the Minister of State
for Industry and Information Technology

RT HON GEOFFREY PATTIE MP

Rt Hon Sir Geoffrey Howe QC MP
Secretary of State
Foreign & Commonwealth Office
Whitehall
LONDON
SW1A 2AH

CP

3 March 1987

Dear Geoffrey

CDP 413.

EC R & D FRAMEWORK PROGRAMME

In my letter of 12 February ^{at Har} setting out the line I proposed to take at the Research Council on 23/24 February, I undertook to report to colleagues on its outcome.

Discussion centred on a compromise proposal from the Belgian Presidency which proposed a Framework Programme for 1987-91 of 5.765 becu of new programmes, to which would have to be added 1.084 becu of existing commitments. This represented an 800 mecu reduction in the Commission's proposal and the Presidency suggested that a further 700/800 mecu reduction might be achieved in practice if the Council accepted that some new commitments would fall after 1991.

I took the line that the United Kingdom had no objection to a distinction being made between new and existing commitments although both would clearly have to be counted in the final total. We could also consider an overhang of commitments after 1991 provided we received firm and unambiguous undertakings from the Commission that they would respect this. But even if this were done, the Presidency proposal remained around 1.8 becu higher than the United Kingdom could accept. I gave indications of where we would wish to see further reductions in order to achieve our 4.2 becu position.

MR1/MR1AAF



Before the Council I held bilateral talks with my French (M. Valade) and German (Herr Riesenhuber) colleagues. Both agreed that the Belgian compromise was unacceptably high and that this Council was not the occasion to indicate any specific degree of flexibility. They stuck to this position throughout the Council and, after several rounds of discussion had shown that there was no basis for agreement, the Presidency decided to adjourn until 24 March.

M. Valade told me privately, however, that he did have room for manoeuvre above 4.2 becu. He said that he would wish to use his flexibility soon to counteract domestic criticism but wanted to act in concert with us and Germany. Herr Riesenhuber told me that his formal position remained at 4.2 becu, but that he intended to seek flexibility in order to reach a settlement at the next Council. But he too wanted to continue in step with us and France. He suggested that officials from our three countries should meet to consider the basis for a continuing joint approach.

I made it clear to both M. Valade and Herr Riesenhuber that our position remained 4.2 becu. But I agreed that I would report the position and that it made sense for officials to have discussions on the scope for achieving agreement on both the overall Framework and the individual programmes within it at a level acceptable to all three of us.

These talks have now been arranged for 4 March and our officials are in touch with the Cabinet Office about arrangements for any further Ministerial discussion which may be required thereafter.

I am copying this letter to Peter Walker, Kenneth Baker, Norman Fowler, John Moore, John MacGregor, other Members of OD(E) and to John Fairclough in the Cabinet Office.

A handwritten signature in dark ink, appearing to read 'G. Pattie', with a horizontal line underneath.

GEOFFREY PATTIE

IND PAC - Support + Innovation Pt 3





CABINET OFFICE

Qn 0744

70 Whitehall London SW1A 2AS Telephone 01-~~232~~ 270 0109

The Rt Hon Margaret Thatcher MP
The Prime Minister
10 Downing Street
London SW1

26 February 1987

Dear Prime Minister,

The Council had before it on 29 January the Report of the House of Lords Select Committee on Civil Research and Development. Whilst not agreeing with all of the opinions expressed, or the recommendations made, ACARD regards the Report as a useful and constructive contribution to the debate about national policies for science and technology. ACARD has a particular interest in a number of the issues discussed in the Report.

The first concerns Exploitable Areas of Science (EAS). The Select Committee have welcomed this ACARD report. They share the view that the United Kingdom's future depends on science-based innovation and that a new approach is required to ensure that national research is encouraged in areas of commercial potential. ACARD has now received the final report of the consultant it retained to make proposals for implementation of the EAS process and I will shortly be hosting the first of a number of dinner meetings with senior industrialists and financiers.

Informal discussions so far have encouraged me to believe that industry and the City will recognise the potential value of this proposal and will be prepared to give it substantial financial backing. The Select Committee recommend that Government should contribute. Council agree that the participation of Government will be crucial to its success. Financial support from Government amounting to no more than 25% of the total setting up costs - which we estimate at £5 million - would recognise its value in informing Government's own priorities for R & D expenditure and would signal the willingness of Government actively to engage in the process with industry, and those responsible for making investment decisions.

This process should complement and feed into decisions by Ministers on research and development aimed at greater wealth creation and improvements in the competitiveness of British industry through ACARD. It should also assist the Research Councils in establishing priorities in the national interest and inform the decisions of the Department of Trade and Industry for the improvement of technology.

The second, related, issue concerns the central structure in Government for dealing with science and technology. It is crucial for the economic health of this country that national science and technology strategies are developed and applied over the long term. In order to command the confidence of industry, which at the end of the day must realise those strategies, there need to be high level arrangements at the centre of Government. ACARD has already been asked to advise the Committee of Ministers which is considering R & D matters and is therefore aware of the strengthened arrangements which now exist. However, the lack of publicity given to this change minimises its impact on industry and on the priority likely to be given to investment in research and development outside Government.

There might well be some merit in an expanded remit for ACARD, or for ACARD to be incorporated into a new Council for Science and Technology as the Select Committee Report recommends, but at the same time there is a need for a more formal, and open, input into Government discussions on priorities on a regular basis which might be satisfied if you felt able to chair a regular meeting, say once a year.

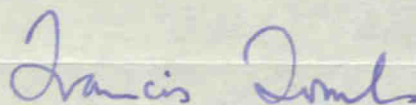
ACARD recognises the need to increase the level of industrial investment in R & D which in turn requires the City institutions and shareholders to recognise the long-term value of such investment. ACARD has already offered advice on these difficult questions to Ministers and we await the outcome with interest.

The Report deals briefly with the civil implications of defence R & D and calls for the proposed new Council to undertake a thorough examination of this subject. ACARD, with the encouragement of the Secretary of State for Defence, has already established a study group to undertake such an examination.

The Report deals rather cursorily with the important matter of international collaboration, except in relation to the European Community. It is the view of ACARD that there is a need for a more rigorous questioning of the value of international collaboration and of the balance between collaborative and national programmes. ACARD therefore intends to establish a standing sub-committee so that it may have the capacity properly to address that part of the work entrusted to it in its terms of reference - "To advise the Government and publish reports as necessary on - the role of the United Kingdom in international collaboration in the field of applied research, design and development related to technology".

I hope you will find these comments helpful.

Yours sincerely



SIR FRANCIS TOMBS

Andy Bearpark

Yes : many thanks
f

MR. GUISE ✓
POLICY UNIT

We discussed John Fairclough's minute of 17 February about research and development. The Prime Minister has seen this, and has agreed to discuss it with Mr. Fairclough at 1030 on 11 March. I assume you will also want to be present. ✓

AS

(P.A. BEARPARK)

26 February 1987



file
DA

10 DOWNING STREET
LONDON SW1A 2AA

From the Private Secretary

MR. UNWIN
CABINET OFFICE

I have arranged a meeting for 1030 on 11 March for John Fairclough to see the Prime Minister and discuss his minute of 17 February about research and development. I gather you or Robert would also like to be present. Do you wish to submit a short note for the Prime Minister to see before the meeting?

BF ||

(P.A. BEARPARK)

26 February 1987

John

Prime Minister

cc. George Givins
back to me please

Would you like me to arrange

a meeting with John Fairclough to discuss these points?

10/1/2
me

W0427

PRIME MINISTER

Yes me

10/19/2

17 February 1987

I have been in post for 8 months, and I am now in a better position to reach a considered judgement about the issues and opportunities we face in securing greater economic contribution from our research and development activities. Additionally, the House of Lords have recently published their report on Civil Research and Development which I summarise in the attached Appendix.

2. This minute is to give you my assessment of the way forward. After you have considered the steps I propose, it would be helpful to meet and discuss any questions which you have.

3. We need a renaissance of our industrial prowess through the contribution from research and development to again become an effective industrial competitor to Japan, Germany and the United States. I offer the thought that this goal should be championed by yourself and become central to your future policies as you have already championed the control of inflation. We need a culture change in industry, science and the Ministry of Defence for reasons I give below. Your personal identification with this goal will be critical to such a task.

4. E(RD) has succeeded in making a number of positive changes, the most important of which is to require the Ministry of Defence to establish a proper management and control system for research and development in order to implement the decision taken by E(A) under your Chairmanship last year to constrain defence spending in R&D to the 1985 projections.

5. A major issue which has not yet been addressed is the establishment of overall priorities for Research and Development both for science and technology leading to a re-allocation of resources among departments. I have in mind the need for regular examination of options which would allow you and

your colleagues to set priorities for influencing resource allocations for future years. We need to be able to look at all the various departmental expenditures on research and development together, in what might be called "the R & D Budget", though of course individual Departments' expenditures would continue to be included in their own PES programmes and departmental votes.

6. I would recommend against the House of Lords recommendation for a Council on Science and Technology because new machinery is unnecessary. Rather, I would prefer to see existing machinery enhanced to answer the underlying issue which the Lords have identified and with which I concur.

7. I recommend that the role of the Advisory Council on Applied Research and Development be extended to cover basic and strategic science in addition to its role in applied research and development. This would create an advisory body that would look across the whole subject and so balance our priorities between fields of endeavour which underlay the current division between basic and applied science. Council representatives from the science community will be required as well as the participation of the Royal Society. The number of members should be no more than 20, an increase of 4 and further re-balancing would be accomplished by replacing existing members when their terms expire. The Council should be given a new name, to mark its change of function and identity, but it should not be considered or promoted as a new or additional body.

8. The expanded ACARD could be invited to produce an annual report (which would be for publication in due course) which would recommend priorities for science and technology. This could be considered by E(RD), and the report by ACARD, together with E(RD)'s comments, would be submitted to you. The result of this process would be taken into account in the Public Expenditure Survey discussions. The eventual outcome could be published as a part of the Public Expenditure White Paper.

9. The enhanced ACARD could provide periodical advice to E(RD) across the whole spectrum of science, technology and industrial applications, so that sectorial interests are balanced and integrated and the Chairman could request advice on relevant issues which E(RD) will consider. The Exploitable Areas of Science mechanism proposed by ACARD will, I hope, become an important contributor to this activity.

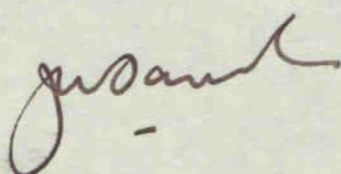
10. This strengthened machinery would give you a new forum to address the issues facing science, technology and industry and also allow the existing machinery to be made more effective. The main objective is to provide the means of annual examination of the whole environment rather than dealing with individual issues out of context which is a major failing of the current system. We face fundamental problems in industry, science and the MOD, all of which interrelate. I will deal with each of these sectors in turn :-

11. Industry: Productivity has been improving in British Industry; but apart from a few enlightened companies, industry is not investing in new product and process development with real financial commitment. The scale of investment required, to be internationally competitive, is increasing whereas Research and Development investment from the private sector is declining as is the government support of it. It is of paramount importance that we are internationally competitive in more markets and the principal driving force must come from properly focused research and development and supported by the City.

12. Science: As a nation we cannot afford, even given realistic increases to the UGC and Research Councils budgets, to engage in world class science in every subject and in every University. Participation in strategic scientific research to world class standards is increasingly capital intensive. The work generally needs to be organised on a team basis in order to achieve economic benefit from the capital investment. However, we have neither a mechanism of selection, which integrates sectorial interests, nor a management system for science and engineering with sufficient executive authority to rationalise the current system. A vital and inseparable component of such a system is the development of people with skills to serve academia, industry, commerce and government and must be considered with equal priority to the other factors.

13. Ministry of Defence: We have two industrial cultures in the country; the defence industry and the rest. The defence industries believe that Government should finance their research and development. Further, the Ministry of Defence tradition is to specify and control their detailed technical requirements to a level which leaves little incentive for the defence industry to undertake internally financed research and development. Additionally, a great deal of research and development of technology and new materials is done within Government laboratories with a poor record of technology transfer to civil exploitation. If more of this research and development were undertaken by private industry, on a speculative basis, with some help from the MOD, then private industry would ensure that commercial applications was a basic consideration. There would be two benefits; we would have a more cost effective defence effort while improving the chances of broad commercial exploitation.

14. I am convinced that Government needs to consider the issues facing science and industry as a whole and together, so that account can be taken of the way in which the issues relate to each other. A periodic review of priorities will not only improve the quality and timeliness of decisions but allow us to shift resources and concentrate our efforts.



JOHN W FAIRCLOUGH
Chief Scientific Adviser

SUMMARY OF THE MAIN POINTS OF THE HOUSE OF LORDS SELECT COMMITTEE
REPORT ON SCIENCE AND TECHNOLOGY:
CIVIL RESEARCH AND DEVELOPMENT

In 1981 the Select Committee published a Report - "Science and Government" and in response the Government published a White Paper (Cmnd 8591) which laid the foundations for the present machinery of Government.

2. Both the present and earlier Reports have been helpful and constructive in the main and the present Report recognises the substantial moves by Government since 1982 to adapt its machinery and pursue a policy which recognises the importance of science and technology and its successful exploitation for the competitiveness of UK industry. The Report accepts, rather uncritically, the evidence offered to them about low morale in the science community, an increasing brain drain and pessimism in industry - all of which lead the Committee to propose an increase in expenditure on research and development (R & D) by Government. But they recognise that a large share of the responsibility rests with industry which should increase its own investment in R & D and the City which should adopt a less short term view of such investment.

3. The Committees' main concerns are

- that the very high proportion of Government funded R & D going to Defence has undesirable consequences for UK industry
- the need for a definable policy for the support of R & D; for stable conditions and coherence in decision making; for realistic targets and effective management of R & D

4. These lead the Committee to propose on Central Structure

- close identification of the Prime Minister with the science and technology dimension of policy
- a specific Minister in Cabinet, under the Prime Minister, designated to speak for science and technology

- establishment of a Council for Science and Technology (CST) formally chaired by the Prime Minister, with the designated Cabinet Minister as Deputy Chairman with ACARD absorbed into the new Council.

5. On other matters they propose

- a gradual move towards making the ABRC an executive body and greater harmonisation between the 5 Research Councils (ABRC/DES would claim this is already happening)
- endorsement of the Science Budget and the customer/contractor principle for most Departmental funding of R & D but the introduction of a third method of funding for the strategic research which is of most significance to the UK's future (this relates to the next item)
- support for ACARD's proposals for a continuous process for identifying exploitable areas of science and a proposal that Government should assist in its funding to get it started and test its effectiveness (Sir Francis Tombs is holding discussions with industry and the City to seek financial support. He is expected also to seek a minority proportion from Government)
- recognition of the poor performance of UK industry in funding R & D and of the short-termism of the City and a plan for Government to make forms of support available "with a judicious choice of targets" to help industry help itself (E(RD) is already considering ways to encourage greater private sector R & D)
- the need to improve information about private sector R & D (DTI have this in hand but are reluctant to legislate on disclosure of R & D expenditure in Annual accounts)
- a claim that DTI support for industrial R & D is not enough, is spread too thinly and not targetted precisely (some of this criticism is shared by ACARD)

- a recommendation for tax incentives to encourage more industrial R & D (Treasury have this under review)
- the need for measures to assist new, small companies to grow (ACARD is preparing a report on this topic)
- the need for further collaboration between higher education and industry and for closer links between Government laboratories and universities (the recently announced LINK Programme brings together all three)
- the need for greater selectivity between areas of science and universities/departments (ABRC is preparing a strategy document which will deal with this issue)
- the need for a positive attitude towards international collaboration in R & D and for increasing the inward flow of technology.

6. In summary, the Committee make no radical proposals for change and what they do propose fits well with initiatives already taken (eg LINK and the creation of the Cabinet Sub-Committee on Research and Development) or under consideration. There is a good story to tell and material for a White Paper which would be well received by industry and the scientific community. There is, however, a need for Departments to stop dragging their feet on some issues if the White Paper is to carry conviction.

010
CONFIDENTIAL



DEPARTMENT OF TRADE AND INDUSTRY
1-19 VICTORIA STREET
LONDON SW1H 0ET

Telephone (Direct dialling) 01-215)
GTN 215) 5147
(Switchboard) 01-215 7877

From the Minister of State
for Industry and Information Technology

RT HON GEOFFREY PATTIE MP

Rt Hon Sir Geoffrey Howe QC MP
Secretary of State
Foreign and Commonwealth Office
Whitehall
LONDON
SW1A 2AH

1. EDP *exp* 13/7.
2. N/BPM

12 February 1987

See diary

1987-1991 EC R & D FRAMEWORK PROGRAMME

You will know that there is now to be a Research Council on 24 February (preceded by a dinner for Ministers on 23 February) in addition to the Council scheduled for 24 March. The 24 February Research Council will be devoted solely to the new Framework Programme.

It would be useful if I set down how I see the UK negotiating position for this Council. In doing this I have taken into account discussions with Mr Verhofstadt, who called on me yesterday in his capacity as President of the Research Council.

Mr Verhofstadt proposes to send a paper to his Research Council colleagues before 23 February. This will be limited to outlining a possible approach to reaching a compromise on the new Framework programme. He also intends to table a more formal proposal at the dinner for Ministers. It is unclear how much detail this second paper will contain on costs of the overall Framework and of the individual action lines. Mr Verhofstadt currently plans to discuss the overall approach at dinner and the figures in formal session on 24 February.

FE3/FE3AAW



If the Presidency does table a formal compromise on 23 February, we have to accept that this may well attract the support of a substantial number of Member States. However, it is the positions of the French and Germans which are crucial to the UK. Advice from our Embassies in Paris and Bonn is that the French and Germans will stay firm at or about 4.2 becu provided that we do so. But we know that they were contemplating moving to 5 becu around the time of the 9 December Research Council and their positions may again weaken during 23/24 February if the Belgian Presidency tables a compromise, at or close to this figure, which attracts the support of most other Member States.

I will abide by the E(A) decision on 20 November to negotiate for a new Framework Programme costing not more than 4.2 becu over the 5 year period of the Framework. This may mean that the UK will be isolated, although I will be urging my French and German colleagues to continue to remain firm on or about 4.2 becu. However, I believe that, for political and practical reasons, at least two Research Councils will be required before final agreement is possible on the new Framework Programme. I therefore see no overriding disadvantage to the UK in adopting this position. I shall of course report back to colleagues on the outcome of this Research Council, at which time we may need to review how to handle the next Research Council on 24 March.

Meanwhile, it remains crucial to my Department that we get the question of the redistribution of the EuroPES baselines satisfactorily resolved as envisaged by E(A), ie that the baselines should be changed to "more accurately reflect the actual distribution of R & D effort within the new Framework Programme". John MacGregor is of course due to follow this up with Paul Channon and with Peter Walker. We must try to conclude this before the 23/24 February Research Council. I am glad to learn that John MacGregor is arranging a meeting for this purpose.

I am sending copies of this letter to Peter Walker, Kenneth Baker, Norman Fowler, John Moore, John MacGregor, other Members of OD(E) and to John Fairclough in the Cabinet Office.

GEOFFREY PATTIE

FE3/FE3AAW

010
RESTRICTED



CCBG

MINISTRY OF DEFENCE WHITEHALL LONDON SW1A 2HB

TELEPHONE 01-218 9000

DIRECT DIALLING 01-218

MO 26/1L

27 December 1986

Dear Secretary of State,

CD 27/11

E(RD) REMITS TO THE MINISTRY OF DEFENCE

Thank you for your letter of 10th December.

WILL REQUEST IF REQUIRED


I am sorry about the delay in completing the paper commissioned by the E(RD) meeting at the end of September. In fact, good progress was made during October and November with the analysis of my Department's development spending and my officials were able to show that analysis to John Fairclough, and receive comments from him, before the end of November. Unfortunately, however, those involved have also been advising me on airborne early warning and the need to give priority to that precluded further progress during December. Work will be resumed after Christmas and I will ensure that the necessary papers are available for E(RD) in January, but I think it would be wise to plan for a meeting at the end of that month rather than the middle.

The Rt Hon Paul Channon MP

RESTRICTED



I am sending copies of this letter to the Prime Minister,
other members of E(RD), Sir Robert Armstrong and Mr Fairclough.

Yours sincerely

(Private Secretary)
George Younger

(Approved by Mr Younger and
signed in his absence.)



file

DTB

10 DOWNING STREET
LONDON SW1A 2AA

From the Private Secretary

10 December 1986

LINK

Thank you for your letter of 8 December. The Prime Minister has noted the contents of this, and the necessary arrangements have been made for the PQ to be answered today.

I am copying this to the Private Secretaries of the Secretaries of State for Employment, Scotland, Northern Ireland and Wales, and the Chancellor of the Duchy of Lancaster.

P A BEARPARK

Miss Catherine Bradley
Department of Trade and Industry

6

Prime Minister (1)

cc B/S
cc B/S



Content with the attached text of the proposed PQ
DEPARTMENT OF TRADE AND INDUSTRY
1-19 VICTORIA STREET
LONDON SW1H 0ET
Telephone (Direct dialling) 01-215 5422
GTN 215
(Switchboard) 01-215 7877

PAY 8/12

PS/ Secretary of State for Trade and Industry

RESTRICTED
A P Bearpark Esq
Private Secretary to the
Prime Minister
10 Downing Street
LONDON SW1

8 December 1986

cc. Zuckers
to back to me about file

Yes me

Dear Andy

LINK

at-trap

Thank you for your letter of 2 December.

My Secretary of State agrees that as large a proportion of existing Government R&D programmes should be associated with LINK as possible. E(RD) agreed that in addition to £200m over 5 years for LINK, Departments' existing collaborative programmes will be associated with LINK.

On the question of small and medium sized firms, it is the firm intention that every opportunity should be given to allow their full participation.

We propose that the announcement be made on Wednesday, 10 December by means of an arranged PQ as suggested by the Prime Minister. This will be followed by a DTI/DES Press Conference at 4.00pm on the same day led by Mr Pattie and Mr Walden. John Fairclough will then also be able to refer to LINK when the Cabinet Office Annual Review of R&D is launched at a Press Conference the following day.

... I attach a draft PQ and answer which has been agreed with DES. Please let me know if there are any difficulties with this.

Copies of this letter go to recipients of yours and to the Private Secretaries of the Secretaries of State for Employment, Scotland, Northern Ireland and Wales, and the Chancellor of the Duchy of Lancaster together with a copy of your letter.

Yours sincerely

Bradley

CATHERINE BRADLEY
Private Secretary

17 19 86
BOARD OF TRADE
BICENTENARY

Encl

JF4AKH

SUGGESTED TEXT FOR ARRANGED PQ AND WRITTEN ANSWER

Q. TO ASK THE PRIME MINISTER WHAT MEASURES THE GOVERNMENT IS ADOPTING TO IMPROVE THE EXPLOITATION BY INDUSTRY OF PUBLICLY FUNDED RESEARCH AND DEVELOPMENT.

A. It is essential that advances in science, whether they occur in universities, Government laboratories or industry, are rapidly exploited to develop new products and improved services for sale by British industry and commerce in world markets. To this end we are giving particular priority to the development of improved partnership arrangements between industry, Government Departments and research institutions of all kinds. I attach great importance to this work which will receive further impetus under an initiative called LINK. Under LINK Government will spend £200m over the next five years on research programme which will bring together industry and publicly funded scientists on a collaborative basis. Industry will meet at least half the cost of these programmes which will cover a wide range of new science and technology. All Government Departments with a significant R&D expenditure will take part in LINK but the principal sponsors will be the Department of Trade and Industry and the Department of Education and Science, who will be announcing today further details of the programme.

The total of Government expenditure on R&D is very substantial both absolutely and as a proportion of the national income and bears comparison with all other technologically advanced countries. But the excellence of British science has not been matched by a rapid pace of application by British industry of the newly emerging technologies. Nor is the private sector investing as much of its own resources in R&D in this country as are our more successful competitors. For its part the Government is therefore actively reviewing its R&D programmes across all Departments, defence as well as civil, with the objective of increasing their contribution towards improving the efficiency, competitiveness and innovative capacity of British industry. Both the Advisory Council on Applied Research and Development (ACARD) and the Advisory Board on the Research Councils (ABRC) are assisting in this exercise and an Assessment Office on Science and Technology has been established in the Cabinet Office under the Chief Scientific Adviser.



03 DEC 1986

10 DOWNING STREET
LONDON SW1A 2AA

From the Private Secretary

2 December, 1986.

Dear Richard

The Prime Minister has seen your Secretary of State's minute of 24 November reporting on the work of the Ministerial Sub-Committee on Research and Development. She was pleased to note that full agreement has been reached on the terms on which all Departments with major R & D programmes will participate in LINK. She notes that, the objectives of LINK are not new, and that it will build on existing programmes and will reshape Departments' spending patterns on R & D in order to give greater emphasis to their contribution to wealth creation. In this context, she has commented that £200 million over 5 years is rather low in relation to total Government spending on Research and Development which is currently of the order of £4300 million a year. She thinks it important that as large a proportion as possible of existing Government programmes should be associated with LINK.

The Prime Minister would also like to be assured that every effort will be made to see that small and medium size firms are able to participate fully in LINK.

The Prime Minister is content to make the announcement herself, but has concluded that there will be no suitable speech to include it in in the next few weeks, and would therefore prefer to make it by way of an arranged Parliamentary Question. I await your further advice on this.

I am copying this letter to the Private Secretaries to the other members of E(RD) and to Sir Robert Armstrong and John Fairclough.

Yours ever
Andy

A.P. Bearpark

Michael Gilbertson, Esq.,
Department of Trade and Industry.

* Dr Aram RTP
MS Zimm RTP

TO DR KEDDIE RTP	
FOR ACTION AND DRAFT ONLY IF APPROVED	COPIES TO PS/GP PS/SBT Mr Roith Mr Macdonald Mr Knight Mr Gibson Mr Wilson Mr O'Connell Mr Morant Mr Williams Mr Russell Mr Howard Mr Brown
PLEASE BY: ASAP	
IF MET PLEASE ... NE	
ANN HEATH ON 215 5422	

IND POL Support + Innovation PT3





pa
pdy

00

70 WHITEHALL, LONDON SW1A 2AS

01-233 8319

From the Secretary of the Cabinet and Head of the Home Civil Service

Sir Robert Armstrong GCB CVO

Ref. A086/3398

8 December 1986

Dear Mark,

Annual Review of Government Funded R & D 1986

The Government's response (Cmnd 8591) to the 1981 House of Lords Select Committee on Science and Technology report "Science and Government" announced the introduction of a system of Annual Reviews of Government Funded Research and Development. The Fourth Annual Review is to be published on 11 December at 11.00 am. A copy of the Review is attached.

in folder

As in previous years, I am sending copies of this letter and the attachment to Private Secretaries of all members of the Cabinet.

Yours ever,

Timewoolley

(T A Woolley)
Private Secretary

M E Addison Esq
10 Downing Street

CCBG



W0329

MR BEARPARK ✓ PDS

cc Mr Woolley

5 December 1986

1986 ANNUAL REVIEW OF GOVERNMENT R & D.

The Prime Minister gave her agreement to publication of the Annual Review in July and will be announcing its publication on 11 December in a written answer in the House. I will be holding the usual Press Conference at 11.00am on the same day. I have also been invited to write an article for the Financial Times to appear on or soon after 12 December to highlight some the main issues in science and technology.

2. My purpose in writing the article is to demonstrate Government's awareness of these issues and its concern to act on them. As the Prime Minister herself pointed out, after her discussion in May with Sir George Porter, there is a lack of understanding of the Government's policy on science and technology and we need to overcome this with improved presentations.

3. You will wish to know of my intentions and I enclose a draft of the article.

JOHN W FAIRCLOUGH
Chief Scientific Adviser

att.

DRAFT ARTICLE FOR THE FINANCIAL TIMES ON PUBLICATION
OF THE 1986 ANNUAL REVIEW

The first Annual Review of Government Funded R & D was published in 1983. It was a slim volume of only 52 pages and was described in NATURE as "ostentatiously laconic". The 1986 Review, published on 11 December, runs to 183 pages but I hope it will not be described as "ostentatiously prolix". The purpose of these Annual Reviews has been to provide sufficient information for a horizontal view to be taken of total Government R & D expenditure. This was a recommendation of the House of Lords Select Committee on Science and Technology in its first Report in 1981. The Advisory Council on Applied Research and Development (ACARD) were invited by the Government to contribute to this task and to offer advice each year on the picture that emerges. Because their advice is confidential, ACARD is able to comment freely. It is no secret however that their main recommendation has been for greater attention to be paid to the economic benefits that flow from investment in R & D and for closer collaboration between the different Departments funding R & D programmes, academia and industry. [This is also the prime objective of the LINK programme which the Prime Minister announced on _____].

2. In the rest of this article I deal with a number of the current R&D policy issues facing both industry and the Government. [Many of the issues are ones on which Sir Francis Tombs and Sir David Phillips, the respective Chairmen of ACARD and the Advisory Board for the Research Councils (ABRC), have commented in their joint report published on _____]. There will always be a debate on issues like these and on R&D priorities generally. And so there should be, as technologies, requirements and markets change. The importance of the Annual Review is to ensure that that debate is well informed. That information will be supplemented shortly. A new Science and Technology Assessment Office is being established under my direction to look at what is being achieved from the Government's R & D expenditure. The Annual Review sets out what the Government is spending; the Assessment Office's task will be to work with Departments in trying to provide a clearer picture of the results and benefits of that expenditure and of how far targets are being met. How much of

the resultant information will be in a form that can be incorporated in future Annual Reviews or published elsewhere remains to be seen. Outputs are much more difficult to quantify than inputs. But the attempt is being made, in the expectation that this will contribute to the debate and to the decisions on R & D priorities.

The Balance between Civil and Defence R & D

3. The overall picture has not changed substantially between 1983/84 and 1985/86. (See Table). In total Government is spending nearly £200 million a year more on R & D (at constant prices), although marginally less is being spent by Civil Departments whilst £198 million more is being spent by the Ministry of Defence. This balance between defence and civil R & D is receiving a lot of attention. The Ministry of Defence R & D programme must, of course, be dependant to a very large extent on its programme of procurement to meet the needs of the armed forces - and decisions on R & D cannot therefore be taken in isolation. Nevertheless, two questions have to be addressed with respect to R & D - whether the scale of resources, in terms of money and skilled manpower, being devoted to defence is pre-empting resources which could be used to greater economic advantage on civil R & D and whether the technologies being developed for defence purposes could not be transferred and exploited more effectively by civil industry. Both of these questions are receiving attention and I touch on them later in this article.

The Science Base

4. Another important debate, to which ACARD has contributed significantly, concerns the extent to which basic science can be "pulled-through" into marketable products, processes and services. Despite the cutbacks in the Higher Education sector, about which many complaints are heard, Government expenditure on the Research Councils and UGC research taken together has risen marginally from £1145 million in 1983/84 to £1152 million in 1985/86.

5. I acknowledge that basic research in this country is of first rate quality in many fields and can compete favourably with all other advanced nations. It

has provided many discoveries and developments which have enabled industry to take advantage of significant economic opportunities but it has to be said that British industry has not availed itself of enough of those opportunities quickly enough to gain the competitive advantage offered. It is not easy to be precise about the reasons for this low level of exploitation of our strong science base but ACARD has argued, in its report on "Exploitable Areas of Science", that profitable innovation requires the matching of what is possible in scientific and technological terms with what is commercially desirable and that this can only be achieved by a shared vision between industry, science and Government of the directions in which to develop this particular dimension of science policy. ACARD therefore recommended "that a process should be established for identifying exploitable areas of science, which has some certainty of continuity, for the long-term economic health of the country." This recommendation was welcomed and supported by the Prime Minister and work is underway to establish the process.

6. Measures are also being designed to encourage an increased level of joint R & D between industry, academic and Government scientists. There are already a number of programmes aimed at this - they include the Cooperative Research Grants scheme operated by the Science and Engineering Council, the Joint Optoelectronics Research Scheme and the Alvey Programme in Information Technology. But I believe that a larger, more comprehensive effort is needed which will foster strategic areas of scientific research, which will lead to a real increase in investment by industry in R & D and ensure that the transfer of scientific knowledge into industry becomes increasingly focussed and coordinated.

7. There will be many who see this concern with the need to 'exploit' the science base as detrimental to scholarship and to the freedom scientists need to pursue independent lines of enquiry. I think they are wrong. I believe that this country should have a substantial and secure core budget for truly fundamental science, and this it has, but I think also that in addressing problems, which often cross the boundaries of scientific disciplines, posed by economic and social needs conveyed by Government and industry, science will be strengthened and as it is applied more quickly it will also develop at an

increased pace.

The Purchasing Power of Government

8. There is an associated question which is, in my view, of very considerable importance and that is - what is the extent to which Departmental spending on R & D could contribute more effectively to wider economic benefits. Each Department has an R & D programme, which may include both in-house and contracted-out work, undertaken in support of its own objectives. These cover four main primary purposes in addition to the advancement of science - policy formulation and implementation, improvement of technology, procurement decisions and statutory duties. [use slide] The dominant primary purpose is procurement, which in 1984/85 accounted for £2158.7 million, or 50.6% of the total. The purchasing power of Government is considerable and is, indeed, dominant in some sectors of industry. This is particularly the case with Defence in aerospace and electronics, both high tech areas with enormous international market potential. But it is also true of the National Health Service in medical equipment.

9. Expenditure by the Ministry of Defence on R & D in 1984/85 was £2176 million (51% of the total government spend). £2145 million of that was in support of procurement decisions, nearly £1375 million of which was spent in private industry. As a consequence a number of companies, some of the largest in the country, rely heavily on the government as customers for R & D and, eventually, for products. It is therefore important for Government to behave as a responsible customer not only in providing for the defence of the nation but also in ensuring that we have competitive industries in the high tech, high value added sectors and that a rapid transfer of technology to the civil sector takes place. A number of changes have been made in recent years in order to pursue this second goal.

10. The Ministry of Defence have taken a number of steps to improve the contribution their R & D makes to the wider economy. They have set up Defence Technology Enterprises to identify and market technology developed in their Research Establishments (REs), and are exhibiting at events such as the recent

Techmart. Industrialists are being invited to join the various committees concerned with defence research to bring a greater industrial dimension to planning the research programme. MOD are beginning to develop joint military and civil research programmes with industry and based on the REs, notably in information and space technology, and these have recently been reinforced by a programme of National Electronics Research Initiatives mounted jointly with DTI. MOD have also joined with the Research Councils to sponsor programmes in universities. In procurement increasing international collaboration allows the possibility of longer production runs whilst moves towards specifying the key points of performance, rather than detailed design, increase the ability of industry to offer products or components with wider market potential. This is an encouraging start but I believe many will agree that much more remains to be done if we are to fully realise the economic potential of much of the work initiated for defence purposes.

11. In the medical equipment field, which is also predominantly high tech, high value added, the UK industry has in the past been one of Britain's successes. But the report published by ACARD in July 1986 pointed to worrying signs that the industry may be failing to keep up, both technically and commercially, with its competitors in other countries. The industry is strongly influenced by the actions of the public sector, particularly by NHS purchasing. ACARD has a number of recommendations aimed at improving the relations between industry and the users of R & D in this field. To quote -

"For UK industry, such links assume particular importance. First, the UK is, as we have already mentioned, amongst the leaders in medical science. This offers the industry the opportunity to get close to the leading edge of medicine, and access to the ideas emanating from its practitioners. Second, the NHS has, by the standards of other health services, a very high level of scientific support. This forms a huge resource which could be a great asset to an industry whose own stock of qualified people is relatively small."

The Government is expected to respond soon to ACARD's recommendations.

Industrial investment in R & D

12. Investment by industry itself in R & D is, in my view, far too low in this country. The latest data available for industrial R & D refer to 1983. The 1985 figures should be available early in 1987 and will be incorporated into next year's Annual Review. The 1983 figures show private industry contributing only 35.8% to the national total of R & D expenditure. Private industry also only pays for a little over half the R & D carried out in industry, with Government supplying more than 30%. As a proportion of GDP in the UK it compares unfavourably with that in the USA, Germany and Japan. This is a major problem and I believe we must try very hard to make our industrialists as willing to invest in R & D as their more successful competitors. Whilst there are honourable exceptions there is a reluctance by UK companies to invest for themselves in R & D. We need to change the climate of opinion, particularly in the City, which regards such investment as too uncertain and long-term. The effort which Government is making to increase the contribution its own R & D expenditure makes to improving our competitive position needs to be matched by an effort on the part of companies to develop a conscious technical strategy, recognising the importance of R & D for the future strength of the company.

The Future

13. I have concentrated in this article on the economic benefit to be gained for the nation as a whole from the substantial national effort in science and technology. I make no apology for this. To quote again from ACARD's report "Exploitable Areas of Science".

"There is a thesis, widely accepted in the UK, that research cannot be organised to deliver economic return. The thesis is not generally accepted in other countries. They believe that science is now so important to a country's future that some attempt must be made to structure support and achieve more effective exploitation of science."

14. I do not believe the Government can be said to be spending too little on R & D. The share of national resources it devotes to R & D is very much the same

as in other industrialised countries. There will of course always be a debate about the balance of that funding. What is important however is that the debate should be conducted against a background of trying to secure the greatest possible economic benefit for the UK. In most areas of Government R & D spending, these benefits will only be secured if there is active collaboration with industry. Attitudes are changing but they need to change further if we are to increase collaboration between industry, academia and Government; greater cooperation within Europe; use the enormous purchasing power of Government and public utilities intelligently and adopt a more strategic, long-term view in industry and in the financial world towards science and technology. Investment in R & D is the key to our future.



10 DOWNING STREET

LONDON SW1A 2AA

5 December 1986

From the Private Secretary

Dear Tim,

EUROPEAN COMMUNITY R&D FRAMEWORK: 9 DECEMBER
RESEARCH COUNCIL

The Prime Minister has seen Mr Pattie's letter to the Foreign Secretary about the handling of discussion of the European Community R&D framework programme for 1987-91 at the forthcoming Research Council on 9 December.

The Prime Minister would be content for Mr Pattie to present the United Kingdom's position in a way which may make it more palatable to other Community member states. Her preference would be for the first of the two options set out on page 2 of your letter. But in either case, the outcome would, in practice, have to be compatible with the conclusions of E(A).

I am copying this letter to the members of OD(E), to the Private Secretaries to the Energy Secretary, the Chief Secretary, the Education Secretary, to Sir Robert Armstrong and to Mr Fairclough.

yours sincerely,
Charles Powell

Charles Powell

Tim Abraham Esq
Department of Trade and Industry.

bc



Prime Minister

Content?

MEA 4/12

TOLD

L. Wilkinson

NR 5/12

PI BF 10

me on 9/12

Yes me

W0325

PRIME MINISTER

4 December 1986

1986 ANNUAL REVIEW OF GOVERNMENT FUNDED R & D

You gave your permission for the publication of the 1986 Annual Review in response to Sir Robert Armstrong's minute to you of 23 July (ref: A086/2157).

2. In Sir Robert's absence, I propose that publication of the Review, on the 11 December, should be announced by means of an arranged PQ (a draft question and answer are attached for your approval) for written reply on the preceding day, Wednesday 10 December.

3. Arrangements are in hand for copies of the Review to be placed in the House of Commons Library at 11.00 am, the time set for publication, and I propose to hold a press briefing immediately after.



JOHN W FAIRCLOUGH
Chief Scientific Adviser

Jane Clave

DRAFT INSPIRED WRITTEN PARLIAMENTARY QUESTION TO THE PRIME MINISTER

[MP's name, constituency] To ask the Prime Minister whether the 1986 Annual Review of Government Funded Research and Development (R & D) will be published, and if so when?

ANSWER

The Annual Review of Government Funded R & D 1986, the fourth in the series, will be published through Her Majesty's Stationery Office on Thursday, 11 December. I am arranging for copies to be placed in the House of Commons library.

The Annual Review of Government Funded R&D was first announced in the Government's response (Cmnd.8591) to the House of Lords Select Committee report "Science and Government" in 1982. The Review is prepared annually by the Chief Scientific Adviser, Cabinet Office under the guidance of the Interdepartmental Committee of Chief Scientists.



From the Minister of State
for Industry and Information Technology

GEOFFREY PATTIE MP

Rt Hon Sir Geoffrey Howe QC MP
Foreign Secretary
Foreign and Commonwealth Office
Whitehall
LONDON
SW1A 2AH

DEPARTMENT OF TRADE AND INDUSTRY
1-19 VICTORIA STREET
LONDON SW1H 0ET
Telephone (Direct dialling) 01-215
GTN 215 5147
(Switchboard) 01-215 7877

Prime Minister
You will want
to be aware of
the two options

described on
page 2 of this letter marked (A) e

Would you be ready -
subject to the views of
colleagues - to see us put
forward either one of them as
4 December 1986

Dear Foreign Secretary, Prudently. In either case
it is a condition not spending over

EUROPEAN COMMUNITY R & D FRAMEWORK: 9 DECEMBER RESEARCH COUNCIL

Since the E(A) decision on 25 November on the United Kingdom's objectives for the Research Council I have, in a Presidency capacity, seen or spoken on the telephone to all of my Research Council colleagues. You and colleagues may wish to have my appreciation of where matters stand and how I propose to handle the discussion on 9 December.

The United Kingdom's position agreed at E(A), is that we should try to negotiate for a Community R and D Framework Programme for 1987-91 of 4.2 becu commitments (plus 750 mecu payments overhang from the first framework programme). Discussions with my colleagues have confirmed the difficulty we shall face in seeking to achieve an agreement at that level. Following the Prime Minister's discussions with M. Chirac the French have agreed (albeit against the wishes of their Research Ministry) to hold this level for as long as we and the Germans do; the Germans have an upper limit of 5 becu commitments. All other Member States are firmly lodged at around 6 becu or above, with the Commission standing squarely at 7.7 becu. In my talks I have made it clear that there is no prospect of agreement at 6 becu and have urged colleagues to contemplate a smaller, higher quality programme

we hear
five
years
would
not be
more
than
4.2bn
ecu.
CDD
4/12

Yes -
shortly on the
above conditions
not

DE 3/DE 3AAC

17
19 **86**
BOARD OF TRADE
BICENTENARY



which, I believe, could still meet their interests. I believe this has now shifted the debate to totals between 4 becu and 6 becu. But I have to say that I do not believe that agreement at 4.2 becu will be attainable, at least in the terms on which the argument has so far been based.

(A) Since the E(A) discussion, however, officials have been considering various alternative ways of presenting the United Kingdom's position to make it as attractive as possible in the Community context. Two possible options have emerged. The simplest would be to propose a programme lasting six years rather than five. It might be possible in negotiation to reach agreement on a figure which was no higher over six years than some Member States were looking for over five. A total of 6 becu, presented as 5.25 becu commitments with 750 mecu payments overhang is an obvious figure. But this would need to be accompanied by a binding commitment on the pace at which commitments would be disbursed in order to ensure that we did not exceed the UK's 4.2 becu total during the five years 1987-1991.

(B) The second option would be to adopt and modify an approach which has so far been taken largely by the Belgians and Dutch. This would mean interpreting the total cost of the Framework Programme not in terms of commitments but in terms of the sum of the cost of decisions taken by the Council on specific programmes and begun during the period 1987-1991. This would also require a separate binding agreement on the rate at which money could be committed. But it would mean, for example, that we would agree to a Framework composed of programmes worth a total of 5.25 becu, provided that the commitment rate on the new programmes between 1987 and 1991 was limited to an average of 75%. A variant on this theme would be to seek a binding agreement on the annual rate of payments.

While the chances of success using either of these formulae must still be assessed as very slim indeed I think it is very important that the Presidency should be able to put forward some proposals at the Research Council on 9 December. The view of legal advisers is that it should be possible to build into any regulation on the Framework the kind of assurances that we would need on rate of commitment or payments to make either of the options suggested watertight from the UK's point of view. Without these assurances we would not, of course, wish to proceed.



My plan at the Council therefore would be first of all to renew the debate on total cost along traditional lines in order to bring out clearly to the high spenders the determination of the big countries not to be pulled up towards them (this will obviously require continued close co-ordination with France and Germany). After the parties have largely exhausted themselves along these lines I might then tentatively float one or other of the options suggested in paragraphs 3 or 4 above. This may of course provoke others to throw in their own ideas for possible compromises which will have to be fended off if they are inconsistent with the UK's position.

I should also make it clear that, in accordance with the E(A) discussion, I am proceeding on the understanding that EUROPE'S baselines will be redistributed to reflect the balance of the new Framework Programme.

I am copying this letter to the members of OD(E), Peter Walker, Kenneth Baker, Sir Robert Armstrong and John Fairclough.

Yours sincerely,

Timothy Abraham

PP GEOFFREY PATTIE

*(Approved by the Minister
and signed in his absence)*



W0325

MR ADDISON - No. 10

4 December 1986

1986 ANNUAL REVIEW OF GOVERNMENT FUNDED R & D

I attach a minute to the PM covering a draft PQ on the 1986 Annual Review publication for answer on 10 December, subject to the Prime Minister's agreement.

I have arranged for briefing to be prepared for PM's question time on 11 December should further questions be raised relating to the Review.

CONFIDENTIAL

pp

JOHN W FAIRCLOUGH

Chief Scientific Adviser

c Mr Woolley - Private Office

Mrs Cunningham

Mr Jones

Miss Wilkinson

Confidential



x

Personal

CABINET OFFICE

1. ~~COP~~ to see.
2. P.C.

Mr. Channon

I think you should be aware of this. I do not think

With the compliments of

Mr Channon should yet seek the P.M.'s direct aid.

J. B. UNWIN But unless we can soon make better progress, he may need to do so (either via E(A) or on a more ad hoc basis).

70 Whitehall, London SW1A 2AS

Telephone 01 233

3/xu

CONFIDENTIAL

P 02388

SECRETARY OF STATE FOR TRADE AND INDUSTRY

cc Sir Brian Hayes, Department of Trade and Industry
Mr J W Fairclough, Cabinet Office.

E(RD) Remit to the Ministry of Defence

E(RD) is currently scheduled to meet on Monday 8 December, essentially to take papers by the Secretary of State for Defence on

- i. the implications for his programme of complying with E(A)'s decision to constrain future defence R & D spending to the path set out in the 1985 long-term costings;
- ii. MOD plans for the development of new weapon systems through international collaboration.

The Secretary of State for Defence is also due to produce a paper on

- iii. the practical arrangements for cooperation between MOD and DTI, so as to ensure that the implications for UK industry are fully taken into account in decisions relating to defence R & D and procurement.

2. It now appears that we are unlikely to see any of these papers until after Christmas. A draft of the paper on international collaboration was shown to the Cabinet Office and to your officials, but this fell far short of describing a coherent plan, and was mostly concerned with arguments against E(A)'s decision to constrain total spending on R & D. Officials from your Department and from the Science and Technology Secretariat made

CONFIDENTIAL

clear their dissatisfaction with the draft, and suggested what further ground needed to be covered; we have yet to see any revised version, and it is most unlikely that a satisfactory text could be available for next Monday.

3. As to the more general paper, which the Defence Secretary was asked to produce in consultation with the Chief Scientific Adviser, Cabinet Office, we have seen some of the detailed material for the annexes but not a draft of the substantive paper. There is now no prospect of Mr Younger circulating a paper reflecting consultation with the Chief Scientific Adviser in time for a discussion next Monday. The latest word from the Ministry of Defence is that they now expect to bring forward the paper in January.

4. As to the paper on coordinating machinery between MOD and DTI, we have been told that MOD do not now expect to finalise this until after a meeting between Sir Brian Hayes and Sir Clive Whitmore scheduled for 19 December. (This was stated in an MOD letter to the Chief Scientific Adviser, not copied to your Department.) We understand from your officials that a substantial measure of agreement on procedures was reached at working level sometime ago, and that it had certainly not been in their contemplation that the scheduled meeting at Permanent Secretary level should be used as an excuse to delay the MOD response to E(RD) remits.

5. This unsatisfactory story is all too familiar, in the light of the Cabinet Office's previous experience with the work of MISC 110. MOD have dragged their feet at every stage of the exercise, and constantly sought to delay the implementation of effective arrangements to enable proper attention to be paid to the industrial dimension in defence R & D and procurement decisions. We shall shortly be faced with the AEW radar decision, where it would certainly have been helpful to have as background some indication of the prospective future defence loading on the UK firms concerned arising from other weapon systems expected to be under development. My understanding is that the responsible DTI industry divisions have only been provided with information about

the industrial implications of the alternative courses within the last few days, but it now seems inevitable that the decision on AEW will have to be taken in advance of any wider view being available of the future defence R & D programme.

6. In all the circumstances, I fear that there seems no alternative to the cancellation of next week's E(RD) meeting. The other agenda items - the review of the Department of Energy R & D programme, and a progress report on the work of the Assessment Office - would not of themselves justify a meeting. MOD now seem to envisage delaying any further meeting of E(RD) until next January, although they have not yet specifically proposed such a delay to the Secretariat. There is no immediate operational need for any E(RD) meeting either on Defence or on other grounds; the Energy paper could if necessary wait until early January. So far as MOD is concerned, arguably it makes relatively little difference if there is a further three weeks' delay in remedying a deficiency which dates back decades. On the other hand, the delay does in a sense represent a continuing refusal by MOD to work jointly with other Departments as they should, and there cannot be any excuse for indefinite foot-dragging.

7. Given that Ministers will be preoccupied with the AEW decision, my own view is that there would not be much advantage in trying to reschedule E(RD) before Christmas and pressing the Defence Secretary to provide the appropriate material. If you agree with this, you may nevertheless wish to register with the Defence Secretary your concern at the failure to deliver what was promised, and to secure an undertaking from him that all the material will be available for a meeting of E(RD) in, say, the second week of January. I attach the draft of a letter on these lines which you might like to consider sending him in your capacity as Chairman of E(RD). I have suggested that you should copy this to the Prime Minister and other colleagues on E(RD). You may want to reflect on this, but I think it is now time to sound a general warning.



J B UNWIN

CONFIDENTIAL

Draft letter from the Secretary of State for Trade and Industry
to the Secretary of State for Defence.

E(RD) REMITS TO THE MINISTRY OF DEFENCE

As you know, a meeting of E(RD) has for some time been scheduled for 8 December, essentially to discuss papers from you about the implications of constraining future defence R & D expenditure in accordance with the earlier E(A) decision (arising from the E(RD) meeting at the end of September), about your Department's future strategy for international collaboration in the development of new weapon systems and its implications for UK industry, and about the practical arrangements to be made in your Department to ensure that the industrial dimension is fully taken into consideration at all stages of decision-making on defence R & D and procurement (the later two remits deriving from E(RD)'s consideration before the summer holiday of the MISC 110 follow-up report).

2. I was therefore concerned to hear that there now appears to be no prospect of any of this material being available before Christmas, including the paper on the practical arrangements between our two Departments to ensure that full consideration is given at every stage to the industrial implications of defence R & D and procurement decisions. I understand that your officials feel that this latter paper has to await the outcome of a meeting between our respective Permanent Secretaries on 19 December, and that they expect also to draw on that discussion in preparing the substantive paper about your future R & D programme which you were invited to prepare by the end of November in consultation with the Chief Scientific Adviser, Cabinet Office. My officials tell me, on the other hand, that it was never in their contemplation that this meeting should result in several weeks delay in the completion of outstanding work.

3. I know that you yourself strongly endorse the importance we have collectively attached to pressing ahead with efforts to increase the benefits to British industry and the UK economy from Government spending on R & D, more than half of which is the responsibility of your Department. I very reluctantly accept that there is unlikely now to be the opportunity before Christmas for a constructive discussion of adequately prepared papers, but I am clear that we owe it to colleagues not to delay beyond early in January - not least so that you are in a position to take account of decisions in your next annual review of defence plans. I should be very grateful, therefore for your help in ensuring that all three papers will be ready for a meeting of E(RD) in the first half of January.

4. I am copying this letter to the Prime Minister, E(RD) colleagues, Sir Robert Armstrong and Mr Fairclough.

MR GUISE
POLICY UNIT

file AFJ

MEETING WITH JOHN FAIRCLOUGH

I am sorry about the confusion over timing. You may like to have the attached note of the meeting, from which you will see that you were present for the most interesting part of the discussion.

PAB

P.A. Bearpark

3 December 1986

LB

Andy

Your offer to send your minute to Departments. We would suggest that it goes to the following:

Sir David Phillips - ABRC, DES

Oscar Roith - Chief Engineer & Scientist, DTI

W F Mumford - Main Building MOD

R Q Braithwaite - Room WH 237 FCO

Jane
233 7494

IND. POL : Support & Innovation : P3



BF
file 115

10 DOWNING STREET

LONDON SW1A 2AA

From the Private Secretary

MR FAIRCLOUGH
CABINET OFFICE

I have recorded below the main points discussed at your meeting with the Prime Minister on Friday.

LINK

You explained that the scheme was now ready to be launched. DES, DTI, and MOD were all enthusiastic and you felt that Alistair Frame had the right attitude to prompt things along. One of the key features would be that departments would be better able to co-operate in their research efforts, something that historically had not happened very much. The Prime Minister asked if the scheme was sufficiently large to justify a launch at this stage. You confirmed that it was and said that the Secretary of State for Trade and Industry had suggested that the Prime Minister either mention it in a forthcoming speech, or in an arranged PQ. The timing was important and if no suitable speech could be found before mid-December, he felt it would be better to use the other method. The Prime Minister said she would consider whether it would be appropriate to include it in the Manchester Speech on 11 December. She has subsequently decided that it would not, and has agreed that the announcement should be by way of an arranged PQ.

Science Seminars

You explained that there were two seminars in which you wished the Prime Minister to consider participating. The first of these would be at Chequers with the intention of a group of eminent scientists briefing the Prime Minister on their work. You proposed that the group be drawn from people working both on the frontiers of discovery, and at the University/industry interface. The second possible seminar arose out of the ACARD report. This would be a rather larger gathering, possibly at Lancaster House, and would aim to focus on the importance of setting priorities within science. The Prime Minister thought that such a gathering would be better suited to the Conference Centre, and would need a carefully arranged agenda with clear goals. Possible areas for the conference to focus on were opto-electronics or molecular-electronics. One option which would have to be explored would be the possibility of the UK

giving up certain areas of research to concentrate on those in which it had a comparative advantage. An example of an area which might have to go was particle physics, where much of the work seemed to duplicate work already being done in the United States. You agreed to put forward a more detailed proposal for the Prime Minister's consideration, and she will want to look at this - and the proposed timing - before we go firm on a date for the briefing seminar.

EC R&D Framework

You explained the importance of providing finance to encourage cross-national research and industrial collaboration which you thought was an important aspect of creating an internal market. You felt that industrial collaboration on research and development was in many cases a precursor to the formation of joint ventures, consortia and even mergers for activity targeted on a broader than national market. You cited the example of ALVEY, and explained that the 4.2 billion ecu programme currently proposed might not be sufficient. The Prime Minister was firmly of the view that sufficient seed corn money had already been provided and that there had so far been a disappointing absence of concrete results. She did not envisage any more money being made available, and said that instead it was up to industry and scientists to choose their priorities. She was disappointed that they did not do more on their own account, and saw no reason to provide further subsidies. She had been bitterly disappointed at the content of the last ACARD report, and was looking for a return on previous investment in R&D before considering the provision of more funding.

I am copying this letter to Shirley Trundle (Department of Education and Science), Michael Gilbertson (Department of Trade and Industry), Ian Andrews (Ministry of Defence) and Colin Budd (Foreign and Commonwealth Office).

PS

P.A. Bearpark

3 December 1986

J/B

no seminar until pass New Year (see Design seminar file)

RESTRICTED

W0321

MR BEARPARK - No. 10

2 December 1986

Thank you for your note recording my discussion with the Prime Minister on 28 November. I would like to add one or two points of elaboration to your record of the discussion and I agree that copies should go to DES, DTI, MOD and FCO.

2. LINK

I do think it important that we announce LINK before mid-December. It would be excellent if the Prime Minister were to conclude that the announcement could be incorporated into her Manchester speech on 11 December, failing that we should proceed with an arranged PQ as soon as convenient.

3. SCIENCE SEMINARS

In connection with the Chequers seminar, it is only necessary to establish a date for the event. I have a proposed list of names with which the DES and DTI are content, invitations can go out to them as soon as a date is established. This could be held at any time convenient to the Prime Minister.

At the second seminar, the theme of which would be exploitable areas of science, I would expect there to be discussion of the ACARD proposal on how this important subject will be considered in the future. It is also expected that a number of examples will be discussed like optoelectronics and molecular electronics. There are one or two other subjects which will emerge as discussion topics. The support and participation of the Prime Minister in this event will be excellent. As a minimum we would hope that she could launch the seminar with an introductory speech. Better still would be to have her participation in the whole event which I know will be difficult. I will put forward a more detailed proposal for this and hope that it can be scheduled for February/March of next year.

4. EC R & D FRAMEWORK

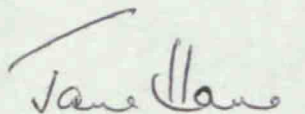
I have only one point of clarification and that is that we have made good progress in the number of areas sponsored by the Alvey project. These ideas are worthy of exploitation and it is the hope of the DTI that the Framework programme will proceed to agreement during our Presidency so that we can have an opportunity of participating in ESPRIT and RACE to exploit the initiatives established under Alvey.

5. A more general point. I tried to persuade the Prime Minister that collaborative research and development between companies and across national boundaries was an important aspect of creating an internal market. Industrial collaboration on research and development was in many cases a precursor to the formation of joint ventures, consortia and even mergers for activity targetted on a broader than national market. The Prime Minister was clear that sufficient was already being done in this regard.

6. The Prime Minister also asked for more information on molecular electronics. I am having a resume of the current status of this interesting science prepared for the Prime Minister and this should be ready in a few weeks.

PP

JOHN W FAIRCLOUGH
Chief Scientific Adviser



IND. POL: Support & Innovation: PE3.



cc.
DTI
DES
DN
MOD
MAFF
DE
DT
Chief Sec.
MOS, DTI.

JDB ATG



10 DOWNING STREET
LONDON SW1A 2AA

From the Private Secretary

2 December, 1986.

Dear Richard

The Prime Minister has seen your Secretary of State's minute of 24 November reporting on the work of the Ministerial Sub-Committee on Research and Development. She was pleased to note that full agreement has been reached on the terms on which all Departments with major R & D programmes will participate in LINK. She notes that the objectives of LINK are not new, and that it will build on existing programmes and will reshape Departments' spending patterns on R & D in order to give greater emphasis to their contribution to wealth creation. In this context, she has commented that £200 million over 5 years is rather low in relation to total Government spending on Research and Development which is currently of the order of £4300 million a year. She thinks it important that as large a proportion as possible of existing Government programmes should be associated with LINK.

The Prime Minister would also like to be assured that every effort will be made to see that small and medium size firms are able to participate fully in LINK.

The Prime Minister is content to make the announcement herself, but has concluded that there will be no suitable speech to include it in in the next few weeks, and would therefore prefer to make it by way of an arranged Parliamentary Question. I await your further advice on this.

I am copying this letter to the Private Secretaries to the other members of E(RD) and to Sir Robert Armstrong and John Fairclough.

Yours ever

A.P. Bearpark

Michael Gilbertson, Esq.,
Department of Trade and Industry.

PRIME MINISTER

LINK

Mr Fairclough mentioned the attached minute from Mr Channon in his meeting on Friday. We have considered including the assessment of LINK in the Manchester Chamber of Commerce speech but this does not seem particularly appropriate. You will see from Mr Fairclough's proposal - draft at A - that he feels you should also stress the importance of making the programme as large as possible, and ensuring that smaller and medium size firms are able to participate fully.

Content for me to write as Mr Fairclough proposes?

as a proposal of other programmes - not new money

PDB

Leo

P.A. Bearpark

1 December 1986



W

MR BEARPARK

Pse type

28 November 1986

You may find this draft useful.

JOHN W FAIRCLOUGH

Enc

A

ATG

DRAFT RESPONSE TO SECRETARY OF STATE FOR TRADE AND INDUSTRY

LETTER OF 24 NOVEMBER

The Prime Minister has seen your Secretary of State's minute of 24 November reporting on the work of the Ministerial Sub-Committee on Research and Development. She was pleased to note that full agreement has been reached on the terms on which all Departments with major R & D programmes will participate in LINK. She notes that the objectives of LINK are not new and that it will build on existing programmes and will reshape Departments' spending patterns on R & D in order to give greater emphasis to their contribution to wealth creation. In this context, she has commented that £200 million over 5 years is rather low in relation to total Government spending on Research and Development which is currently of the order of £4300 million a year. She thinks it important that as large ^{a proportion} ~~an element~~ as possible of ^{existing} ~~other~~ Government programmes should be associated with LINK.

2. The Prime Minister would also like to be assured that every effort will be made to see that small and medium size firms are able to participate fully in LINK.

3. The Prime Minister ^{is content} ~~agrees~~ to make the announcement herself ~~and will do so,~~
but has concluded that there will be a no suitable speech to include
~~[in a speech on X December at Y]~~ *it is in the next few weeks and would*
therefore like to make the announcement by way of an
~~[by way of a written answer to an arranged Parliamentary question].~~ *I would*
your further advice on this.

I am copying this to [as in Channel minute]

MR. NORGROVE

Attached is a draft record of today's meeting on LINK, and the relevant papers. You agreed to look at these and think about whether you preferred to include the announcement in the Manchester speech, or to go for an arranged PQ.

PAB

P A BEARPARK

28 November 1986

SUBJECT
C MASTER

J. S. H.



10 DOWNING STREET
LONDON SW1A 2AA

From the Private Secretary

MR J. FAIRCLOUGH
CABINET OFFICE

I hope that you felt today's meeting was useful. The following is a summary of my recollection of the points discussed, and the requisite follow-up action. I should be very grateful for any comments you have on this, and in particular if you have any objections to my sending this to the departments concerned.

LINK

Mr. Fairclough explained that the scheme was now ready to be launched. DES, DTI, and MOD were all enthusiastic and he felt that Alistair Frame had the right attitude to prompt things along. One of the key features would be that departments would be better able to cooperate in their research efforts, something that historically had not happened very much. The Prime Minister asked if the scheme was sufficiently large to justify a launch at this stage. Mr. Fairclough confirmed that it was and said that the Secretary of State for Trade and Industry had suggested that the Prime Minister either mention it in a forthcoming speech, or in an arranged PQ. The timing was important and if any suitable speech could be found before mid-December, he felt it would be better to use the other method. The Prime Minister said she would consider whether it would be appropriate to include it in the Manchester Speech on 11 December.

Science Seminars

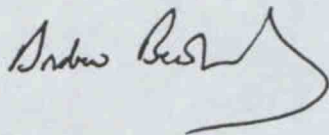
Mr. Fairclough explained that there were two seminars in which he wished the Prime Minister to consider participating. The first of these would be at Chequers with the intention of a group of eminent scientists briefing the Prime Minister on their work. He proposed that the group be drawn from people working both on the frontiers of discovery, and at the University/industry interface. The second possible seminar arose out of the ACARD report. This would be a rather larger gathering, possibly at Lancaster House, and would aim to focus on the importance of setting priorities within science. The Prime Minister thought that such a gathering would be better suited to the Conference Centre, and would need a carefully arranged agenda with clear goals. Possible areas for the conference to focus on were opto-electronics or molecular-electronics. One option which would have to be explored would be the possibility of the UK giving up certain

areas of research to concentrate on those, in which it had a comparative advantage. An example of an area which might have to go was particle physics, where much of the work seemed to duplicate work already being done in the United States. Mr. Fairclough agreed to put forward a more detailed proposal for the Prime Minister's consideration.

EC R&D Framework

Mr. Fairclough explained the importance of providing finance to encourage cross-national research and industrial collaboration. He cited the example of ALVEY, and explained that the 4.2 billion ecu programme currently proposed might not be sufficient. The Prime Minister was firmly of the view that sufficient seed corn money had already been provided and that there had so far been a disappointing absence of concrete results. She did not envisage any more money being made available, and said that instead it was up to industry and scientists to choose their priorities. She was disappointed that they did not do more on their own account, and saw no reason to provide further subsidies. She had been bitterly disappointed at the content of the last ACARD report, and was looking for a return on previous investment in R&D before considering the provision of more funding.

I look forward to receiving your comments.



P A BEARPARK

28 November 1986

cc B/UP

PRIME MINISTER

MEETING WITH JOHN FAIRCLOUGH

We have half an hour tomorrow afternoon with John Fairclough. There are three things he would like to discuss.

LINK

This is the new name for the initiative to forge more effective links between industry and research institutions. The minute from the Secretary of State for Trade and Industry at flag A explains that agreement has now been reached on the scheme, and suggests that you announce it either in a speech or arranged PQ. There are a number of speeches coming up but none would seem particularly appropriate for this sort of major announcement and you may prefer the arranged PQ, followed by a DES/DTI press conference.

SCIENCE SEMINARS

Mr. Fairclough's minutes at flag B suggest he would now like two of these. You might ask him to explain why he wants two - it will be difficult enough to fit one in.

EC RESEARCH COUNCILS

Mr. Fairclough wishes to discuss the recent decision to limit support to a 4.2 billion ecu programme.

A note by George Guise is at flag C. His earlier concern that the LINK steering group would be another toothless quango has been assuaged by the proposed appointment of Sir Alistair Frame - who he suggested.

PSB

P.A. BEARPARK

27 November 1986

cc B. J. P. c
C

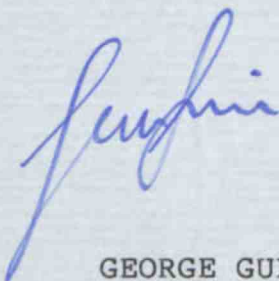
MR BEARPARK

25 November 1986

PAUL CHANNON'S MINUTE ON LINK/FAIRCLOUGH'S MEETING
WITH THE PRIME MINISTER ON FRIDAY, 28 NOVEMBER

Since writing my original note on the LINK Programme of 17 November (attached) I have discovered that Sir Alistair Frame, Chairman of RTZ, has been offered and conditionally accepted the Chairmanship of the LINK Steering Group. The idea of approaching Frame stemmed from a suggestion of mine to John Fairclough in September and I am very pleased indeed that it looks as if he will take the post.

I do not know how well the Prime Minister is acquainted with him, but he is a no-nonsense man with a strong technical background and proven overall business achievement. He should give the LINK programme an excellent start. If it is workable he will make it work and if it is not he will say so early on. This is exactly what LINK needs and my fears of it degenerating into another toothless Quango are therefore considerably lessened.



GEORGE GUISE



B.
CCB/SP
CCB

W0310

PRIME MINISTER

25 November 1986

I am sorry that my flu prevented me seeing you last Tuesday to discuss LINK (previously Pull-through).

2. E(RD) met on 19 November and agreed LINK with the active participation of all Departments who have major research and development programmes. Paul Channon's minute of 24 November 1986 ^{with DN?} refers to this conclusion. I think LINK is significant as an incentive for private industry to spend more money on research and development; to give a signal to the science community of the areas of science which industry thinks are important, and most importantly, to provide encouragement to exploit the many good ideas that we have in our universities.

3. Another important factor is that LINK will allow Departments to collaborate on research and so get better value for money. For example, Department of Energy and the Department of the Environment both have an interest in combustion technology. Research on this subject could be sponsored jointly by both Departments. There are other examples like this and I am hopeful that this form of collaboration will develop.

4. E(RD) is most anxious that you, personally, announce LINK and I would like to discuss with you how this might be done. I hope you will support this important initiative.

5. In my previous minute I also mentioned that I would like to discuss the possibility of a science seminar on the Priorities for Science and Technology.

6. You will recall that I represent the UK in the EC and Research Council meetings during the British Presidency when Geoffrey Pattie takes the chair. I would welcome an opportunity to discuss the R & D Framework Programme with you and the implications of Ministers' recent decision to limit our support to a 4.2becu programme.



JOHN W FAIRCLOUGH
Chief Scientific Adviser



CONFIDENTIAL

PRIME MINISTER

RESEARCH AND DEVELOPMENT AND ITS CONTRIBUTION TO WEALTH
CREATION

In my report to you ^{at Nap PT2} 11 August about the work of E(RD), I undertook to come back to you when agreement had been reached among all the Departments concerned about the terms of their participation in a new initiative to forge more effective links between industry and research institutions, and so pull through scientific and technological advances more quickly and effectively into marketable products and services.

2 Despite the reservations expressed earlier by some Departments, I am glad to report that full agreement has been reached on the terms on which all Departments with major R&D programmes will participate in the new initiative, which we now call LINK. We have recognized that the objectives of LINK are not new, and that we are not in the business of increasing Departments' total spending on R&D : rather we are building on ideas which have already been put into effect in certain limited areas and will continue - examples are Alvey and some of the Department of Energy's programmes - and extending them much more widely across the generality of the Government's relationships with industry. At the same time E(RD) is starting to reshape Departments' spending patterns on R&D so as to give greater emphasis to programmes with substantial industrial participation, which offer the best prospects for greater wealth creation.

JF5BNP



CONFIDENTIAL

3 The major contributing Departments remain my Department and the Department of Education and Science (largely through the Science and Engineering Research Council, and there will also be a substantial contribution from the Ministry of Defence (as there already is to Alvey). But the other industry-sponsor Departments with substantial research responsibilities - Agriculture, Energy, Environment, Transport, Health and Social Security, Scotland - will all be sponsoring programmes within the LINK framework. Total Government expenditure over the 5 years to 1991-92 should amount to more than £200 million, and the principles of LINK will require an at least matching contribution by industry. Following a meeting which Geoffrey Pattie had earlier this month with some 30 senior industrialists who warmly welcomed LINK, I am confident that industry will be supportive of the programme. While LINK does not mean an increase in Government R&D expenditure, there is every prospect that it will secure an increase in private sector expenditure on R&D, where the performance of British industry has been falling far short of that of its main international competitors.

4 We intend that LINK should be led and co-ordinated by a Steering Group (LSG) chaired by a senior industrialist from the private sector - my preferred candidate is Sir Alistair Frame of RTZ, and I hope to have confirmation of his agreement to serve by the end of this month. But LSG will not be an executive body: responsibility for managing and financing the programmes will remain with the sponsor Departments, which will rely where possible on existing machinery. LSG will ensure that LINK programmes meet the scheme's criteria and objectives, and will serve as a focus for co-ordination and information exchange between Departments. In presenting LINK we shall make clear that other programmes, with broadly comparable or complementary

JF5BNP



CONFIDENTIAL

objectives - including JOERS, the Department of Energy's nuclear joint programmes with the electricity industry and Eureka - will continue alongside and in association with LINK.

5 Once the chairmanship of the LSG has been settled, the way will be open for an early announcement. Colleagues on E(RD) were unanimous that, in order to enhance the authority of the new programme and secure maximum impact from the announcement, you should if possible make it yourself on a public occasion in the near future. I have in mind that you might do this in a speech or a section of a speech - dealing with the Government's policy towards research and development, which would place LINK in the wider context of the Government's efforts to stimulate more, and more effective R&D activity. If, however, you see no early opportunity to make the announcement in this way, we may have to consider other possibilities - for example a written Answer you would give to an arranged Parliamentary Question, to be followed by a press conference taken by DTI and DES Ministers.

6 I am sending copies of this minute to the other members of E(RD), and to Sir Robert Armstrong and John Fairclough.

PAUL CHANNON

24 November 1986

PRIME MINISTER

MEETING WITH JOHN FAIRCLOUGH

We have half an hour in the diary from 1030-1100 tomorrow for a meeting with John Fairclough.

He has submitted the attached minute which indicates the areas he wishes to discuss.

On LINK he wants the opportunity to brief you before the meeting of E(RD) on Wednesday following which you will probably be asked to announce the programme by way of an inspired PQ. A helpful note by George Guise is also attached.

Mr. Fairclough also wants to discuss the proposal for a Seminar on "Priorities for Science and Technology". This is entirely separate from the proposed "Science Seminar" at Chequers, which we were unable to fit into the diary this year. Next year's diary is already quite horrendous, and you may feel that there is only room for one Science-related seminar.

Mr. Guise and I will also be present.

PAB

PAB

17 November 1986

JD/63

EC R & D PROGRAMMES: UK % OF RECEIPTS AND OF CONTRACTS

PROGRAMME:	PERCENTAGE (%) OF TOTAL RECEIPTS	PERCENTAGE (%) OF CONTRACTS AWARDED
ESPRIT	21.0	
BRITE	19.3	
RACE DEFINITION PHASE	31.8	
BIOTECHNOLOGY		23.0
ENVIRONMENT PROG.	18-20	
NON-NUCLEAR ENERGY	20.0+	
STIMULATION		33.0

NB. UK CONTRIBUTION TO THE OVERALL COMMUNITY BUDGET CURRENTLY
20% (BEFORE FONTAINEBLEAU ABATEMENT TAKEN INTO ACCOUNT)

MR BEARPARK

17 November 1986

FAIRCLOUGH'S MINUTE TO THE PRIME MINISTER,
14 NOVEMBER ON LINK

The basic purpose of Link is to achieve greater partnership between private industry and Government in making the British R&D effort effective.

The figures currently being proposed are £210m from Government over the next five years matched by a similar contribution from industry leading to total expenditure in excess of £400m. Total proposed Government expenditure on R&D over this period is of the order of £25bn, of which more than half will be on defence. The key question is therefore whether the big spending Departments like MOD and Energy are really paying more than lip service to the idea of Link.

Because the whole concept of Link is not to increase Governmental R&D but to reallocate it by spending a proportion in partnership with industry, it is inevitable that a firm commitment to Link must involve some surrender of control over what and how research is promulgated. For example, MOD proposes total R&D expenditure in the 1987/88 year of over £2.5bn and yet has offered only £5m towards the Link programme in that year, albeit indicating that this will rise to an annual spend of £15m once Link is in full operation five years later.

My concern therefore is with the motivation of those Government Departments which claim to support Link. Those whose research programmes are not going to be severely affected, because the research is already being done through the Research Councils or are already in partnership with industry such as the DTI, the DES, Agriculture or Transport, may be keen on Link because they have little to fear. Those Departments who direct and carry out most of their own R&D,

such as Defence and Energy may be supporting Link in word only.

Indeed, the lack of commercial spin-off from the enormous volumes of defence R&D which have already been spent is something of a national disgrace. In terms of the investments this country has made there should be a thriving computer industry, a silicon chip industry, extensive developments in solid-state physics such as lasers, and a strong radio industry. In fact, the radio industry has declined to nothing.

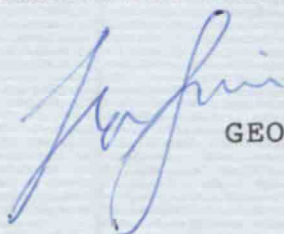
Conclusion and Recommendation

The objectives of the Link programme are wholly laudable and should be strongly encouraged.

In doing so the dangers of setting up yet another Quango with no real teeth must be addressed. It all centres on management and motivation: If effective people with strong commercial connections feature on the Link Steering Group and if it has a good chairman with powerful terms of reference it could make a very big difference to the effectiveness of our national R&D spend.

Fairclough should therefore be pressed on how he proposes to manage Link and how he proposes to get sensible proportions of total expenditure allocated from the major Departments such as Defence and Energy.

Do please give this to the Prime Minister if you feel it would be helpful. I attach some background figures on overall Government R&D investment in 1984/85.



GEORGE GUISE

Research and Development in the UK

Key Facts and Figures

1. Government funded R & D was valued at £4.3 billion in 1984/5.
2. Of this £2.2 billion (51%) is attributed to the Ministry of Defence.
3. Largest expenditure by Civil Department is DTI - £346.7m in 1984/5. This is projected to decline to £252.1m in 1988/89 in current prices.
4. In 1983 (latest year for which full detail available) total expenditure in the UK on R & D was about £6.6 billion - of which about half was funded by Government. The combined expenditure of Private industry, Nationalised Industries, and monies from Overseas account for the other half.
5. UK Government spending on R & D represents about 3% of Government budget.
6. UK Government spending on R & D is about 1.3% of GDP in 1984/5.
7. Government employs at present (1984/5) about 57,000 people on R & D. Approximately 17,500 are degree level and 8,500 technicians (all figures include UKAEA).

old
W0300

PRIME MINISTER

B
C.C.B./P
14 November 1986

You will recall my predecessor, Sir Robin Nicholson, proposing a "Pull-Through" scheme to achieve a reallocation of resources to promote a better "pulling-through" of outstanding advances in our science and engineering research base to provide new products and services to be sold profitably by UK industry. In establishing the new Ministerial Committee on Research and Development earlier this year you said urgent consideration should be given to his proposal.

2. The Chairman of the Committee, the Secretary of State for Trade and Industry, reported to you in August that although some progress had been made his colleagues were not yet ready to reach agreement in detail on the scheme. Further work has resulted in a detailed scheme going forward for agreement on 19 November. I sincerely hope agreement will be reached. It has been difficult to persuade Departments that without subverting their own objectives in funding R & D they can, at the same time, meet the broader national objectives of improving the efficiency, competitiveness and innovative capacity of the United Kingdom economy by working together and in partnership with both industry and the academic base.

3. The Scheme has now been named the LINK Programme. It is only one part of the drive towards exploiting our strength in science to obtain greater economic return but I believe it will give a number of important signals:- That the Government

- believes that our strength in science and technology is an essential force for improving our international competitiveness.
- that to render this force effective Government, industry and the science and engineering community must work in partnership.

- that industry and commerce need to recognise the value of R & D and invest more of their own resources in it.

4. Announcing LINK will offer an opportunity for presenting Government policy on science and technology and I offer a text for this purpose for your consideration.

5. I am also working on the proposal for a seminar on "Priorities for Science and Technology" to which both Sir Francis Tombs, Chairman of the Advisory Council for Applied Research and Development (ACARD) and Sir David Phillips Chairman of the Advisory Board for the Research Councils (ABRC) are giving their strong support. We hope, following your two successful seminars an engineering and technology, that you will feel able to chair the Seminar, which will be designed to get across to scientists, industrialists and the city the Government's commitment to research and development which will lead to greater wealth creation. The City in particular remains woefully short-sighted in its attitude towards investment in R & D.

6. I hope to have an opportunity to touch on both LINK and the proposed seminar when we speak on 18 November.

JOHN W FAIRCLOUGH

W.0300



*of copy to Gary Gann
P. King Unit.
cc B/J/P.*

PRIME MINISTER

14 November 1986

You will recall my predecessor, Sir Robin Nicholson, proposing a "Pull-Through" scheme to achieve a reallocation of resources to promote a better "pulling-through" of outstanding advances in our science and engineering research base to provide new products and services to be sold profitably by UK industry. In establishing the new Ministerial Committee on Research and Development earlier this year you said urgent consideration should be given to his proposal.

2. The Chairman of the Committee, the Secretary of State for Trade and Industry, reported to you in August that although some progress had been made his colleagues were not yet ready to reach agreement in detail on the scheme. Further work has resulted in a detailed scheme going forward for agreement on 19 November. I sincerely hope agreement will be reached. It has been difficult to persuade Departments that without subverting their own objectives in funding R & D they can, at the same time, meet the broader national objectives of improving the efficiency, competitiveness and innovative capacity of the United Kingdom economy by working together and in partnership with both industry and the academic base.

3. The Scheme has now been named the LINK Programme. It is only one part of the drive towards exploiting our strength in science to obtain greater economic return but I believe it will give a number of important signals:- That the Government

- believes that our strength in science and technology is an essential force for improving our international competitiveness.
- that to render this force effective Government, industry and the science and engineering community must work in partnership.
- that industry and commerce need to recognise the value of R & D and invest more of their own resources in it.

4. Announcing LINK will offer an opportunity for presenting Government policy on science and technology and I offer a text for this purpose for your consideration.

5. I am also working on the proposal for a seminar on "Priorities for Science and Technology" to which both Sir Francis Tombs, Chairman of the Advisory Council for Applied Research and Development (ACARD) and Sir David Phillips Chairman of the Advisory Board for the Research Councils (ABRC) are giving their strong support. We hope, following your two successful seminars on engineering and technology, that you will feel able to chair the Seminar, which will be designed to get across to scientists, industrialists and the city the Government's commitment to research and development which will lead to greater wealth creation. The City in particular remains woefully short-sighted in its attitude towards investment in R & D.

6. I hope to have an opportunity to touch on both LINK and the proposed seminar when we speak on 18 November.

A handwritten signature in dark ink, appearing to read 'John W. Fairclough', with a large, stylized initial 'J'.

JOHN W FAIRCLOUGH

Qn 0595



MR BEARPARK

cc Mr Fairclough

14 November 1986

THE LINK PROGRAMME

Background

The LINK programme was foreshadowed in the report of MISC 119 to E(A) on 19 February this year. In an annex to the report the, then, Chief Scientific Adviser recommended a scheme to promote the better "pulling-through" of outstanding advances in our science and engineering research base to provide new products and services to be sold profitably by UK industry. In her summing up at the E(A)(86) 6th meeting the Prime Minister said that urgent consideration should be given to the Chief Scientific Adviser's proposal by the new Ministerial Committee on R & D established to continue the work of MISC 119. This Committee (E(RD)) is chaired by the Secretary of State for Trade and Industry who made a first report to the Prime Minister on 11 August this year. He reported that E(RD) had concluded that there should be a single scheme capable of covering all the Departments with significant research programmes and all the Research Councils. However, it was taking Departments some time to determine which of their programmes would best fit within the scheme and therefore what sum to earmark for their contribution. He expressed the view that there was an element of dragging of feet by colleagues - and sought the Prime Minister's endorsement for the scheme in order to support the efforts to arrive at an adequate budget and gain the backing of industry. The Prime Minister replied on 18 August giving her support.

2. Further discussions in E(RD) and work by officials have now resulted in a scheme which would appear to be acceptable to all Departments. The budget will be £210m over the five year period to 1991-92. This would be matched by industry leading to total expenditure of more than £400 million. This expenditure by Departments will not be additional new money but will be built up by reshaping their activities. In addition to the new programmes making up the scheme - now known as the LINK Programme - there are a number of existing programmes which have the same broad objectives in, for example, the areas of

information technology or offshore energy technology. These latter programmes will be associated with LINK. This will avoid duplication and provide for effective technology transfer between Departmental programmes and out into industry. It will also serve to keep academic science better informed about industry's priorities. Two new programmes to start LINK off will be on

- Advanced Electronic Materials
- Molecular Electronics

both supported by DTI, MOD, SERC and industry.

3. E(RD) is meeting on 19 November to give final consideration to LINK and the Secretary of State for Trade and Industry will then report to the Prime Minister asking if she would be prepared to announce LINK. I understand that this could be done by way of written answer to an inspired Parliamentary question, I attach a draft, supported by a Ministerial press briefing. The Ministers concerned would be from DTI and DES as the main sponsors of LINK, probably Mr Pattie and Mr Walden.

4. Mr Fairclough wishes to brief the Prime Minister personally when he sees her on 18 November. he also wishes to touch on the proposal for a Seminar on Priorities for Science and Technology in Spring next year as a vehicle for presenting the Government policy on R & D. This would in some ways resemble the two successful seminars (May 1985 and February 1986) which the Prime Minister held on engineering and technology; but whereas those seminars focussed on how industry could work with higher education to produce the scientists, engineers and technologists required by the British economy, this one would be directed towards encouraging industry to make more effective use of the work done by universities and other research institutions.

CNC

CATHY CUNNINGHAM

DRAFT ANNOUNCEMENT FOR LINK - SUGGESTED TEXT FOR WRITTEN ANSWER TO FQ

The total of Government expenditure on R & D is very substantial both absolutely and as a proportion of the national income and bears comparison with all other technologically advanced countries. But the excellence of British science has not been matched by a rapid pace of application by British industry of the newly emerging technologies. Nor is the private sector investing as much of its own resources in R & D in this country as are our more successful competitors. For its part the Government is therefore actively reviewing its R & D programmes across all Departments, defence as well as civil, with the objective of increasing their contribution towards improving the efficiency, competitiveness and innovative capacity of British Industry. Both the Advisory Council on Applied Research and Development (ACARD) and the Advisory Board on the Research Councils (ABRC) are assisting in this exercise and an Assessment Office on Science and Technology has been established in the Cabinet Office under the Chief Scientific Adviser.

It is essential that new breakthroughs in science, whether they occur in universities, government laboratories or industry, are rapidly assimilated into new products and improved services for sale by British industry in world markets. To this end we are giving particular priority to the development of better partnership arrangements between industry, Government Departments and research institutions of all kinds. I attach great importance to this work, which will receive further impetus from a new programme called LINK. Government will make available £200 million over the next five years to fund half the cost of collaborative research in a wide range of new technologies. All Government Departments with a significant R & D expenditure will take part in LINK but the principal sponsors will be the Department of Trade and Industry and the Department of Education and Science, who will be announcing further details of the programme.

cg/BS



DEPARTMENT OF TRADE AND INDUSTRY
1-19 VICTORIA STREET
LONDON SW1H 0ET

Telephone (Direct dialling) 01-215 5422
GTN 215)
(Switchboard) 01-215 7877

JU509
Secretary of State for Trade and Industry

13 October 1986

CONFIDENTIAL

The Rt Hon Lord Young of Graffham
Secretary of State
for Employment
Department of Employment
Caxton House
Tothill Street
London SW1H 9NF

NBSM

John Daint

THE LINK PROGRAMME

at Has

Thank you for your letter about the LINK programme, received here on 29 September. I welcome your interest in this scheme, and it was helpful to have your comments before the E(RD) meeting on 30 September.

You will have seen by now the minutes of this meeting, which agreed that there was sufficient commitment to enable an announcement of a LINK scheme that included all Departments with major R&D programmes. You raised two specific points in your letter, skilled manpower and small firms. I agree that both should have a part to play in LINK and I have, therefore, asked my officials, in consultation with their colleagues in DES and the E(RD) Secretariat, to take account of your points when drawing up the detailed guidelines for LINK.

I am copying this letter to the Prime Minister and other recipients of yours.

Paul Channon

PAUL CHANNON

Pal

17
19 **86**
BOARD OF TRADE
BICENTENARY

PART 2. ends:-

SS/EMP. to SS/DTI September 1986.

PART 3. begins:-

SS/DTI to SS/EMP. 13 October 1986.



IT8.7/2-1993

2009:02



IT-8 Target

Printed on Kodak Professional Paper

Charge: R090212