SM cc/AD

CONFIDENTIAL

Prime Minister

Although this means more delay, a review of the project does seem sensible. (I am told that Inmos's June deadline is not to be taken seriously).

PRIME MINISTER

INMOS

On my return from America I saw the minute which the Secretary of State for Employment sent you on 3 June urging an early discussion on Inmos in E Committee. I deferred commenting because officials in this Department expected important developments within the next few days.

I entirely agree that we should reach a decision just as soon as possible: I am very much aware of the widespread concern about this matter and I am conscious of the damage that the delay is doing to the reputation of the Government, quite apart from any effect it may have on Inmos.

This delay and some differences of view within the NEB have led Sir Arthur Knight to decide to undertake a review of the project, and this will be related to the company's new Corporate Plan which the NEB expect to receive this week. (The previous Plan, which has underpinned our discussions hitherto, is now over 9 months old). I think that until the outcome of the NEB's review is known it would not be profitable to take our collective discussion further. I hope that the fact that the review has been announced will diminish the pressure on the Government.

The proposal for the involvement of private finance is still being considered but any proposal will necessarily be affected by the review.

/I ...

CONFIDENTIAL

JU

Resolution on phone NJS Ind Pol.

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Secretary of State for Industry

30 June 1980

Murdo McLean Esq
Private Secretary to the
Chief Whip
House of Commons
London SW1A OAA

Dear Murdo

INMOS DEBATE: 1 JULY

We spoke on the telephone this morning when I told you that the Secretary of State would like the Government to table an amendment to the Opposition's motion for Tuesday's debate as follows:-

> That this House recognises the importance of promoting the United Kingdom's micro-electronics industry and welcomes the review which the National Enterprise Board has decided, on its own initiative, to undertake on the prospects of Inmos International Ltd.

I have also conveyed this proposed form of words to Nick Sanders at No 10 and Petra Laidlaw in the Chancellor of the Duchy's Office, to whom I am also copying this letter.

I would be grateful if this form of words for the Government motion could be cleared as soon as possible.

Yours sincerely
Catherine Bell

CATHERINE BELL
Private Secretary

I will press the NEB to reach conclusions as soon as possible but I think we shall have to accept the inevitability of some further delay. However, I will return to colleagues at the very earliest opportunity.

I am sending copies of this note to members of E Committee and Sir Robert Armstrong.

KJ

K J
13 June 1980

Department of Industry
Ashdown House
123 Victoria Street

CONFIDENTIAL

SECRETARY OF STATE FOR EMPLOYMENT

Caxton House Tothill Street London SW1H 9NA

Telephone Direct Line 01-213 6400
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The Rt Hon Sir Keith Joseph Bt MP
Secretary of State for Industry
Department of Industry
Ashdown House
123 Victoria Street
LONDON SW1

27 June 1980

Dear Keith

INMOS

In your minute to the Prime Minister of 13 June you undertook to bring the Inmos question back before our colleagues "at the very earliest opportunity", as soon as the NEB's fresh review of the matter had been completed.

I now learn that Arthur Knight reckons that this review, which has been entrusted to a part-time member of the NEB, will require 8 weeks to complete, which would prevent our considering the matter again until well into August.

You spoke in your minute of "the damage that the delay is doing to the reputation of the Government, quite apart from any effect it may have on Inmos". This theme was taken up in the leader-page article in the Financial Times of 24 June, which said:

> "But time is running out for Inmos. Its request for a second £25m in Government funding, which it needs to build a UK factory, has been blocked in Cabinet for six months. Dr Petritz has told the NEB that there must be a decision by the end of the month if the plant is to be built at all. Otherwise, he has hinted, he and his colleagues may consider decamping to the US, where they are confident of getting private backing".

Can the NEB not be told that their review must be greatly accelerated, so that we can be put in a position to decide this question well before the Recess?

I am copying this to members of E Committee and Sir Robert Armstrong.

Yours

CONFIDENTIAL

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PRIME MINISTER
MS
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It is hoped that the attached brief will prove of use for the debate on Tuesday, 1st July 1980 on an Opposition Motion on INMOS.

Conservative Research Department,
32 Smith Square, London S,W,1

RH/JMH
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1. Background

The origins of INMOS lay in the fertile brain of Dr. Richard Petritz Dr. Petritz was director of research and development for the Texas Instruments in the United States. In 1968 he launched a venture capital firm, New Business Resources, in Dallas, Texas and the following year founded Mostek, which is now one of the leading US 'chip' manufacturing firms. Dr. Petritz was joined by Dr. Ian Barron and Dr. Paul Schroeder. Dr. Barron founded Britain's first mini-computer company, CTL, in 1965. From 1971 to the time of the launching of INMOS he was involved in consultancy and academic work. Arguably, the key figure of the founding triumvirate is Dr. Schroeder. Dr. Schroeder is now Deputy Managing Director of INMOS. It was he who designed the industry standard 4K and 16K dynamic RAM's, which are the largest volume products the semi-conductor industry has seen.

For these three INMOS was and is essentially an entrepreneurial venture - in a sector where high risk and entrepreneurship are the key features. Their argument - which they subsequently "sold" to the National Enterprise Board - is essentially as follows. Since the development of the first transistor in 1959 the complexity of integrated circuits has approximately doubled each year. This means that the market for the products involved i both rapidly expanding and very demanding. The size of the predicted market for semi-conductors is over £3 billion a year in 1984. The greatest part of this demand will be - it is said - for a small number of standard products manufacture in very high volume - this is INMOS's target. Over the next five years it is predicted that the most important single product will be the 64K dynamic RAM with an annual market of £500 million in 1984.

The demanding nature of the market is the result of the existence of a number of clearly defined technological "steps". INMOS argue that at each "step" a new entrepreneurial company has emerged as a market leader. In the 1960's it was Fairchild; in the 1970's it was Intel; now in the era of VLSI (Very Large Scale Integration) it might be INMOS. It is difficult, without enormous efforts, for existing companies to up-date their design and production facilities sufficiently quickly - and this gives new-comers a chance.

INMOS believe that at the start of this new "step" forward into VLSI they have special opportunities as a new firm with undoubtedly superlative design skills provided by their team. They call this their "super-star" strategy. Not even the most severe critics of the venture doubt that they in this have succeeded to a high degree. INMOS claim that the 16K static RAM and the 64K dynamic RAM are well chosen to maximise the value of this strategy for,

a) they require "super-star" designers rather than massive injections of funds and

b) they represent the two single largest volume markets for semi-conductor devices over the next five years, and so provide an adequate base for INMOS's further growth. (The 16K static RAM is a high performance, i.e. very rapid, memory component built into an "accellerator unit" to make conventional computers work faster. The 64K dynamic RAM is a general purpose memory component mainly used in the computer industry).

It is important to realise that both for INMOS and for the NEB - and so, perhaps above all, for the tax-payer - it is the next stage of the company's strategy which is most important and probably most risky. A number of other memory products are currently at the design stage in INMOS's UK facility at Bristol. But most important is the projected development of micro-computers. These are complementary to memory products. These micro-processor products are usable in a vast range of goods such as automatic type-writers, sewing machines and cars. General Motors, for example, recently placed a major order

for these products in the US and it is estimated that each car may employ 6 to 8 of them by the late 1980's. INMOS envisage the revenues from these microprocessors as exceeding that from sales of the 16K static RAM in about 1984.

The three originators of the plan to break into the VLSI market thus approached the NEB in 1977 at Dr. Barron's suggestion. It was known that the NEB were already involved and interested in the high technology field. It is said by INMOS that there was a shortage of high-risk venture capital at the time in the US and that in the UK it was simply unavailable.

In the event, in July 1978 the NEB and the Labour Government accepted the INMOS plan and agreed that £50million should be committed to the project in two tranches of £25 million. The second tranche was to be dependent upon the performance and progress of the project subsequent to the payment of the first tranche. In the summer of 1979, as planned, INMOS submitted to the new Conservative Government an up-dated corporate plan and requested the release of the second £25 million. The NEB approved the investment of the second tranche in September 1979.

2. The Present Position

So far almost £4 million has been spent on UK operating costs of INMOS and over £5 million has been invested in manufacturing plant. A total of £20.5 million has been invested - most of it in the pilot production facility under construction in Colorado Springs. At the moment UK recruitment and work on the site of the planned production facility at Bristol has been halted pending the Secretary of State's decision both as to the location of the site and as to the future funding of INMOS. INMOS claim that £1 million has been committed to the Bristol site through architect's fees etc..

INMOS's structure divides it between the US and the UK with the holding company - INMOS International Ltd. - based in Bristol. The intention is to transfer most of INMOS's activities to the UK but at present the viable part of the project is at Colorado Springs as 'INMOS Corporation'. There process development is being carried on in a 25,000 square ft. facility at Harrison Park. Memory product development is also under way. Pilot production is to be located in a 125,000 sq. ft. facility currently under construction at Cheyenne Mountain. INMOS Corporation has 120 staff and recruitment is proceeding rapidly.

The UK picture is very different. Only 60 staff are employed by INMOS Ltd. - the UK company - most being concerned with micro-computer development. INMOS claim that with the expected growth in revenue to £150 million they expect to be employing over 4,000 people by 1984, most of them in the UK. This, however, will depend initially upon the building of the planned facility at Bristol. Design work there has been taken as far as is practicable without Governmental endorsement of INMOS's plans.

The NEB having given its approval to the second tranche after the resignation of the old board and its Chairman, Sir Leslie Murphy, it was up to Sir Keith Joseph to make his decision as to the funding and siting of the project. Consequently authorisation for the siting of the new facility at Bristol through grant of an IDC - which INMOS announced it had selected at the end of 1979 - and for the payment of the second tranche was sought by INMOS from Sir Keith at the beginning of this year. Because of the long delay, resulting principally from the resignation of the old NEB, the new Board under Sir Arthur Knight have embarked upon a further review of INMOS's plans which is expected to take a further 6 weeks or so to complete. The Government is awaiting the result of this further review before it announces its decision concerning the IDC application and that for the second tranche of funds.

3. The Arguments

Those involved in the controversy which has surrounded INMOS since its inception in 1978 have broadly divided into three camps. First, there are those who accept INMOS's strategy, believe that venture capital would not be forthcoming to fund it without the intervention of the NEB and want the NEB's original commitment to a £50 million investment with a 70% equity stake to be fulfilled. They accept the project as an essentially entrepreneurial one with the pursuit of economic rather than social goals in view (see below). They note that:

- US high technology ventures benefit substantially from high defence and space budgets and from high volume consumer demand to a degree which the UK could not hope to emulate without direct funding. They point to the major injections of finance and intervention by the Japanese Government. They argue that with over 70% of semi-conductor production being undertaken by US companies and over 20% by the Japanese only an ambitious bid by government-funded companies in Europe to enter at the "leading edge" of the market can hope to succeed.

- If the second tranche of £25 million is not provided the first tranche will have benefited the US INMOS Corporation which will probably be able to continue but will have done little or nothing to help the UK either in terms of employment or of industrial strategy. Work is already progressing on costly US plant: in the UK there will only be a bill of £1 million for the advance costs of developing the Bristol site which someone will have to pick up.

- In the event of the project succeeding the UK will gain an indigenous semi-conductor capability which- it is argued-no independent country should be without; there will be over 3,000 UK jobs provided; there will be a contribution to net exports of £95 million a year by 1984.

The second group in the controversy adopt many of the arguments used above, but see the INMOS project as essentially a social rather than a strategic economic one. They argue that since INMOS is in receipt of substantial sums of public money it should agree to locate its production facilities in an assisted area in order to relieve the unemployment problem. Mr. Alan Williams, who was Minister of State at the Department of Industry under the last Government, claims that INMOS gave an undertaking to locate its first two factories in an assisted area. INMOS hotly deny this. They claim that the statement in the NEB's annual report for 1978 that "The firm intention is that the United Kingdom production facilities will be located in assisted areas" represented the view of the NEB, not of INMOS. INMOS chose the Bristol site in order to attract the right kind of personnel and - above all - because it is said to be essential for their purposes to develop an "integrated capacity" - in other words ensuring that the research and design and production facilities are side by side. This is crucial in the early stages of chip production because the "yield" of successful chips from each wafer of silicon needs to be raised by continued efforts from a very low initial level. The second volume production facility could go to an assisted area because by then the final form of the product will have been stabilised.

The third group in the INMOS controversy believe that the project has no future and that to inject a further £25 million would be to put in good money after bad. They point to the high development costs faced in the initial stages of such high technology ventures and doubt whether £50 million would be adequate. They argue that it is the use to which micro-processors will be put rather than their volume production which is likely to yield the best opportunities for British companies. They suggest that the high risks, low early returns and highly sophisticated nature of products involved make INMOS just the

sort of venture which Government and its agencies should avoid. They also doubt whether Government is capable of the speedy decision-making which is required in order to survive in a highly competitive market.

In reaching its decision concerning the payment of the second tranche and concerning the grant of the necessary IDC for INMOS to begin construction in Bristol the Government will be bearing in mind all of these sets of arguments. It is at present awaiting the further report from the NEB on the question. The NEB itself will be operating against the background of the guidance given by Sir Keith Joseph in his statement of 19th July 1980 in which he explained the Government's view of its proper function both as far as the regions and its "catalytic" role in the high technology field are concerned. Sir Keith then said:

"I shall also be requiring the NEB to make a substantial reduction in its expenditure in the current year and in the following years.

"I exclude, however, the investments which the NEB has made in a dozen or so newly established high technology companies, chiefly concerned with computer software, micro-electronics and their applications and which I believe justify special attention. The market has been discouraged in recent years from supporting such ventures. Time will anyway be needed for these companies to evolve before the NEB can sell them.

"In the light of this it seems sensible to use the NEB as one means of familiarising the market with new technologies. For my part I see this role as being necessary only until the market is clearly strengthened and I would not wish to put a term to the role now. The budget for it will be limited - but clearly defined. The objective will be to secure in each case the maximum amount of private investment, with a view to full private ownership in each case as soon as practicable. The NEB will be able to re-invest some of their receipts from disposals of these companies in new high technology ventures, but only in partnership with private capital. A market that has met the huge risks of North Sea exploration should find no insuperable difficulty here.

"The Government is also much concerned with the problems of the areas of high unemployment. An element of that regional policy is that the NEB should continue to exercise an industrial investment role in the North and North-West and with small firms, seeking always to maximise private investment and with the objective of transfer of full ownership to the private sector as soon as possible. The NEB's regional role will be very similar to the industrial investment activities of the Scottish, Welsh and Northern Ireland Development Agencies in Scotland, Wales and Norther Ireland respectively." (Hansard, 19th July 1979 Col. 2006)

The Government will further clarify its position on INMOS in due course in the light of its and the NEB's commitment to these objectives.