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6 June 1980

CABINET
MINISTERIAL COMMITTEE ON ECONOMIC STRATEGY

GAS GATHERING LINE

Memorandum by the Secretary of State for Energy

I announced to the House last July that the British Gas Corporation (BGC) and Mobil had agreed to carry out a feasibility and design study for a gas gathering line in the Northern Basin of the North Sea. I received a copy of the report early in April with its main recommendation that a 500 mile integrated gas gathering line should be built as soon as possible with 1984/5 as the target date for completion. We now need to decide urgently whether to encourage the construction of this new pipeline and how best to proceed.

Main Features of Report

2. The attached note by my officials reviews the report and its recommendations. Significant features are:

- (1) capital costs for the recommended system are estimated to be within the range of £0.8 to £1.3b depending upon circumstances;
- (2) there could be at least 12 trillion cubic feet (tcf) of gas valued at around £30 billion to be collected from UK fields alone; the possibly another 8 tcf from 2 Norwegian fields close to the median line. (This is equivalent to 7 to 12 years's gas for BGC at current national rates of consumption);
- (3) the pipeline would also land up to 4 million tons a year of natural gas liquids (NGLs) for petro-chemical purposes;

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- (4) the project appears sound in economic terms both in its own right and by comparison with possible alternatives. It will also provide valuable industrial and employment opportunities.

The Way Ahead

3. I can accept that the case for a new gas gathering system is justified. We now need to decide what we would wish to see in terms of the organisation and financing of the project so that we can influence developments accordingly. I believe that we should proceed by encouraging the formation of a pipeline company (rather than a joint venture) to construct and operate the pipeline; that the pipeline company should have a high debt/equity ratio; that neither BGC nor the oil companies should have a controlling interest in the company; and that there should be a place for financial institutions, large customers, and perhaps the public at large to participate. We now need to move fast to meet a completion date of 1984/85 which is important in terms of avoiding wasteful flaring and in convincing the Norwegians that it is to their best advantage to sell Statfjord gas to Britain through the new line. I am seeing Mr Gjerde, the Norwegian Minister for Petroleum, in London next month and he will expect to hear of firm decisions and plans to proceed urgently if he is to be convinced.

The Balance of Interests

4. I envisage essentially a private sector utility but one in which consumer interests, taken together, could counter-balance producer and financial interests. This should enable a suitable moderation in pipeline tariffs consistent with a reasonable return on investment. It should also help to avoid detailed regulation of tariffs by bureaucratic process with its inevitable frustrations and delays (I can if necessary intervene on tariffs but only on appeal to me). In more detail I favour:

- (1) a pipeline company with around 80 per cent debt finance and 20 per cent equity;
- (2) a 35 per cent share for BGC; a 35 per cent share for financial institutions; a 20 per cent share for producers; and a 10 per cent share for other "consumer" interests (including possibly a Norwegian presence, in the form of Statoil, which they may demand as part of any bargain on Statfjord gas);
- (3) avoiding arrangements or procedures which would give extra BGC control of the pipeline company given PSBR implications;
- (4) promoting immediately the establishment of an Organising Group to work out particularly structural and financial arrangements, together with a tariff philosophy, for the proposed pipeline company. The Group will also need to be directed to consider BP's proposals in the context of the BGC/Mobil report;
- (5) endorsing the target date of 1984/85 for completion of the pipeline. (This date is vital to BGC's efforts to obtain Norwegian gas from the Statfjord field);
- (6) proposing guidelines to the Organising Group for their work in order to take account of the points above.

I think it important to give BGC a significant share as proposed and in the pipeline company. They share the national objectives on gas procurement. They are keen to take part. They have provided the main impetus to the study and have kept things moving since. Their presence will help to convince the Norwegians that the pipeline will not be dominated by oil company and financial interests; and they will provide us with the opportunity to influence procurement towards British industry.

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5. As far as oil companies are concerned, I am reluctant to see the producer share dominated by US companies, while acknowledging the important part played by Mobil to date. Fortunately, British Petroleum are now showing a positive interest in the project and demonstrated their ideas last week in a presentation to Ministers. Their chief concern is that the BGC/Mobil scheme may not go far enough though their proposals are essentially complementary to those of BGC/Mobil. They accept the basics of an integrated gas gathering system as proposed in the report, but they believe from their own surveys that there could be far more gas available and that the line should also feed into other established (and future) lines in order to handle the larger supplies. They recognise that construction of the offshore line should start immediately and they accept the timetable. They would also welcome a BGC presence. They propose to handle NGLs somewhat differently through a British consortium of BP Shell/Esso and ICI interested in sending the gas southwards to link with facilities at Mossmorran, Grangemouth, and Teesside. Though they would not rule out an extension to Nigg as the system reaches peak output. I think these ideas are worth serious consideration and should be explored further in detail. BP are prepared to join the Organising Group and to work with British Gas and Mobil on the design. Their presence in the Organising Group, and their general endorsement of the offshore design, will undoubtedly assist financing.

PSBR Effects

6. As far as the PSBR is concerned, there would need to be a BGC contribution to equity of around £50m to £80m spread over the next five years as capital is called up. This is an unavoidable charge against the PSBR but one which has been reduced to an absolute minimum through the proposed arrangements. No other expenditure by the pipeline company on the basis proposed should count against the PSBR. We shall however, have to pay regard to the detailed arrangements for the pipeline company in order to ensure that this position is not breached. More positively, the BGC involvement in the pipeline company should restrain any moves by producers to set up arrangements aimed primarily at tax advantages to the detriment of the PSBR.

Recommendations

7. I invite my colleagues:

- (1) to agree that we should encourage, as a matter of

urgency, the construction of a new gas gathering line.

- (2) to endorse the concept of organising the proposed pipeline company as a "private sector utility" on the lines described at paragraphs 4 and 5 above;
- (3) to note that I intended to encourage the formation of an Organising Group to that end consisting of British Gas, Mobil, BP, and a financial adviser;
- (4) to agree to an early announcement of these conclusions.

D.A.R. H
6 June 1980

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A NORTH SEA GAS GATHERING SYSTEM

Note by the Department of Energy

INTRODUCTION

1 The Secretary of State for Energy announced on 5 July 1979 that Mobil North Sea Ltd (Mobil) and the British Gas Corporation (BGC) had agreed to carry out a joint feasibility and design study of a pipeline to transport to Great Britain gas from Mobil's Beryl field along with other gas expected to be available in the Northern Basin of the North Sea from the mid-1980s. The report of the study was recently received and copies have been circulated to the Departments together with a summary.

BGC/MOBIL RECOMMENDATIONS

2 The study team's recommendations are at Annex A. They are that a gas gathering pipeline should be built as soon as possible, collecting gas from the UK fields along the whole UK/Norway median line (map at Annex B). A spur from the centre of this area should land the gas at St Fergus, the terminal also for existing Northern Basin gas pipelines. Processing facilities for natural gas liquids (NGLs) such as ethane, propane, and butane, should be sited at Nigg Bay. The pipeline should accept gas which has undergone a minimum of expensive offshore processing, and should be designed with future fields in mind.

THE ECONOMIC CASE

3 We have examined, using the cost data established by the BGC/Mobil team, whether construction of a gas gathering pipeline is worthwhile in economic terms. Our first analysis was restricted to a basic gas gathering pipeline which would serve fields in the

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central area of the northern North Sea. Thereafter, we examined whether collecting gas into the pipeline from fields further north and south would be better than flaring the gas or leaving it in the ground. Interested Departments have examined the analysis and accept that the economic case for a new pipeline is entirely sound. Calculated at a discount rate of 10 per cent over 20 years, the basic central system would give a net present value (NPV) of £612m as compared with an NPV of £456m from collecting the gas through existing pipelines. Separately, an extension north would give an NPV of £117m; and to the south would give an NPV of £410m as compared with flaring or leaving the gas in the ground. Overall, there is clearly a more than sufficient economic case for the project. That case would be even further improved if the additional gas availabilities supported by BP are confirmed.

4 Furthermore, Department of Energy expectations of future gas prospects confirm that, as well as being economically sound on known gas, the proposed offshore geographical configuration (with a reservation about the exact location of the central junction platform and the size of the southern leg) would encourage the development of oil and gas reserves and stimulate further exploration. The proposed pipeline capacity is essential if we are to continue our policy of trying to win further Norwegian supplies; in any event the history of gas pipelines is that laying extra capacity has rarely, if ever, been regretted (there are huge economies of scale). Construction of the pipeline would provide valuable industrial and employment opportunities.

GAS QUANTITIES AND VALUES

5 Reserves of firm UK gas, that is gas from fields known or expected to be on stream by the second half of the 1980s, could amount to about 5 trillion cubic feet (tcf) valued at some £12b at current prices; together with an addition 7 tcf from other UK fields likely to begin producing in the 1990s. If gas from the Norwegian fields Statfjord, Heimdal and Sleipner were added, total reserves could reach 20 tcf. (For perspective, BGC current sales of gas are around 1.6 tcf per annum). The new line would build up to provide about a quarter of BGC's supplies in the 1990s. The pipeline would also land up to 4 million tons p.a. of NGLs.

TECHNICAL ASPECTS

6 The pipeline would operate at higher pressure and carry a richer gas mixture than any previous gas pipeline in the North

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Sea. Neither the specifications for the pipeline and associated equipment nor the laying techniques are novel. The study team carried out detailed studies on a very wide range of typical North Sea well streams to be connected to the line to confirm its design philosophy. There remains a slight risk that actual operation capacity may be found to be a little less than predicted capacity (but equally it may be greater than predicted). On the other hand the approach recommended reduces the amount of complicated plant requires offshore and therefore the risk of field delays of which we have plenty of experience. The Department's engineers are satisfied that technically the recommendations are entirely sound and BP agrees with the technical philosophy.

COSTS

7 The capital costs for the recommended pipeline system and treatment facilities onshore are estimated to lie in the range of £0.8bn to £1.3bn (January 1980 prices), for a system designed to collect UK gas only. To add Norwegian Statfjord gas alone, the most likely candidate, would add a further £60m to costs.

NORWEGIAN GAS

8 The pipeline would take the UK's share of gas (0.5 tcf) from the Statfjord field, for which Mobil is the Norwegian and unit operator. BGC would also like to purchase the Norwegian share of Statfjord gas (2 tcf) and gas from other Norwegian fields, if the price is right. The Norwegians, however, are unlikely finally to commit themselves to a gas disposal policy design until Spring 1981, which is after the time when the pipeline design should be frozen if the line is to be ready by 1985 to minimise UKCS flaring. The recommended pipeline system is sized to allow Norwegian Statfjord gas to be accepted but minimise the investment which could have been avoided if BGC fails to win that gas while also minimising the extra investment required if BGC wins extra Norwegian supplies.

NGLs AND PETROCHEMICALS

9 The NGLs landed through the new pipeline would present an opportunity for both new and alternative supplies for the UK petrochemical industry based on more secure and possibly cheaper

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feedstocks than oil-based feedstocks. The minimum flow identified in the report would yield more than enough ethane for an additional world-scale ethylene cracker. The propane, butane and natural gasoline can be used for petrochemical purposes or sold in the UK or abroad in place of oil derivatives.

10 The report envisages that the NGLs would be separated from BGC's gas at St Fergus and piped westwards to a greenfield site at Nigg Bay where they would be separated (fractionated) and the ethane supplied to an ethylene cracker. The Dow Chemical Company (a major US chemical company) owns the available land in Nigg Bay and has announced its interest in developing petrochemical plant based on the NGLs, and it would be difficult to build the necessary facilities there without Dow's co-operation. Meanwhile both Shell/Esso and BP have declared an interest in acquiring ethane from the new pipeline for their sites at Mossmorran and Grangemough; with ICI they have produced an outline plan for landing the NGL south for treatment successfully at Mossmorran, Grangemough and Teeside. While there are logistic and planning difficulties in such a route, it could be advantageous and requires more detailed examination than has been given it in the Report. This a matter for further consideration by Departments.

THE PIPELINE ORGANISATION

11 The existing gas pipeline on the UK Continental Shelf (UKCS) have been constructed as joint ventures between licensees each of a single field. However, the proposed new pipeline will connect up initially to a dozen fields and will serve the interest of the far larger number of oil companies involved in them. Moreover, the fields supplying gas to the line will change over the years. A joint venture of so many shifting parties would be difficult to handle operationally and would be difficult to organise since the capacity of the line would exceed that needed to carry only the gas from those fields with approved development programmes and could involve heavy costs to the PSBR over the current FESC period. (See Annex C). To achieve the necessary firmness and continuity of direction, a company structure is a far better approach. There are ample precedents in North American for such transmission companies.

12 The new pipeline will be in a monopoly situation because of its inevitable nature and location. We need to ensure that that monopoly position is not abused to discriminate unfairly against newcomers to the system, whether they be licensees of new fields or new customers for the gas and NGLs, or to extract unjustly high transmission charges to the detriment of the consumer. On the other hand, detailed State regulation of tariffs, as practised in the USA, requires a large bureaucracy, adds noticeably to the costs of gas supply, and creates long delays which would destroy the target time-table for the new pipeline and delivery of gas.

13 The Secretary of State's powers to grant access, on appeal, to third parties and to set tariffs on appeal and the powers of the Monopolies Commission to make recommendations on monopoly situations can help in this situation. However avoidance of monopoly abuses would be much facilitated by a combination of:-

- (i) a pipeline company with a mixture of consumer (predominantly public) and other private interests but with no one interest predominantly;
- (ii) a tariff system proposed by the pipeline organisation according to an agreed philosophy, endorsed by Government, and embodied in the pipeline company's constitution;
- (iii) open access to both producers and customers embodied in the constitution;
- (iv) Owners with commercial interests which match so far as possible the national interests including that of tariffs which would protect consumer interests.

OWNERSHIP STRUCTURE

14 Much of the risk involved in the project will be borne under contractual arrangements by the licensees and British Gas, not by the pipeline company. We should therefore aim at as large a proportion of debt in the total capital of the pipeline company as is consistent with that risk. A significant involvement in the equity of the company by both British Gas and the producers appears to be needed for several reasons:

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- (1) only BGC and the oil companies have the technical knowledge and the incentive for completing the pipeline project to target date of 1984/85;
- (2) British Gas most shares the national interest in securing supplies of Norwegian gas;
- (3) on tariffs, BGC has every incentive to minimise tariffs for transport of gas consistent with raising the capital needed for the pipeline;
- (4) as a class, producers share that incentive but any particular licensee may be in a position where his interest in the pipeline profits outweighs his interest in production profits;
- (5) a multitude of producers will be involved at differing times over two or three decades, and a continuity of interest (represented particularly by BGC) could be important in terms of orderly management and operation.

15 However, there is no need for either British Gas or the producers (represented largely by American oil companies) to have a controlling interest in the organisation; and there would indeed be obvious advantages in including financial institutions, large customers for NGLs in particular, and perhaps the public at large.

PSBR

16 The quantifiable effects on the PSBR of different forms of ownership structure are described in Annex C, prepared in agreement with the Treasury and Inland Revenue. It concludes that over the rest of the century there is little to choose between a joint venture and a company with 40% of the equity held by BGC though the latter holds advantages in the short term. In any case the effect on the PSBR which depends on the form of the ownership structure is slight in comparison with the total effect of the project. The effect of giving BGC a 40% share is limited to about £10m in each of the next 5 years for the basic system covering central fields.

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NEXT STEPS

17 The report is not a formal pipeline application, and calls at this stage for no more than a general reaction from Government. The initiative rests at the moment with BGC and Mobil, who are anxious to move ahead rapidly once Government has signalled its general agreement to the overall concept outlined in the report. Unless the pipeline is completed by 1985, we run the risk of increased flaring, more difficulty in getting Norwegian gas, possible conflict with the Norwegians on pipelaying barge commitments, and the loss of UKCS gas to the Continent. If target dates are to be met, a project team should be set up as soon as possible to undertake detailed design work, prepare formal applications for pipeline consents and planning permissions. There is no practical alternative to having BGC and Mobil to organise this team: bringing in new leaders would delay the project probably by at least a year to the detriment of important purposes in mind.

18 Large scale commitment to capital expenditure is not required until the end of the year when the pipe has to be ordered and contracts placed for pipelaying. However before then, a pipeline company has to be established to cover these financial commitments and to put forward the formal applications for consents and permissions. Detailed work is needed to elaborate the capital and corporate structure of that company, to draw up financing plans and tariff structures, and to plan the staffing and organisational structure of the company. The resources and expertise for this work are to be found with the producers (with their international experience), and with financial institutions in the City. The most promising approach would be to have the work done by an Organising Group of BGC, a financial adviser, and Mobil and possibly two or three other producers. Government interests could be represented by an observer from the Department of Energy.

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Conclusion

19 We conclude that offshore, the approach recommended in the report is well designed to collect the known gas deposits in the Northern Basin and provides flexibility for the collection of future gas finds. The scheme proposed promises to be both viable commercially and robust, and to give a far superior return to the nation than other possible alternatives. Onshore more work needs to be done on possible arrangements for handling NGLs. The target date for completion of 1984/5 is attainable if matters are pressed forward with urgency. Construction and operation of the line are best entrusted to a pipeline company rather than to a joint venture. Both British Gas and licensees should participate in that company; neither should have a controlling interest; and a significant share of the equity should be held by financial institutions. As much as possible of the pipeline should be financed by debt raised by the company. An organising group should be established to work out structural, financial and tariff details.

20 We propose that Ministers should:

- (i) endorse in broad terms the recommendations in the BGC/Mobil report as they apply offshore and with a target date of 1984/5 for completion;
- (ii) invite BGC and Mobil to proceed to the detailed design of the pipeline and associated facilities;
- (iii) invite Departments to investigate more thoroughly the alternatives for disposal and treatment of NGLs in consultation with those concerned;
- (iv) approve the establishment of an Organising Group comprising at least a financial adviser, Mobil and BGC with a view to drawing up a prospectus for a pipeline company;

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- (v) announce, in the form of an answer to a written PQ, the steps outlined above as soon as the Organising Group has been formed.

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ANNEX A

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BGC/MOBIL REPORT

RECOMMENDATIONS

1. A new offshore pipeline system should be built to collect gas from UK fields in the Northern Basin between latitudes 56°N. The offshore pipeline should be a 36" diameter line originating near Statfjord and landing at St Fergus via T Block. The Northern Fields consisting of Magnus, Murchison, Thistle, NE Thistle, UK Statfjord, Beryl A/B and SW, 9/18, 9/19, S. Brae, and T Block fields should be connected to the trunk line via laterals (or directly). A southern leg of 22" diameter pipe should originate at Fulmar and connect to the trunk line at the Thelma junction. Andrew, Lomond, Josephine and 30/17b should connect to this leg via laterals.
2. At the St Fergus landfall, facilities should be installed to process the gas to meet BGC specification and to extract NGL. The NGL should be piped overland to Nigg Bay where they should be fractionated into component products and stored prior to export or use as petrochemical feedstock. The possibility of transporting NGL to other locations where a market for them may develop should be kept under review as the landed quantities increase.
3. In order to minimise offshore processing costs and to facilitate the production of a tanker loadable crude oil at the production platforms the line should be designed to take a high proportion of natural gas liquids. It should operate at an inlet pressure of 2500 psig and a minimum outlet pressure of 1600 psig.
4. Provision should be made in the design to link up additional fields expected to come into production in the late '80s and '90s.
5. If the foregoing recommendations are accepted, steps should be put in hand forthwith to establish the organisation which is to own and operate the system.

NOTE:

THE SYSTEM INCLUDES
27.9 MILES OF 36" LATERALS
PLUS A TOTAL OF 20.0
MILES OF 22" LATERALS OF PIPE

RECOMMENDED SYSTEM - C*

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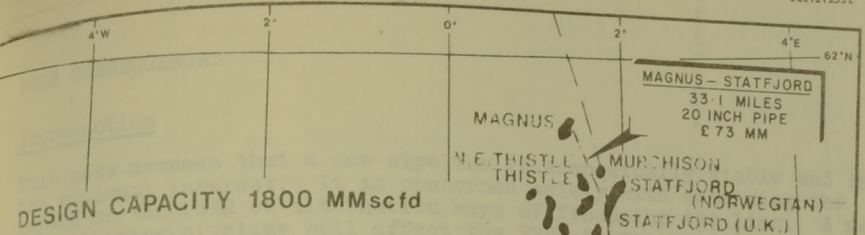
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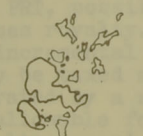


DESIGN CAPACITY 1800 MMscfd

COST SUMMARY

	INVESTMENT COST (£MM)	ANNUAL OPERATING COST (£MM)	CARRIAGE COST (p/th)
OFFSHORE	725	22	2.6
ONSHORE	349	19	1.5
TOTAL	1074	41	4.1**

** BASED ON ALL U.K. PLUS NORWEGIAN STATFJORD GAS



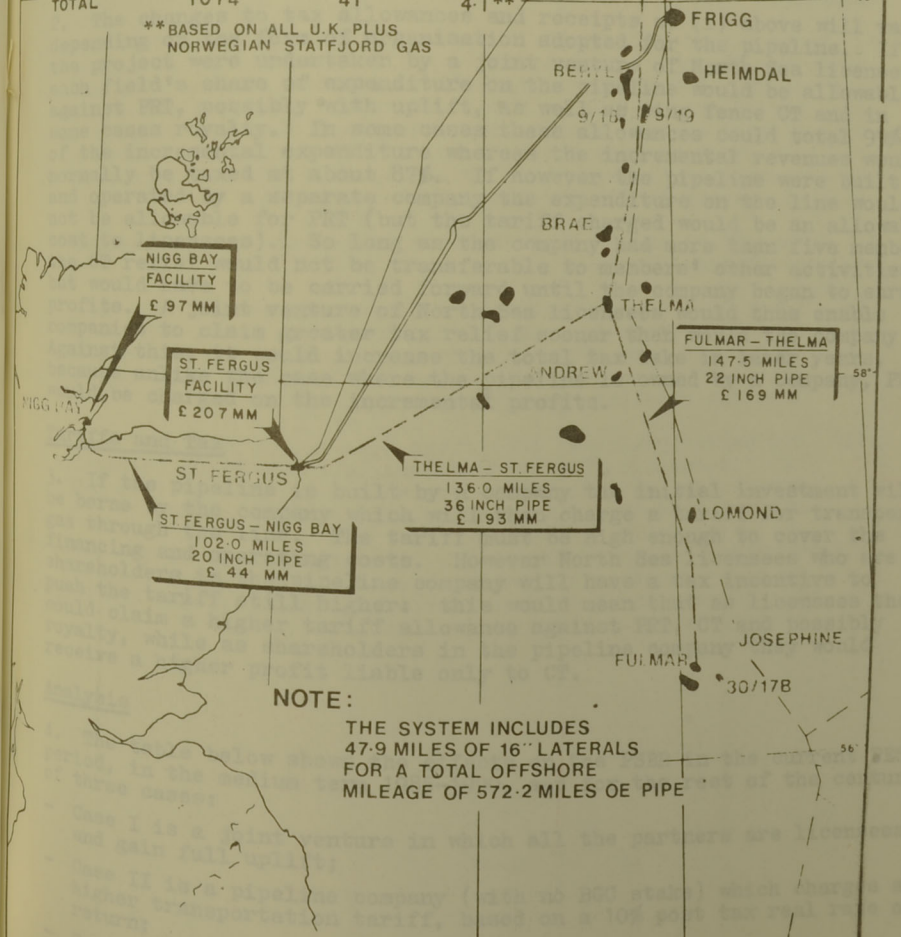
NIGG BAY FACILITY £ 97 MM

ST. FERGUS FACILITY £ 207 MM

ST FERGUS - NIGG BAY 102.0 MILES 20 INCH PIPE £ 44 MM

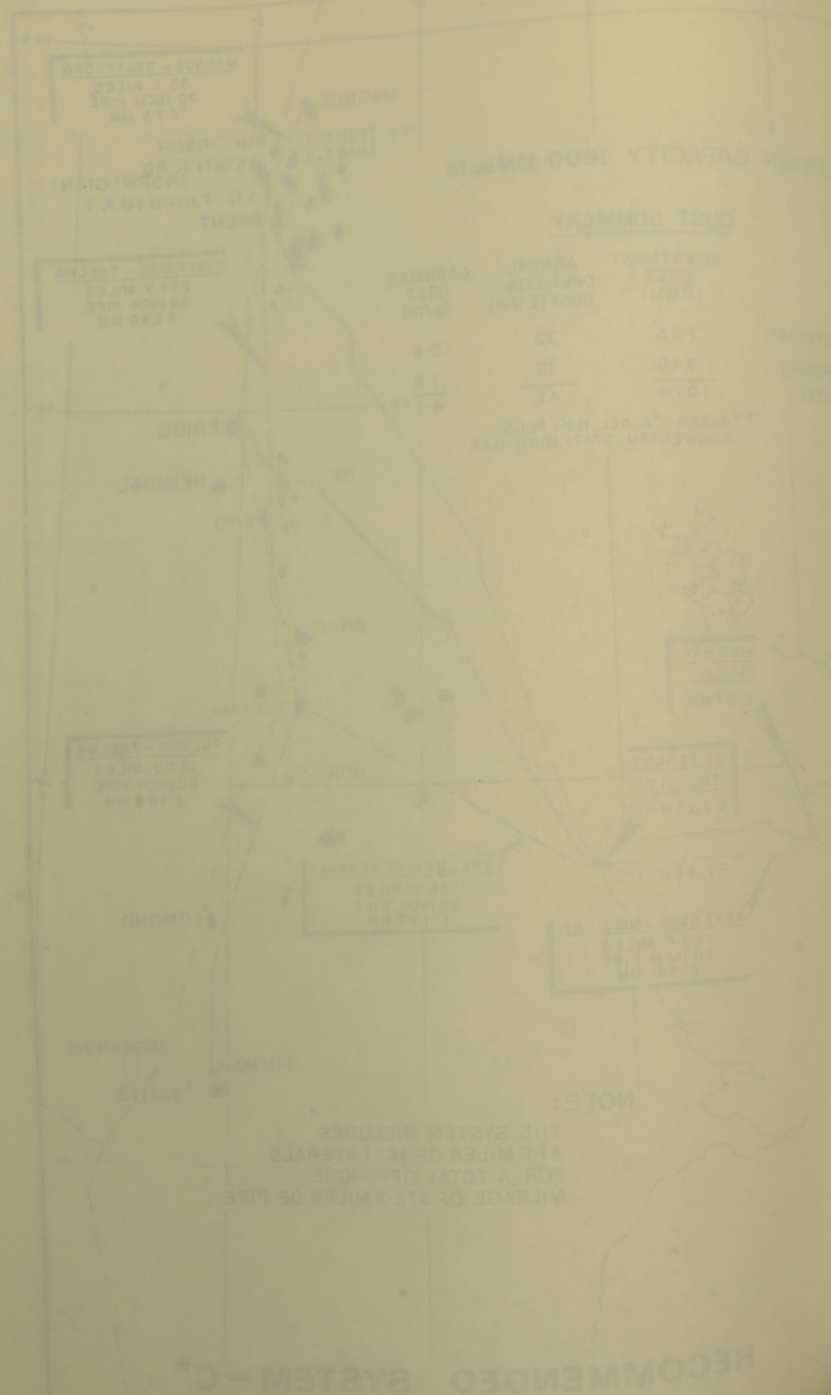
THELMA - ST. FERGUS 136.0 MILES 36 INCH PIPE £ 193 MM

FULMAR - THELMA 147.5 MILES 22 INCH PIPE £ 169 MM



NOTE: THE SYSTEM INCLUDES 47.9 MILES OF 16" LATERALS FOR A TOTAL OFFSHORE MILEAGE OF 572.2 MILES OF PIPE

RECOMMENDED SYSTEM - C*



PSBR CONSEQUENCES

Introduction

This note assumes that a new pipeline is economically viable and in the national interest. It is concerned solely with examining the impact on the PSBR of alternative ways of financing the line. A new gas gathering pipeline will affect the PSBR in two ways:

- (i) tax allowances and receipts will be changed;
- (ii) any public sector investment stake will involve direct public expenditure initially, and later will produce revenues.

If the public sector were in control of the pipeline, all expenditure on the lines, and all revenues from it, would count towards the PSBR.

2. The changes to tax allowances and receipts at (i) above will vary depending on the form of organisation adopted for the pipeline. If the project were undertaken by a joint venture of North Sea licensees, each field's share of expenditure on the pipeline would be allowable against PRT, possibly with uplift, as well as ring fence CT and in some cases royalty. In some cases these allowances could total 99% of the incremental expenditure whereas the incremental revenues would normally be taxed at about 87%. If however the pipeline were built and operated by a separate company the expenditure on the line would not be allowable for PRT (but the tariff charged would be an allowable cost to licensees). So long as the company had more than five members the CT relief would not be transferable to members' other activities, but would have to be carried forward until the company began to earn profits. A joint venture of North Sea licensees would thus enable companies to claim greater tax relief sooner than would the company form. Against this, it would increase the total tax take in later years, because unlike the case where the pipeline is owned by a company, PRT would be charged on the incremental profits.

Tariffs and Tax

3. If the pipeline is built by a company the initial investment will be borne by the company which will then charge a tariff for transporting gas through the line. The tariff must be high enough to cover the financing and operating costs. However North Sea licensees who are shareholders in the pipeline company will have a tax incentive to push the tariff still higher: this would mean that as licensees they could claim a higher tariff allowance against PRT, CT and possibly royalty, while as shareholders in the pipeline company they would receive a higher profit liable only to CT.

Analysis

4. The table below shows the effects on the PSBR in the current PESC period, in the medium term 1985-1990, and for the rest of the century of three cases:

- Case I is a joint venture in which all the partners are licensees and gain full uplift;
- Case II is a pipeline company (with no BGC stake) which charges a higher transportation tariff, based on a 10% post tax real rate of return;
- Case III is a pipeline company charging a lower tariff, based on a 5% post tax real rate of return, and in which BGC has a 40% stake.

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The generation of these forecasts involves making many assumptions on matters subject to great uncertainty. The figures are illustrative and should not be treated as precise estimates.

Discussion

5. Case I assume that the investment costs are shared between all 8 of the fields in the system analysed (which excluded all fields North of Statfjord since their gas may be transmitted through the FLAGS system and the more speculative fields elsewhere on which there is insufficient cost data). In practice 4 of the fields have not had Government approval of their development programmes and are very unlikely to share in the investment until that approval is given. Either the costs attributable to the latter fields will be covered by non-licensees (probably British Gas) or they will be carried as spare capacity by the licensees of the 4 fields with development programmes. In the latter case, the burden on the PSBR in 1980-1984 will be increased to £395m; though tax receipts will be correspondingly higher in the later years as the fields currently without approved programmes join the venture.

6. Cases II and III assume 100% equity financing. In fact in such cases, the company is likely to be highly geared. If we assume 80% debt capital, BGC financing in 1980-84 reduces to some £50m and the total burden on the PSBR to £55m. We cannot forecast consequential revenue flows of this gearing in later years when the company earns profits without precise knowledge of the financial structures of all the companies involved, but it is likely that the tax take from the pipeline company would be reduced in later years.

7. We have also analysed other cases to isolate the particular effect on Cases II and III of:-

- (i) lower tariffs: effectively reducing the tariff from that in Case II to that in Case III decreases the total PSBR this century by over £200m undiscounted because the higher tariff provides greater tax allowances for licensees than tax receipts from the pipeline company's profits.
- (ii) BGC participation at 40%: this does not affect tax receipts but reduces the PSBR this century by £200m-£350m (depending on tariff levels) undiscounted because the receipts from BGC's stake exceed the initial costs of its investments.
- (iii) Transferability of CT relief: transferability of the company's initial losses to offset taxable income elsewhere (allowed if the company had 5 or fewer members) would increase the PSBR this century by about £100m undiscounted.

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£m 1979 Real Prices
(- = a net addition to the PSBR)

Financial Year	TOTAL TAX ON FIELDS AND PIPELINE PROFITS			BGC FINANCING AND RECEIPTS (1)			TOTAL PSBR		
	CASE I	CASE II	CASE III	CASE I	CASE II	CASE III	CASE I	CASE II	CASE III
980/1-1984/5(1) (INCL)	-178/-395*	-4	-4	-	-	-51/-257*	-178/-215*	-4	-56/-26
985/6-1990/1 (INCL)	960	722	871	-	-	164	960	722	1031
991/2-2000/1 (INCL)	4822	4482	4592	-	-	261	4822	4482	4853
Total over period	5604	5200	5459	-	-	168	5604	5200	5627
Discount 5%	2783	2621	2770	-	-	12	2783	2621	2782

* See paragraphs 5 and 6 below

(1) The estimates do not include BGC's share as a licensee of fields in which it has an interest

(2) PSBR benefits starts to flow in 1985.

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