The Outlook for UK North Sea Oil Policy

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1. INTRODUCTION

The purpose of this paper is to look at the UK oil policy process and to gain an understanding of the development of oil policy in the UK. Policy analysis generally concentrates on the economic impact of policy - although this is, of course, of interest to us, we are more concerned with the supply of government policy. Once we have attempted to explain past policy we shall apply some of the lessons to possible future policies.

Of crucial importance to this paper is the notion of the politicization of the oil market; we first look at different interpretations of this term and its relevance to the North Sea oil industry. The main part of the paper then examines political and institutional pressures on the development of oil policy; by presenting various economic scenarios with different oil price forecasts and exchange rate forecasts we then look at possible government policy reactions. The various influences on the policy process (which are due to the structure of government and the political process) are seen to distort both the development of policy and the implementation of policy.

2. POLITICIZATION IN THE UK OIL SECTOR

Politicization is a vague term and may refer to widely differing situations[1]. It is useful to outline some interpretations of "politicization" applicable in the UK oil sector and to emphasise the importance of a politicized oil sector to the creation of oil policies.

The 1964 Continental Shelf Act, which extended effective ownership of any natural resources found on the UKCS to HM Government, in a broad sense politicized the North Sea. All sectors of the economy are subject to an overall political environment or structure but in the case of oil the government owns the property rights of resources in the sea-bed. Hence, unless it was going to explore for and develop the reserves itself, the government had to establish certain rules to transfer the rights to search for and produce oil to the private sector. Indeed the initial licensing decision not only transferred ownership but also set the rules by which the private sector could search for, and later develop, any resources. So, from the very beginning, the government needed to create a licensing framework, which, once established, meant it had the potential to make decisions affecting the oil sector based on political rather than economic or commercial criteria.

Thus the decision to employ a discretionary rather than competitive bidding system of licence allocation had far-reaching implications for the oil extraction sector[2]. A discretionary system is likely to be favoured strongly by government bureaucrats in the Department of Energy because of the power and increased workload it would involve. Decisions are based on vague criteria open to wide interpretation and the decision-making process is protected from public scrutiny and accountabiity due to the imbalance of information which is in turn a result of, at least in part, official secrecy and the excuse of commercial confidentiality. As a result of this process, bureaucrats can maintain that decisions are made by politicians based on their consideration of the advice of impartial and objective Civil Servants. On the other hand, bureaucrats in the Treasury may favour auctioning, providing early revenues. It seems that the combined interests of the Department of Energy and the oil industry (which has itself gained expertise and familiarity with the discretionary system over time) have by and large overruled Treasury interests. It is worth noting that the conflicting pressures within the policy-process have meant that auctions have been used periodically in conjunction with discretionary licensing rounds.

The licensing system laid the foundation for political involvement and manipulation in the oil sector. Moreover, it necessitated the introduction of an oil tax in order for the government to capture the economic rent passed to the oil companies via the discretionary licensing system. The 1960s were relatively free from government intervention in the North Sea and the government, keen to attract oil companies into the North Sea, created a benevolent economic climate[3]: a policy of "rapid exploitation". The important political - and bureaucratic - considerations at this time were to establish the legislative potential for further politicization in case commercial hydrocarbon revenues were to be found. Whilst the decade prior to 1973/4 was characterized by a lack of government control, the decade since has been called the oil policy decade[4]; characterized by a mass of policy.

Thus before the early 1970s oil was subject to political influence in the UK but several factors in the early 1970s combined to change crucially the nature of politicization in the UK oil sector. Considerable oil reserves had been discovered and the UKCS was, by 1972, proven as an oil bearing region. The 1973 Report from the Committee of

Public Accounts[5] drew attention to shortcomings in the existing tax regime maintaining that the Exchequer would not receive a "fair" share of oil revenues. Furthermore, disruptions in the domestic coal industry focussed attention on the dangers of not having a secure source of energy - a danger which was emphasised when the government failed in its attempts to direct BP oil to Britain during the winter of 1973-4. By the end of 1973, the world oil market was in a state of upheaval. The oil embargo and the quadrupling of the price of oil inevitably thrust North Sea oil to the forefront of the public consciousness. The government was seen not to be in control of British resources and political parties perceived a necessity for oil policies.

Thus the political nature of the UK oil sector had changed dramatically and many of the policies introduced since 1974 were a reaction to the highly politicized oil market of that time. The increased political importance of the North Sea generated considerable information and comment in the media. At this stage voters began to demand policy and the political parties, generally unclear as to voter preferences, were keen to develop policies so as to maximize the vote-capturing potential of a highly politicized issue. The dangers of not formulating policy were considerable, votes could be lost to a competing party or to a rival faction within a party.

The increasing level of politicization manifested itself along four major policy fronts; (i) the establishment of a NOC, (ii) oil depletion policy, (iii) oil taxation and (iv) licensing policy. The major reasons put forward for the creation of BNOC on 1 January 1976 were that it would permit control over the disposal of North Sea oil and be an effective instrument by which a national oil policy would be implemented. The establishment of BNOC by a Labour Government was overwhelmingly a political act in order that the government would be seen to be protecting a national asset, controlling the activities of foreign oil companies and putting forward the British interest within the industry. An important factor - given the nature of the Labour Party at that time - is that the creation of BNOC could be seen as a "socialist" action thus placating Labour ideologues.

At the same time the existence of BNOC added an additional organization, with its own criteria and preferences, active in the oil policy process. Hence it would be possible for BNOC to engage in tactical and strategic bargaining attempting to steer, or at least influence, government policy.

BNOC's status in the offshore industry was unclear and its terms of reference vague. Was it a competitor in the industry or a neutral partner of the oil companies, listening and advising the government? Because of the BNOC presence in North Sea consortia it would have direct access to considerable information. Thus there would be an imbalance of information between BNOC and the government providing BNOC with the potential for influencing oil policy; possibly lessening the Department of Energy's influence.

An important policy which is conspicuously party political is always liable to be changed by a subsequent government keen on differentiating its policies. In 1982 the Conservative Government privatized the exploration and production sectors of BNOC. Whilst privatization was central to overall Tory policy - with considerable party support - the Labour Opposition pledged its commitment to re-nationalize Britoil.

A "ratchet" effect of government may be seen in the trading arm of BNOC remaining in government hands. The Conservatives recognized the political value of BNOC; both in its ability to control disposal and in its ability to act as intermediary between government and industry on policy issues. On occasions since the beginning of 1983 the government has used BNOC in order to intervene in the oil market and attempt to maintain oil prices because of the importance of tax revenues. The abolition of BNOC announced in March 1985 seems to have been a result of the continual criticism of BNOC being employed to intervene in the market by the Tory Government. More importantly, the losses made by BNOC since the autumn of 1984 (due to BNOC having to sell large quantities of oil at the spot price having bought it at the higher, official price) caused the government considerable embarrassment.

With respect to oil depletion policy, successive governments since the early 1970s have acted ambivalently. On the one hand governments have accepted that there has been a political necessity for a depletion policy because, as a result of the increased politicization of the oil sector in the early 1970s, of the need to be seen to be in control. There is a desire for clearly visible policies which may be undertaken in the short term; this results in the immediate creation of policy "infrastructure" which may be implemented at some later stage. On the other hand, when in government, politicians have felt unable to implement such a policy probably not so much because of the economic wisdom (if any) of such a policy but more likely because if production cutbacks were imposed the loss of short-term tax revenues would be unacceptable to the Treasury. Government bureaucrats would generally be satisfied with the existence of the legal machinery of depletion policy as this would involve constant re-appraisal and monitoring offshore activities (hence increasing workload and improving status) whether or not a policy were actually implemented.

As stated previously, the discretionary licensing system passed economic rent to the oil companies. Thus the economic rent had to be recaptured by the oil taxation system. The 1973 PAC Report highlighted the inadequacy of the existing tax system and recommended the introduction of a specific oil tax. The oil taxation system set up by the 1975 Oil Taxation Act is characterized by its complexity and its instability. These two characteristics are extremely important to the tax bureaucrat both in government and in oil companies. Complexity gives tax experts exclusivity of knowledge whilst instability provides continuous assessment and updating of information and tax strategy. The result may be that the bureaucrat has an ability to influence policy - for instance advising against the introduction of a new system - or at least the bureaucrats' bargaining position is strengthened.

In the four main aspects of UK oil policy the importance of political pressures is clear. The licensing system laid the framework for future intervention and control - the government was involved, but not to a great extent. Later, other forms of politicization in the market occurred; the government coerced private companies to behave in certain ways - for instance attempts to direct BP's oil and in licensing conditions; the government directly intervened in the industry via state corporations, with respect to British Gas in the 1960s and BNOC in the 1970s and 1980s. Other forms of politicization in the international oil market such as war, revolution, the threat of the "oil weapon", sudden price increases all necessitated a political reaction by Britain.

Hence in order to analyse the development of oil policy in the UK and comment on possible future developments it is not sufficient just to look at economic factors affecting oil policy. There is a mutual interdependence of economy and polity and it is the changing nature of this relationship over time which results in various policies being adopted. Therefore we consider political aspects and institutional relationships as well as economic factors when analysing oil policy. It is in these areas of political and institutional influences on the policy process where the economics of politics and bureaucracies become of assistance[5].

Niskanen's[7] model of bureaucracy asserts that due to the characteristics of bureaucratic output and the bureaucrat/sponsor relationship, there will result an oversupply of output. We do not argue this is always and inevitably the case. It is enough, for our purposes, that the ambitions of government bureaucrats are not always coincidental with the ambitions of their political masters; and because of the nature of the relationship between the politician and bureaucrat the bureaucrat may, at least sometimes, have both the opportunity and inclination to influence policy. Thus politicians may desire certain characteristics of policy such as early revenues, being seen to be in control, protecting a national asset because these characteristics add to their chance of holding, or achieving office, or being promoted (i.e.

maximizing their utility functions). Similarly, bureaucrats desire certain characteristics of policy such as complexity, discretionary control, scope for planning and appraisal because these characteristics assist in fulfilling bureaucratic ambitions (i.e. job security, expansion of workload)[8].

3. POLICY OUTLOOK

In the context of the historical development of UK oil policy and of the economic theories of politics and bureaucracies we may now examine future possible policy trends under various economic scenarios. Our benchmark scenario assumes that the crucial economic variables do not change. It is assumed that the price of North Sea oil averages just under \$27.80 in 1985 and from 1986 onwards is constant in real terms (assuming a 6% rate of inflation; which is assumed under all scenarios). The dollar exchange rate is assumed to average £1 = \$1.20 in 1985 and £1 = \$1.30 thereafter. With 34 fields granted development consent already, it is assumed another 75 fields of various size will be given official development approval before 2000 resulting in total UKNorth Sea oil production being around 85m. tonnes in 2000. Table 1 shows that the government tax take (in money of the day terms) under this benchmark scenario falls gradually from over £13b in 1986 to around £9b in the mid 1990s but rises again to over £11b by the end of the century.

It is important to note that our benchmark economic scenario is not associated with a no-change policy scenario. Political considerations will influence the policy process and are likely to include maximizing oil tax revenues, being seen to create or maintain jobs in offshore industries and being seen to be in control of the offshore sector, (for instance by taking action on the real or perceived problems associated with re-entry). Come the mid 1990s, with sharply declining real revenues, it would be consistent with political and bureaucratic pressures for the government to introduce a three tier tax structure in order to maximize its tax take[9]. Fields then, in the mid 1990s, reaching maturity, with most costs sunk, are relatively insensitive to changing economic conditions (see Table 2) and therefore may be subjected to a more stringent tax system. At the same time, fields then close to abandonment (i.e. fields now being developed or coming onstream) would be subject to a more lenient tax system to encourage tail-end production. Also a lenient tax system would be applied to fields not yet declared commercial and to exploration expenditure so as to encourage new developments and maintain work in offshore supplies. Such a three tier structure would presumably be approved of by government departments (and tax experts in industry) whose workload would increase and whose expertise would become more valuable. In his 1985 Budget The Chancellor was expected to introduce tax concessions to promote secondary recovery on projects granted Department of Energy approval since March 1984[10]. That these changes were not forthcoming emphasises the importance of short term revenues to the Treasury, presumably such changes are still a possibility for the future.

With respect to licensing it would be expected that the auctioning of tracts will continue in conjunction with discretionary allocation. The discretionary system gives the government the ability to reward or sanction companies and it is likely that it will continue to be used to assist the UK supplies industry (or at least, to appear to) and also to direct activities to certain areas of the UKCS that the government sees fit.

The overt use of depletion controls, for instance production cutbacks or development delays, seems unlikely due to opposition from private companies and also due to the impact on tax revenues. A non-interventionist government wishing to affect the rate of activity in the oil extraction sector has many options open to it in order to defer development or limit production which would not be publicly seen to be against free market principles, (for instance, in licensing rounds or in the submission of work programmes). It maybe the case that an isolationist Labour Government would attempt to impose depletion controls in order to maintain oil self-sufficiency and insist all UK oil is delivered to Britain at some artificially low price. Although this would be attractive to Labour ideologues opposition from the Treasury and from the oil industry would probably halt the policy or at least dilute its impact.

An oil price scenario showing the price of oil falling steadily to $21 in 1987 and increasing at first slightly behind inflation and remaining constant in real (1984) terms thereafter, reaching just under $45 by 2000 is by no means a particularly adventurous forecast. Assuming a low sterling/dollar exchange rate (resulting from low oil price expectations) of £1 = $1.05 in 1985 and £1 = $1.10 thereafter Table 1 (column 4) shows a reduction in government revenues of around a third each year in the 1990s as compared to the benchmark scenario (column 1). In total, a low pound/low oil price scenario would result in a loss to the Exchequer of over £46b between 1986 and 2000 as compared to the benchmark scenario. Under conditions of weak oil prices but a stronger exchange rate (at £1 = \$1.20 in 1985, £1 = \$1.30 thereafter) total government revenues would fall by over 45% (£86b) as compared to the benchmark scenario during this period. Table 3 shows that prospective oilfield projects are seriously affected by the low price low exchange rate forecast. Fields such as Don, Miller and Thelma which look relatively healthy under our benchmark scenario are much less certain to be developed with weak oilfield economics. Table 1 column 5 shows that in the second half of the 1990s government revenues would seriously be affected by fewer oilfield projects due to low prices and a weak pound. Faced with the abandonment or postponement of development projects (resulting in a significant slowdown of activity in the North Sea), it is likely that the government would take steps to improve the economics of oilfields, encouraging new developments. The obvious form of policy change is with respect to the tax system. The three tier tax system outlined above is still a possibility but under this scenario the government might be concerned only with more lenient taxation to encourage new projects and to assist tail end production - and not tightening the system for fields then reaching maturity. In this environment characterized by weak oilfield economics, the government would be in a relatively weak bargaining position with the oil industry. Oil companies would need to be given incentives to remain in the North Sea and any tightening of the tax regime would be ill-advised on this basis as companies would be expecting tax concessions.

An attraction of the discretionary licensing system is that it can be employed to coerce oil companies informally. In times of depressed oil market conditions the government would look to the licensing system in order to maintain activity. The most sought-after tracts might be offered in speeded up licensing rounds,relinquishment terms might be altered - extending the time before part of the area must be handed back and the size of that area may be reduced - and generally more generous terms would be offered to oil companies. The performance of the offshore supplies industry would be of concern to the government and lobbying on its behalf would occur but the government would have little scope for directing oil companies to place orders in the UK.

Any action such as attempting to increase production by the use of depletion controls or of exerting pressure on oil companies via BNOC would be unlikely because of the risk of oil companies retaliating and, ultimately, leaving the North Sea. In a weak market the government would seem unlikely to increase intervention and control. More likely, it would reduce its role and attempt to create a benign economic environment to encourage oil company activity - including rewarding companies remaining in the North Sea.

Under conditions of a strong oil market the government has greater opportunity for involvement and intervention in the offshore industry. With a high oil price - even if accompanied by a strong pound (around $1.50) - and good oilfield profitability, the government would still consider introducing tax changes: a severe system for mature fields, encouragement for secondary recovery but now there would not be the political urgency to consider the overall North Sea production profile since re-entry would be relatively gradual as new fields were developed.

With oil companies keen to enter the North Sea the government would be in a strong bargaining position. Hence the government could further the interests of the offshore supplies industry by coercion via licence conditions or in its discretionary approval of work programmes. Social and political considerations would be likely to be given greater prominence and there could be political pressure for the re-establishment of a national oil company. Department of Energy control would increase and companies would be directed to behave in ways consistent with the ambition of politicians.

Institutional and bureaucratic pressures act in the policy process in an ad hoc manner; they tend to steer or influence policy responding to political and economic factors. Hence types of policy are likely to be favoured; those that tend to be characterized by discretionary planning, complexity, instability and the potential for revision and modification. Moreover, changing economic and political factors are desirable to the bureaucrat as they encourage plans and reviews of policies.

Looking at different oil price scenarios it is often the course of prices within each scenario that is important. It should be apparent from columns 2 and 3 in Table 1 that a scenario could be constructed where the impact of a low pound offsets exactly the impact of a low oil price. Column 4 would thus contain only zero values but the oil policies associated with this outcome would not be the same as those policies associated with the benchmark scenario. A gradual, well-ordered price movement offers less scope for bureaucratic or political involvement than a sudden change in prices - even though the economics may be identical.

Sudden and largescale changes in the oil sector increases politicization but as politicization can increase, then so can it diminish. Pressures politicizing the oil sector in the 1960s and particularly in the 1970s established a policy framework or "infrastructure" - and this framework is likely to remain in place even if North Sea oil recedes from public attention.

4. CONCLUSION

Because of the variety of groups within the policy making process it is likely that institutional factors will influence the nature of policy. We are not suggesting that there will be a straightforward Niskanen-type oversupply of policy output but at the very least bureaucrats and lobbyists will alter - distort - oil policy. The way in which policy is likely to be altered depends on the bargaining strength of agents in the policy process at any moment in time - which in turn depends heavily upon political and economic factors.

However, regardless of the political or economic background, changes in political or economic variables are well received by government bureaucrats because they necessitate reviewing, updating and modifying policies thus increasing planning and advising, generating information exclusive to the bureaucrat and providing potential for the bureaucrat's discretionary behaviour and, for instance, the potential to influence ministers by withholding information or selecting information. The assumption is not of a purely self-interested bureaucrat - although by definition each individual is attempting to maximize personal utility - but it is enough that at various points in time on various issues government bureaucrats desire something different from what politicians may want or perceive is required.

Due to the structure of government (the imbalance of information between politician and bureaucrat, the short-term political time scale, the politician as a layman, the bureaucrat's output being very difficult to measure) bureaucrats have the ability to influence the policy process. From time to time they may also have a desire to influence policy in order to, for instance, protect or further their careers. Hence distortion exists in the policy process in government departments and also between departments. These pressures are in addition to the influences from groups outside government, for instance from producer lobbyists. It should be noted that the different influences on policy from a variety of sources do not necessarily tend to cancel each other out and prevent extremes or excesses in policy: obviously the producer pressure group is going to have a greater impact on policy than a consumer group; and within government it would seem the Treasury view is likely to dominate.

In times of high oil prices or instability in the world oil market, the UK government comes under considerable political pressure to be seen to be in control; politicization is likely to be increasing. High oil prices are often associated with the perception of "windfall" profits accruing to - mainly foreign - multinational oil companies. Because of the unpopularity of oil companies they are in a weak bargaining position and interested groups have an opportunity to influence policy to suit their ambitions. The result is an increase in government intervention and control in the industry.

Low or falling oil prices also cause North Sea oil to move towards the centre of the political arena. Whilst the non-oil economy may benefit from lower oil prices, government revenues - in the short term - suffer and sterling tends to come under pressure. Oil companies are in a relatively strong bargaining position and the government's policy options are limited. Constraints on government behaviour would apply to both Labour and Conservative Administrations and it is unlikely that their reactions would be very different and would largely depend on the state of the parties at any moment in time. Political gestures such as the establishment of BNOC and the privatization of Britoil are largely for the benefit of party members or ideologues. As a consequence the manner in which parties respond to similar issues tends to be similar (note the usefulness of BNOC to the Tories, the existence of depletion controls, the usefulness of the discretionary licencing rounds).

It would appear that the first step to take in order to minimize the distortionary influences on policy is to increase the supply of information generally available. Thus accountability would be encouraged and competition of ideas and policies would increase. Moreover, the government could provide funds for consumer lobby groups in order that they might counter-balance the power of producer groups. Simply advocating complete non-intervention seems impractical and leaves scope for a competing political party to capture votes by developing interventionist policies.

TABLE 1 ANNUAL GOVERNMENT OIL TAX REVENUES

	(1) Benchmark Scenario	(2) Change Due to Low Pound	(3) Further Change Due to Low Oil Price	(4) Total Change Due to Low Pound Low Price (2) + (3)	(5) Further Change Due to Fewer Fields	(6) Change Due to High Pound High Price
1986	13.4	3.1	-2.9	-0.2	0	-0.1
1987	11.8	2.9	-5.4	-2.5	0	-0.5
1988	10.6	2.5	-5.6	-3.1	0	1.2
1989	10.4	2.5	-5.5	-3.0	0	1.5
1990	10.6	2.6	-5.9	-3.3	0	1.3
1991	10.3	2.3	-5.2	-2.9	0	2.2
1992	10.2	2.4	-5.8	-3.4	0	3.3
1993	9.8	2.3	-5.5	-3.2	0	2.7
1994	9.0	2.2	-5.1	-2.9	0	3.8
1995	8.9	2.6	-5.9	-3.3	-0.1	5.6
1996	10.3	2.9	-6.8	-3.9	-0.2	5.5
1997	10.5	2.9	-6.5	-3.6	-0.4	6.3
1998	10.7	3.1	-7.0	-3.9	-0.8	8.8
1999	11.3	3.2	-7.2	-4.0	-2.4	7.9
2000	11.4	3.1	-7.0	-3.9	-3.2	10.1

All money is in nominal terms (£bn)

TABLE 2 OILFIELD PROFITABILITY - ESTABLISHED FIELDS

	BENCHMARK SCENARIO REAL IRR (%)	CHANGE DUE TO LOW PRICE LOW POUND
ALWYN NTH	16.6	-29%
ARGYLL	35.0	0
AUK	28.5	0
BALMORAL	41.1	-24%
BEATRICE	14.5	-7%
BERYL	18.2	-4%
BRAE	19.7	-6%
BRAE NTH	30.5	-19%
BRENT	14.3	-3%
BUCHAN	14.7	-5%
CLAYMORE	21.6	-1%
CLYDE	13.9	-31%
CORMORANT	14.0	-5%
CORMORANT NTH	13.6	-6%
DUNCAN	60.4	-9%
DUNLIN	16.3	-2%
FORTIES	31.4	0
FULMAR	26.6	-5%
HEATHER	10.6	-5%
HIGHLANDER	43.7	-31%
HUTTON	18.2	-6%
HUTTON NW	17.4	-7%
MAGNUS	16.2	-5%
MAUREEN	14.4	-6%
MONTROSE	11.8	-4%
MURCHISON UK	21.4	-3%
NINIAN	14.8	-3%
PIPER	43.1	0
STATFJORD UK	19.2	-5%
TARTAN	9.4	-22%
TERN	25.8	-34%
THISTLE	11.9	-4%

TABLE 3 OILFIELD PROFITABILITY - POTENTIALLY COMMERCIAL FIELDS

	BENCHMARK SCENARIO REAL IRR (%)	CHANGE DUE TO LOW PRICE LOW POUND
ALWYN STH	18.1	-32%
ANDREW	21.5	-33%
BRUCE	10.6	-61%
CLAIR	13.7	-28%
CLAYMORE NTH	27.4	-42%
COLUMBA	33.4	-26%
CRAWFORD	23.7	-18%
DON	14.7	-64%
EIDER	13.4	-44%
EMERALD	29.4	-35%
ETTRICK	21.3	-21%
GALLEY	17.0	-19%
GANNET	30.2	-27%
GLAMIS	23.7	-26%
JOANNE	38.8	-26%
KITTIWAKE	24.1	-32%
LYELL	19.6	-17%
MABEL	25.3	-20%
MILLER	18.9	-41%
MONTROSE STH	24.2	-41%
RENEE	33.2	-21%
SCAPA	39.0	-30%
THELMA	16.4	-55%
TIFFANY	24.8	-38%
TONI	35.8	-37%
003/28	29.8	-35%
030/13	19.5	-53%

REFERENCES

1. E.J. Wilson, "The Petro-Political Cycle", paper presented to the Energy Policy Workshop at the European Consortium for Political Research Conference, April 1984.

2. K.W. Dam, "Oil Resources, Who Gets What How?" (University of Chicago Press, Chicago, 1976).

3. C. Robinson and J. Morgan, "North Sea Oil in the Future, Economic Analysis and Government Policy" (MacMillan, London, 1978).

4. P. Kemeis and E. Wilson, "The Decade of Energy Policy", (Praeger, New York, 1984).

5. "North Sea Oil and Gas", First Report from the Select Committee of Public Accounts, House of Commons, Session 1972-3, (H.M.S.O., London, 1973).

6. A. Downs, "An Economic Theory of Democracy" (Harper and Row, New York, 1957); B. Frey, "Modern Political Economy" (Martin Robertson, Oxford, 1978); "The Economics of Politics" IEA Readings 18, 1978.

7. W. Niskanen, "Bureaucracy and Representative Government" (Aldine-Atherton, Chicago, 1971).

8. A. Breton, "The Economic Theory of Representative Government" (Aldine, Chicago, 1974).

9. D. Hann, "Political and Bureaucratic Pressures on the Development of UK Oil Tax Policy", Scottish Journal of Political Economy, November 1985 (forthcoming).

10. Department of Energy, "Development of the Oil and Gas Resources of the United Kingdom 1984", (HMSO, London, 1984) p.33.