NORTH SEA OIL DEVELOPMENT POLICY: A CASE STUDY OF THE GOVERNMENT-INDUSTRY RELATIONSHIP IN NORWAY AND THE UNITED KINGDOM

*Katherine M. Huger**

> ". . . This essentially international business [in oil], which has always been mixed up in politics, is now increasingly subject to government interference all along the line. The business is, in fact, crisscrossed by a complex pattern of forces which pull in many different directions....There are elements of indeterminateness that were not evident a few years ago. The reason is that the motives of governments are numerous and varied, and their decisions are frequently the result of unpredictable compromises...."
>
> *Petroleum Economist*, November, 1975, p. 407

The first important petroleum strikes in the North Sea for both Norway and the United Kingdom occurred in late 1969 and early 1970.[1] The period of 1971-1973 was marked by great drilling success and excitement over commercial finds. The period of 1974-1976 has seen consolidation of major discoveries and continuing finds in smaller fields. This later period has also been a time of intense political activity as the Norwegian and British governments have sought to establish controls over production and revenues from North Sea oil.

This paper focuses on the government-company relationship in the development of North Sea oil policy in two developed oil-producing countries from 1974 to the present. The evolving nature of this relationship is analyzed by answering the following questions: What are the oil policy objectives in Norway and the U.K. and how were they

*Katherine M. Huger (MALD 1965), is an Assistant Professor at the Baptist College in Charleston, South Carolina.

1. For a brief summary of petroleum finds and beginnings of development in the North Sea, see such sources as **Development of Oil and Gas Resources of the United Kingdom**, Department of Energy Report to Parliament, April, 1976, p.4 (referred to hereafter as the **Brown Book**); and **The Economist**, July 26, 1975, Special Survey, pp. 5-52, for information on reserves and costs.

formed? Which policies created conflict between the host country governments and the private companies and how were those issues resolved? Finally, what types of solutions are represented by the institutional arrangements in each country, and does the pattern of conflict between the governments and the companies in the North Sea fit the general patterns of controversy which have been observed in other oil producing countries? Has this conflict changed or modified policy in any way? In spite of some important differences, it will be seen that oil policy and patterns of conflict in two developed economies closely resemble those already observed in the developing oil-producing countries.

I.

The Emergence of Oil Policies: Objectives and Sources of Conflict

The policy framework for development of North Sea oil was set internationally by the Geneva Continental Shelf Convention of 1958 which gave all seven states bordering the North Sea the sovereign rights to explore and exploit the natural resources of the continental shelf. After boundaries were drawn, Norway established ownership over its petroleum resources by a series of acts and decrees in 1963, 1965, and 1972 which set out rules for exploration and exploitation as well as conditions for royalties, rentals, and lease arrangements. The UK Continental Shelf Act of 1964 gave the British state similar rights to its offshore resources. As a result of these acts the UK and Norwegian governments have subdivided their off-shore areas into a series of grids and invited the oil companies to apply for blocks in a series of licensing rounds.[2] Although some of the license conditions and arrangements have provided useful guidelines for some aspects of government policy, general policy statements and overall objectives for oil resources were not clearly formulated by the governments until they issued their White Papers in 1974. Because these papers are the basis for the current oil policies in Norway and the UK, and because each policy has been the subject of considerable controversy and conflict, the formation of the policy statement and its objectives are detailed below.

Development of Norwegian Policy: The Role of Report No. 25

The Norwegian Ministry of Finance issued its famous study of the "Petroleum Industry in Norwegian Society"[3] in early 1974, although

2.For additional information about this early period of development see: D.I. and G.A. MacKay, The Political Economy of North Sea Oil, Boulder, Colorado, 1975, especially pp. 19-20, and the Shell Briefing Service, Oil and Gas from the North Sea, September, 1974, p.3.

3.Royal Norwegian Ministry of Finance, "Petroleum Industry in Norwegian Society,"

present Norwegian oil policy-making institutions had been gradually evolving since the beginning of the 1970's. In 1971 a separate Petroleum and Mining Department was established in the Department of Industry to handle overall policies and plans; the Norwegian Petroleum Directorate was created within this new department to supervise daily administrative and technical procedures. A state-owned oil company, Den Norske Stats Oljeselskap A/S (known as Statoil), was founded in September, 1972, and was charged with the responsibility of policy administration.[4] A variety of other ministries cooperated with the Ministry of Industry on matters relating to the oil sector, and since 1971 several inter-ministerial coordinating committees have met regularly to exchange information and discuss problems relating to "activities on the shelf." (An organization chart showing lines of responsibility between these organizations is reproduced in Figure 1.[5])

Report No. 25 emerged from the Ministry of Finance's role in one of these inter-ministerial committees, and it was subject to the influences of major political parties, trade unions and other organizations in Norwegian society. The 100-page document made detailed forecasts about the expected impact of petroleum revenues on Norwegian society through 1980, and established a policy to cope with those expected developments. Full government control over all stages of the Norwegian petroleum operation was called for, and government control over the rate of production was deemed desirable, so that the government could delay the exploitation of discoveries made by private enterprise, if necessary.[6]

In Report No. 25, the principal objectives of the Norwegian oil policy appear to be:

- to assert state control over all phases of Norwegian petroleum operations through participation plans,
- to develop Statoil as quickly as possible for this role, and to make

Parliamentary Report No. 25 (1973-74) (hereafter referred to as Report No . 25).

4. For details of these institutions and their responsibilities see Ministry of Industry, "Operations on the Norwegian Continental Shelf," Report No. 30 (1973-74) March 15, 1974 (hereafter referred to as Report No. 30), especially pp. 22-26. See also Office of International Energy Affairs, The Relationship of Oil Companies and Foreign Governments, Federal Energy Administration, Washington, D.C., 1975, pp. 144-146. The first plans for a state oil company were actually raised in 1969-1970, and the organizing committee to develop plans made its recommendations in March, 1971.

5. The total staff of the Norwegian oil bureaucracy at the end of 1973, including all office personnel, totalled 113. Although Report No. 30 noted that new staff additions would be necessary as the oil sector expanded, this seems extremely small in view of the fact that revenues from oil and gas may constitute 12-14% of Norway's GNP by 1980.

6. Report No. 25, pp. 9-11.

Statoil into a fully integrated oil company,

- to increase the power of the state in the economy by using oil revenues to buy up ownership interests in Norwegian industry,
- to use public cost-benefit analysis rather than private profitability standards for investment decisions and long range decision making,
- to control the impact of the oil sector on the economy by maintaining a moderate rate of extraction.

An additional objective of securing a larger share of oil revenues for the state was developed with the revision of the corporate income tax structure in early 1975.[7]

The introduction of this comprehensive policy document did not provoke immediate controversy because the report was the result of thorough consultation with the many interest groups in Norwegian society. It was only in 1975 that signs of more severe controversy in oil policy arose between the government and the companies with respect to depletion control, the government's share of taxation, and the increasing role of Statoil.

Editorials in *Northern Offshore,* the Norwegian Journal of Oil and Gas, and other articles by Norwegian private sector supporters have strongly attacked the go-slow development policy of the government in recent months;[8] the industry believes that unless the policy of the government production ceilings is modified and production possibilities are speeded up through more licensing, future annual revenues for both the state and the companies will be lost by rapidly escalating costs of production in the North Sea. In general, industry feels that present policies are being formulated by a coalition of left-wing party officials, conservationists, and youth organizations who do not understand how oil and gas extraction from the Norwegian shelf will benefit either industry or society.[9]

Formation and Objectives of the British White Paper, 1974

Britain had a reputation as one of the "most benevolent host countries in the world for oil companies"[10] until the Labour Party's return to power in 1974. Although the Conservative Party had started a review of energy policy, it was the Labour Party that completed the reorganization of the Department of Trade and Industry, and created a Department of Energy within that department to formulate plans for North Sea petroleum revenues in early 1974. It is interesting to note

7. H.C. Wainwright, North Sea Oil and Gas, Industry Review, April 29, 1976, p. 15.

8. Northern Offshore, March 3, 1976, and April, 1976, pp. 17-18. Also P. Arentz, "Norway Turns a Blind Eye," The Banker, August, 1975, pp. 904-907.

9. Northern Offshore, March 3, 1976, p. 6 and Arentz, op. cit., p. 905.

10. The Economist, July 26, 1975, Survey, p. 16. See also Office of International Energy Affairs, op. cit., p. 184.

that in the spring of 1974 the Department of Energy was primarily concerned with encouraging British suppliers for North Sea pipelines to meet their target deadlines,[11] and that when the Queen made a speech about the new government's economic programs, references to plans for North Sea oil were cut at the last minute.[12] The release of the government White Paper, "United Kingdom Offshore Oil and Gas Policy,"[13] barely four months later signaled an abrupt policy change.

The terse seven page document called for additional new corporation taxes "to secure a fair share of profits for the nation" and called for a variety of measures including a fully integrated national oil corporation and state participation in existing and future licenses "in order to assert greater public control" and to allow the government "to safeguard the national interest in an important resource which belongs to the nation."[14]

Although many interpreted the taxation and oil company proposals as the doctrinaire response of the Labour Party to control industry, the policy is more heterodox. The following goals are prominent in the White Paper:

- to develop production as quickly as possible and to assert the right of the government to control depletion,
- to capture a larger share of oil revenues from the multinationals for the the state, especially to improve the balance of payments,
- to use the British National Oil Corporation and participation arrangements to secure government control over the production, processing, and distribution of oil resources,
- to use the British National Oil Corporation to encourage private sector and special regional development, especially in areas where "older industrial revolution industries have been declining,"[15]
- to increase the security of oil supplies in the event of another oil embargo,
- to make the UK self-sufficient in energy.

Although the White Paper noted that policies like those of the government "were being adopted with the consent of the oil companies in almost every other major oil and gas producing country in the world, not only those in the Middle East, "[16] the institutional arrangements

11. The Economist, January 12, 1974, pp. 83-84, and March 9, 1974, p. 78.
12. Ibid., March 16, 1974, p. 82.
13. "United Kingdom Offshore Oil and Gas Policy," Department of Energy, July 11, 1974, Cmnd. 5696.
14. Cmnd. paper 5696, pp. 4-5.
15. Ibid., p. 3.
16. Ibid., p. 5.

for policy-making were new and unknown for industry; the companies were particularly concerned about both the swift change in policy and the noticeable lack of details in the White Paper on taxation, participation, and the British National Oil Corporation. Considerable controversy about these proposals erupted between the government and the companies. This conflict initially took the form of the government and the companies challenging each other about statistics on reserve estimates in the North Sea, and other figures on drilling rigs and North Sea costs of production.

The conflict between the government and the companies about the government's reserve estimates is quite revealing because it illustrates both the companies' concern about policy direction and the government's fairness in dealing with the companies. The controversy is as follows.

The UK Statistics Controversy.

The Department of Energy in 1976 observed that the total of proven reserves of oil on the UK continental shelf had increased nearly 30% from the 1974 estimates and now stood at about 1,350 million tons. This change was due to "continued exploration activity and the 24 discoveries made during the year." Furthermore, taking into account probable and possible reserve estimates and oil in areas which are not yet licensed, the reserve total could be as high as 4,500 million tons or nearly 33 billion barrels, according to official estimates.[17] These estimates are controversial because the companies believe that they were politically motivated and were adjusted to coincide with the government's change in policy. It is normal for annual reserve forecasts to change, and doubtless increase, as new oil finds are made, old discoveries are more fully appraised, and technology for offshore extraction is improved. Moreover, since price directly affects the quantity of oil that can be raised profitably, the high level of oil prices since 1974 could have enlarged official reserve estimates. But both the *Economist* and the Scottish analysts, the MacKays, have noted[18] that the official estimates are higher than the estimates of oil companies or independent forecasters and that the expected finds for the unlicensed areas are "most astonishing." Furthermore, they claim that the British government for years had tended to underestimate its North Sea oil reserves, and left the "super-cautious" category of estimates only when they wanted to enlarge the overall revenue pie, so to speak, to make their participation and tax proposals more palatable to the companies and

17. Department of Energy, Brown Book, op. cit., 1976, p. 4-5.
18. The Economist, July 26, 1975, Survey, p. 6, and D.I. and G.A. MacKay, op. cit., p. 6-10.

reduce their protests. The controversy continues as critics of the government's oil policies note the continued and fairly sharp discrepancies between private and official forecasts in recent months.

This is a difficult controversy to assess, although my comparisons of reserve estimates do suggest that the companies have been a bit harsh on the government. If the government drastically increased the size of its reserve estimates in 1974-75, it could have been the result of the major world-wide price adjustments in 1974. That the government's negotiations were planned to begin shortly after the release of relatively "rosy" statistics could be a matter of shrewd political timing rather than political manipulation of statistics.

Also, there does not seem to be any unusual or abnormal increase in overall official reserve estimates released in 1975 and 1976. (See Tables 1 and 2). The increase in 1976 estimates of overall reserves of 90 million tons seems in line with discovery activity and is equally divided between net additions in the proven and possible categories. These forecasts are also in line with forecasts made by the OECD and projections made by the National Institute for Economic and Social Research and the Cambridge University group. (See Table 3.) It is true, of course, that these official forecasts remain about 10.1 billion barrels above the estimates of the very respected Scottish stockbrokers, Wood MacKenzie (see Table 4, Part A), but it should be noted that Wood MacKenzie made no attempt to estimate "possible" reserves, which accounts for 60% of the discrepancy between the two figures.

Public and private estimates are very much in line with each other when it comes to production forecasts through 1980 (see Table 4, Part B). Both private and official sources were in the process of revising downward their annual production forecasts for 1980,[19] and this year was the first time in two years that the government was too cautious to estimate a production profile for UK oil beyond 1980, although Wood MacKenzie forecasts to 1982. It should also be noted that the estimates of Wood MacKenzie, which are more likely to be the cautious ones, fall in the high end of the official estimate range in 1976.

To summarize the controversies surrounding these White Papers, we can say that both Norway and the UK governments have tried to issue clear, objective statements about their policies, but both have raised considerable uncertainty and controversy for the companies operating in the North Sea. In essence both countries have adopted policies with objectives which conflict with each other and are often confusing to the companies. Although the policies of the UK were more hastily prepared,

19. Petroleum Economist, May, 1976, p. 176, and June, 1976, pp. 217-218.

with a set of less experienced institutional arrangements to administer them, we shall see after an examination of the conflict between the governments and the companies about depletion policy and license arrangements, taxation, and participation, that the UK emerges as a more flexible and accommodative partner with industry than does the Norwegian government.

II.

Conflicts in the Government-Company Relationship over Depletion Controls and License Policies

Arrangements that governments make with companies as the companies prepare to explore and exploit the petroleum resources of the host country are obvious sources of conflict, and necessitate bargaining among the participants. The depletion policies in Norway and the license provisions in both Norway and the UK bear evidence of this process of conflict and accommodation between governments and companies. Through an analysis of the plans or procedures that have been achieved thus far in these areas, we can see that the governments in both countries have dominated the solutions to these conflicts and have generally succeeded in imposing their policies on the companies with little real compromise in the long run.

Norwegian Ceilings on Oil Production

The Storting Report No. 25 suggested that a ceiling of 90 million tons of oil equivalents, including 50 million tons of oil, per year would be an acceptable target for the rates of exploitation desired by Norwegian society. This production target is closely related to an economic limit on domestic ability of the Norwegian economy to absorb 6,000 million kroner in oil revenues by 1980.[20] The ceiling is to be maintained primarily by the limited offering of acreage blocks and production licenses, and not by actual regulations over volume of production itself. The production ceilings generated considerable conflict between the government and the business community, particularly as pressures from the world-wide recession increased in 1975. "There is no doubt that the major part of Norwegian industry desires an increase in the tempo on the Norwegian shelf," claimed the industrial journals,[21] and by June, 1976, the Ministry of Industry appeared to be moving to accommodate industrial demands, as the Minister tried to rush Parliament into approval of two production platforms for the Statfjord field before the mid-summer recess.[22] There

20. Aamo, B.S., "Norwegian Oil Policies: Basic Objectives," Energy Policy, March, 1976, p. 67.
21. Northern Offshore, March 3, 1976, p. 6.
22. Forbes, July 15, 1976, p. 52.

are many reasons, however, why the government would wish to avoid further delays in production plans for the Statfjord field, and this move should probably not be interpreted as a major shift in the government's position.

The most significant short-term compromise the government has made with respect to the controversy about production ceilings is probably contained in the long term growth forecasts made by the Ministry of Finance in Parliamentary Report No. 50 during the 1974-75 session. This report includes three sets of projection alternatives for economic development from 1980-2000 based on revenues from a low,medium, and high production alternative.[23] The middle forecast reflects the current policy choice of reaching 90 million tons of oil equivalent production by 1980 and maintaining this constant level of production. The low alternative is based on a revenue stream from reducing petroleum production from 90 million tons in 1980 to about 50 million tons oil equivalents in 1990, while the higher alternative forecasts what would happen to the economy as a result of an increase in petroleum production to 180 million ton equivalents by 2000. Although no definite compromise or modification of the government's policy has been achieved, the government has increased the choices available for discussion in society, and given the appearance of greater flexibility.

How flexible and open to compromise the government will be in the future about production limits remains to be seen. Political developments in 1977, the further desire to use oil revenues as an anti-recession device, or the rising trend of development costs in North Sea oil could force more flexiblility in the government's position. On the other hand, the most recent production estimates for 1985 by the State Petroleum Directorate in its 1975 report, which are far lower than the official ceilings envisaged by the government, may diminish the importance of this issue for the companies in the future.[24] Further evidence about how this conflict will develop will be supplied when the Norwegian Petroleum Directorate issues its field conservation rules later this year.[25]

Norwegian and UK Licensing Policies

The number of blocks offered in each license round and the conditions attached to those licenses have been other sources of conflict between the governments and the companies in both countries. In neither country has there been any real modification of the govern-

23. Ministry of Finance, "Natural Resources and Economic Development," Parliamentary Report No. 50 (1974-75), see especially pp. 60-61.
24. Petroleum Economist, May, 1976.
25. H.C. Wainwright, op. cit., p. 18.

ment's policies during successive license rounds, and plans for current or future rounds of licensing imply greater state participation in and control of oil production.

In Norway, about 35% of the offshore area south of latitude 62°N has been licensed since 1965, and no areas north of that latitude have yet been awarded. There have been three rounds of licensing to date, 1965, 1966, and 1974, with an additional two blocks awarded in 1973 under special procedures. [26] The terms under which production licenses have been granted have become increasingly stringent; the Royal Decree in 1972 raised royalties and rentals and made new rules with respect to participation by Statoil in exploration "with all the initial costs of exploration being borne by non-state companies."[27]

Conflict in Norway between the government and the companies focused on the licensing arrangements: the numbers of blocks being awarded, where, and to whom. The private oil companies, both foreign and domestic, were particularly antagonized by the allocation of blocks during the 1974 licensing round. Bids for 32 blocks had been invited, but only 10 blocks were allocated, which meant that only 1 in 5 of the 45 groups of bidders won anything — "and only then at terms which would discourage some of them from taking up their licenses,"[28] — because participation guidelines were relatively unattractive for the companies. Gulf Oil actually withdrew from all its Norwegian activities in September, 1975,[29] and it is widely suspected that this aspect of Norwegian government policy was one cause.

The companies have also been disappointed by the government's reluctance to open up the area north of 62°N for drilling. The date for drilling plans, once fixed for 1977, has now been postponed until 1978, due to lack of sufficient technical capabilities for this difficult area, according to the government. Current revisions in this policy are now underway, however, and foreign companies may be invited to join Statoil and two other major Norwegian oil companies in bidding for concessions in this area next year.[30]

The sharpest conflict between the Norwegian companies and the government concerns the distinct preference that the government has shown for a partnership of Statoil with the large multi-national companies in its concession awards. The Norwegian oil industry has two major oil companies in addition to Statoil: Norsk Hydro, which is

26. Report No. 25, p. 14, and The Economist, June 8, 1974, p. 85.
27. Office of International Energy Affairs, op. cit., p. 145. This is called carried interest.
28. The Economist, June 8, 1974, p. 85. See also, Christiania Bank of Kreditkasse, Norwegian Petroleum News, Oslo, June, 1974, pp. 4-5.
29. Den Norske Creditbank, Monthly Survey, Oslo, September, 1975, p. 4.
30. Petroleum Economist, July, 1976, p. 275.

51% government owned, and the SAGA Petroleum Group of private Norwegian companies.[31] In 1974, the government stated that "no Norwegian group would at present fully qualify for the award of a block alone or to act as an operator on the Norwegian Continental Shelf."[32] Some changes have occurred since this report, for in July, 1975 it was announced that Norsk-Hydro had become the first Norwegian company responsible for operations on the Norwegian continental shelf. But, by then, private Norwegian companies had begun to seek investment opportunities in oil-related areas abroad — there are six Norwegian companies now involved in oil exploration ventures in the U.S.[33]

In the UK sector of the North Sea continental shelf, about 65% of the area has already been licensed in four rounds beginning in 1964, the details of which are summarized in Table 5.

The policies governing each round of licensing in the UK are detailed by the MacKays in *The Political Economy of North Sea Oil.*[34] It is interesting to note that all of the licenses, except for 15 in the 4th round, were allocated on the basis of non-competitive bidding and at the direction of the Department of Trade and Industry, a policy which has been a source of considerable political and academic controversy[35] since it is argued that the government could have increased its oil revenues by encouraging competitive bids.

After the publication of the government's policy in the July, 1974 White Paper, however, the most important conflict between the government and the companies has centered on the government's proposals for participation. (The apparent resolution of this conflict for licenses already existing will be described in the section on participation.) Since May, 1976, preparations have been underway for a 5th round of licensing with new and considerably more restrictive terms than in the previous 4 rounds.[36] Fees and rents have been increased for the latest round, and the period for relinquishing a certain fraction of the license area has been sharply reduced. The document does, however, clarify policy concerning the participation of the

31. Office of International Energy Affairs, op. cit., p. 143.
32. Report No. 30, p. 50.
33 Den Norske Creditbank, op. cit., July 1975, p. 3, and Christiana Bank of Kreditkasse, op. cit., June 1974, p. 6. and February, 1975, p. 4.
34. D.I. MacKay and G. MacKay, op. cit., pp. 24-29.
35. Ibid., p. 29. See Also comments on the UK system of licensing on a non-competitive bid basis for gas resources in the article by Kenneth Dam, "The Pricing of North Sea Gas in Britain," Journal of Law and Economics, #13, 1970, pp. 11-44.
36. For details see UK Offshore Petroleum Production Licensing, 5th Round, A Consultative Document, Department of Energy, and Press Notice #229 from the Department of Energy, July 29, 1976. Details are also summarized in The Oil and Gas Journal, June 28, 1976, pp. 92-96, and The Petroleum Economist, July, 1976, p. 258.

government with the private companies since it states that BNOC "will be a 51% partner in every license, and that a license will be issued to a successful applicant only upon the conclusion of a satisfactory form of agreement between the (state) corporation and its partners. . ."[37] Although BNOC can decide whether it wants to participate in a discovery, it has agreed to pay its share of exploration work when incurred.

The most critical factor in the conflict between the companies and the government, however, is how BNOC will pay for its share of development costs if it does decide to participate.[38] If BNOC insists on the "carried interest" provisions such as Statoil uses, the companies will have to finance "the very expensive development stages of a discovery" by themselves to be repaid by the government only from future earnings from petroleum production.[39] Therefore, the use of the "carried interest" provision could have considerable impact on the solution of this conflict. If it is not used, and BNOC pays the full share of its partnership as production expenses are incurred, the government will have made a considerable compromise with the companies, in spite of the other restrictive provisions in the 5th round, and the arrangements of the British government will seem "fairly kind" in comparison with those of most other governments.[40] If "carried interest" is used the situation will at least be clear for the companies, but the essential conflict between the government and the companies may have been exacerbated rather than eased.

III

Conflicts in Tax Policy and the Allocation of Rent from North Sea Oil

Disputes about allocation of revenue between a host country government and foreign private companies exploiting natural resources are both natural and common. As Raymond Mikesell points out in his analysis of host country-foreign company relations in his book. *Foreign Investment in the Petroleum and Mineral Industries*, companies obviously want to receive a profit that will compensate them for the costs and risks which they have incurred in trying to extract the natural resources. On the other hand, the state wants to capture its own fair share of revenues from the sale of the nation's non-renewable wealth.

37. Department of Energy, A Consultative Document, p.2.

38. Attention in this respect is being focused on what interpretations will be given to section 10 of the Consultative Document, p. 5.
Petroleum and Mineral Industries, Baltimore, 1971, p. 38.

39. Petroleum Economist, July, 1976, p. 258. .

40. Oil and Gas Journal, June 28, 1976, p. 96.

"Initially," explains Mikesell, "the allocation [of these revenues] is established by agreement among the claimants, but agreements are always subject to dispute and renegotiation."[41] Taxes and royalty payments are principal devices a government can use to secure a larger share of revenues from oil production for itself, and in most oil producing countries the states have used a special tax per barrel or a tax set as a standard percentage of a posted price to increase their revenue take in addition to royalty and regular corporate income taxes.

The formation of tax policy highlights both the conflict between the host government and the private companies and the nature of the solution. Clear illustrations of this conflict occurred in the UK and Norway in 1974 and 1975. After the fourfold increase in oil prices in 1974, both governments initiated new legislation to tax excess or windfall profits from North Sea oil and to secure a larger share of oil revenues for the nation as a whole. It was, however, unusually difficult to design an excess profits tax system that would increase the government's share of rent substantially without reducing the companies' incentive to explore, develop, and produce oil. The standard means of applying an excess profits tax was not considered flexible enough to allow for the great cost variations which existed in the North Sea.[42] A tax with too high a standard percentage of the posted reference price would eliminate most, if not all, the profitability from the small and or very high-cost fields, while a tax with too low a standard percentage would not capture a "fair" share of rent for the state from the larger, more profitable fields. The problem of the so-called "marginal fields" with high exploration and development costs has been an issue of prime importance for the North Sea oil companies. There are marked differences in the degrees to which this problem was recognized and handled.by the Norwegian and British governments.

The Norwegian Special Tax on Income From Petroleum Production

In November, 1974, the Norwegian government proposed an excess profits tax of 40%, which, with the royalty and regular corporate income taxes, would have increased the state's take on profits to 90.8%[43] This plan caused enormous controversy, and was actually withdrawn for modification a month later. However, while the government was in the process of developing its tax policy, the Chevron Company, which was developing a marginal field in Norwegian waters, requested a delay until the tax bill became clarified and was actually

41. Raymond F. Mikesell, "Investor-Host Country Relations," **Foreign Investment in the Petroleum and Mineral Industries**, Baltimore, 1971, p. 38.

42. MacKay and MacKay, op. cit., p. 40-41.

43. **The Economist**, July 26, 1975, Survey, p. 33.

passed into law before it would sign a participation agreement. The government, rather undiplomatically, ignored Chevron's request and later awarded Chevron's take in the concession to British Petroleum.[44]

The tax proposals were modified slightly after Norwegian authorities met with the oil companies. The 25% special tax which emerged in the final plan will be calculated on the "norm" price for oil to be determined by the Petroleum Price Council, and the average tax take for the state will range from 57% to 66% with a maximum of 75%.[45] (Key provisions of this tax are noted in Table 6.) The provisions which relate to the marginal field problem are the sliding scale for royalty payments depending on field flow and the write-offs allowed for capital expenditures. Although the tax rate was reduced from 40% to 25% in the final plan, it is still a harsh one; it cannot be deducted for purposes of corporate tax payments and there are no field by field applications, rapid depreciation allowances for capital expenditures, exemptions, or tax-free production allowances to soften the provisions for the marginal fields. There is, however, no special exemption for the national oil company, which must also pay the tax. In short, both the introduction of the tax proposals themselves and the few allowances for the marginal problem in the final tax law are likely to be fresh sources of conflict rather than even a temporary solution to the natural government-company controversy in these matters.

Indications of renewed conflict over revenues surfaced in March, 1976, when the companies disputed the first "norm" prices set by the Norwegian authorities to compute the tax. The companies felt that the norm prices of $11.70-$11.90 set by the government for the first three quarters of 1975[46] were too high compared to the estimated average price for crude oil from Ekofisk for third party sales in 1975. The difference between the government and company positions involves between $17-$35 million in taxes, but as *Petroleum Intelligence Weekly* commented, "the companies at this point are even more concerned about the principle involved."[47] It is relatively clear, therefore, that no effective settlement between the companies and the government in this controversy has yet been achieved, and that conflict will be continuing, perhaps to the detriment of future exploitation of Norwegian oil by the multinational companies,[48] which have been so

44. Ibid., Survey, p.34.

45. Ibid., Survey, p. 34. Other detailed sources of comment on the Norwegian tax are found in The Petroleum Economist, March, 1975, p. 98, H.C. Wainwright, op. cit., pp. 21-23, and Christiania Bank of Kreditkasse, op. cit., February, 1975, pp. 1-2, and Norwegian Commercial Banks, "New Tax Rules for Oil Activities in the North Sea," op. cit., vol 1, 1975, pp. 5-7.

46. Petroleum Intelligence Weekly, March 8, 1976, p. 4. The retroactive nature of the norm-price application is a further irritant and source of controversy about the tax law for the companies.

47. Ibid., p. 4.

48. The Petroleum Economist, April 1975, p. 135 noted that a group of Norwegian and American companies and another single American company have decided to stop development

highly prized by the Norwegian government as development partners for Statoil.

The British Petroleum Revenue Tax (PRT)

Until the Oil Taxation Act was passed in May, 1975, the state's share of oil revenues was 12.5% royalty and a standard 50% corporate income tax. The Labour government proposed the Petroleum Revenue Tax (PRT), in line with its 1974 White Paper objectives, to increase revenues and to eliminate the possibility that the oil companies would use losses elsewhere to offset North Sea Profits for the calculation of British tax liabilites. Nevertheless, the government was anxious not to discourage the oil companies with tax legislation since another official policy objective was to secure a rapid build-up of North Sea oil production. The government was, then, quite sensitive to the companies' concern with the marginal field problem, and the Labour government (in contrast to the Norwegian government) was said to have "demonstrated a noteworthy degree of good faith by soliciting industry response to its taxation proposals and then subsequently adjusting the tax mechanism to reflect a number of valid concerns and objections voiced by the industry."[49]

The details of the provisions of the Oil Taxation Act are found in Table 6; BNOC, the national oil corporation, it should be noted, is exempt from the PRT. The 45% PRT will be applied to gross corporate profits before the standard corporation tax (and can thus be deducted for corporate tax purposes) on a field-by-field basis. This means that the government's total tax take on a large, profitable field like the Forties could run as high as 70-75%, but because of the many special provisions for allowances, exceptions, and the generous write-off schedule for capital expenditures, the effective PRT rate for a marginal field could be as low as 15%.[50] *The Economist* claims that when the PRT is taken into account only 3 of the 15 British fields will have a discounted rate of return on capital employed of substantially less than 25% which is accepted as a "normal" rate of profitability for companies now operating in the North Sea.[51]

In spite of the moderate and flexible approach taken by the government with respect to development of the PRT proposals, the plan was still strongly attacked in the British financial press as

49. H.C. Wainwright, op. cit., p. 6.

50. The Economist, July 26, 1975, Survey, p. 16.

51. Ibid., Survey p. 16. For a different set of estimates on 6 fields, see Wainwright, op. cit., p. 77.

"elegantly suited to the Civil Service's demands for simplicity" but unrealistic with respect to the "varied cost structures and different financial interests in the North Sea."[52] The problem of the small fields does not seem to have been entirely solved as far as the companies are concerned, because with an estimated $12 oil price and a 45% PRT, the minimum size field which will allow a 25% rate of return on capital is approximately 500 million barrels of recoverable reserves. Eight of the 15 commercial oil discoveries in offshore UK have reserves currently estimated at less than 500 million barrels.[53]

In the months since the passage of the Oil Taxation Act, however, no controversial interpretations of, or further conflicts about, the tax proposals seem to have occurred. Nor has there been any evidence that the legislation, once passed, has resulted in any slow-downs in North Sea activity. The Oil Taxation Act and PRT in the UK should probably be viewed as a joint compromise solution to the problem of allocation of revenues rather than as a source of additional conflict.

IV

Conflicts about Participation Policies To Secure Greater State Control in the Oil Sector

Within the last decade, state participation has become a popular policy among many of the oil-producing countries, particularly in the developing world.[54] It was adopted as part of the Declaratory Statement of Petroleum Policy at the 16th OPEC conference in June, 1968, and participation through joint ventures with the multinational oil companies by the establishment of a national oil company has been seen as an acceptable and often preferable alternative to nationalization. Neil Jacoby in his study, *Multinational Oil*, noted that between 1953 and 1972, fifteen new government oil corporations from both the industrial and developing worlds entered the industry or greatly expanded activities.[55] In each country the companies planned to become fully integrated from exploration and production to refining and marketing of their oil resources. Although government participation through a national oil corporation has been a natural trend in the petroleum industry, this development has certainly been the source of severe government-company conflicts. Disputes about shares allotted to private companies, buy-back prices, development costs, and the basis on which competition between national oil cor-

52. Financial Times, January 6, 1975, reprinted in Britain's Offshore Oil Challenge, p. 10.

53. Ibid., table, p. 4.

54. See M.A. Mughraby, Permanent Sovereignty Over Oil Resources, Middle East Research and Publishing Center, 1966, Chapter IV, and S. Matsumara, "Participation Policy of the Producing Countries in the International Oil Industry," The Developing Economies, March, 1972, pp. 30-44.

55. Neil Jacoby, Multinational Oil, New York, 1974, p. 128.

porations and the private companies takes place are common.

Norway and the UK are no exception to this trend. Both countries have established national oil companies since 1972 and have introduced participation plans as key elements of their oil policies. To understand this final chapter of conflict in host country-private company relationships for North Sea oil, it is important to examine briefly the operations to date of the national oil corporations, and the particular controversies about participation which have arisen.

Statoil Participation Plans in Norway

State participation in North Sea oil, in principle at least, has been a part of Norwegian oil policy since 1969, when it began to be included in licensing agreements with the companies. Although it is said that the government really gained very little influence "beyond what it already possessed in its administrative capacity,"[56] the participation agreements signed with the licensees gave the state an option to participate for from 5% to 17½% in any block in the event of a commercial strike. In all cases the government would participate on a "carried interest basis" only.[57]

When plans for a 100% government-owned oil corporation were finally approved, the company was given all the existing government participation agreements. During 1973 Statoil also became a 50% owner in the companies being organized to build and operate the pipelines from the large Norwegian Ekofisk field, and it became a majority participant in blocks which were later found to contain the giant Statfjord field.

The activities of Statoil continued to expand rapidly in 1974 and 1975, as Statoil increased its company expertise and began to integrate vertically. During 1974, participation with Statoil as a 50% partner became the minimum rule for new licensing arrangements; the company became a novice operator in a partnership with Exxon, and was instrumental in implementing the government's "keyblock" strategy near the UK line.[58] In 1975, the Industrial Committee of the Norwegian parliament voted to allow Statoil to exercise its 50% options in the Statfjord field which meant the company would have to start sharing development expenses. More significantly, Statoil (which already owned a 30% share of a refinery) acquired a minority interest in a newly formed state company, Norsk Braendselolje, which "will supply 24% of Norway's market for oil products and run over 30% of the country's gasoline stations."[59]

56. H.C. Wainwright, op. cit., p.19.

57. Ibid, p. 19.

58. Ibid., pp. 20-21. "Key blocks" are ones which have been singled out by the Ministry of Industry as deserving special interest for government participation in which possibly Norsk-Hydro and Saga Petroleum would be invited to join Statoil in joint-venture agreements.

59. Petroleum Economist, February, 1976, p. 70 and Den Norske Creditbank, op. cit., June,

Initially the governments' participation plans and the establishment of Statoil, which will probably become one of Norway's largest and most important companies, provoked very little conflict or disagreement. There are seven firms in Norway in addition to Statoil which are wholly state owned, and the state has majority holdings in 4 more companies, so that state participation in resource development as a concept was not without precedent. In 1975, however, both the bureaucracy and the companies challenged Statoil's activities.

The bureaucracy has been concerned that Statoil would develop too much independent power outside its control, so Parliament retained the power to fund Statoil. In late 1975, the Industrial Committee of the Parliament cut Statoil's request for an increase in share capital by 14%[60] at a time when Statoil is expected to provide roughly half the capital needed to develop the Statfjord field. Statoil's ambitious plans to become an integrated company have also antagonized Labor politicians who do not favor rapid development of oil resources, as well as the conservatives who would prefer to see the refining and marketing remain in private hands.

Statoil's preference for the multinationals as concession partners has already been mentioned as a source of profound irritation to Norwegian companies. Part of this preference is politically motivated since Labor politicians wanted to exclude Norwegian companies while the opposition has favored allowing any qualified companies to participate with Statoil.[61] It is true that both Norsk-Hydro and Saga have been invited to help Statoil develop its key block strategy and will be allowed to bid on concessions north of 62° next year, but in practice, as *The Economist* reports, "Saga has hardly been showered with lucrative blocks for exploration"[62] in the past and as a result Saga has generally gone abroad to develop its exploration activities.

Statoil's nationalistic preoccupation with developing a pipeline from the Statjord field to Norway (a difficult if not impossible job at present, and certainly a very costly one) has also alienated both the bureaucracy and the companies. The bureaucracy believes the pipeline is too expensive and the companies see no reason why pipelines from the Norwegian fields to the UK are not a satisfactory solution. Statoil prefers to maintain its goal, however, of landing 100% of Norwegian oil in Norway.

British National Oil Corporation and Participation in the UK

The Petroleum and Submarine Pipelines Act passed in November, 1975, gave final legislative form to the proposals in the White Paper

1975, p. 3 and October, 1975, p. 3.

60. Den Norske Creditbank, op. cit., December, 1975, p. 3., and also, The Economist, July 26, 1975, Survey, p. 31.

61. Christiania Bank of Kreditkasse, op. cit., June, 1974, p.2.

62. The Economist, July 26, 1975, Survey, p. 33.

which called for a British National Oil Corporation (BNOC). According to this act, BNOC will be able to explore for, produce, transport, refine, store, distribute, buy and sell petroleum and petroleum products.[63] The company will also have the power to "carry out consultancy, research, and training in petroleum matters, build, hire, or operate refineries, pipelines, tankers, and take over the government's participation interests in UK licenses."[64]

Independent refining and marketing operations for BNOC are not really planned before the early 1980's, although in March, 1976, it was reported that BNOC would probably acquire a small interest in a Scottish refinery to demonstrate that its goal of eventually refining 60% of North Sea oil in Britain was indeed serious.[65] BNOC has also become an operator in the North Sea as a result of agreements completed in July of 1976 for acquisition of the staff, organization, and North Sea interests of the deficit-plagued Burmah Oil Co.[66] As a result of these agreements, BNOC now has a joint interest in an exploration and development company.

However, since BNOC began operations formally on January 1, 1976, it has concentrated most of its attention on interpreting participation policies for present and future licensees. The actions which BNOC is in the process of taking to clairfy participation for new licenses have already been dealt with.

The major decisions which BNOC has made are those which enable the companies to understand what is meant by government participation in existing licensed areas. Since 65% of the UK area in the North Sea had already been licensed, it was obvious that these licenses would have to be renegotiated if participation was to be a meaningful policy. The government's White Paper originally pledged that participation was an option which the companies could choose voluntarily, and that participation would leave the companies "neither better nor worse off." It was also hinted that companies who opted for participation might be favored in the 5th license round, which will be conducted entirely on a discretionary basis.

Companies were troubled by the optional nature of the proposed participation and what the ambiguous "neither better nor worse off" really meant for them. These points have now been clarified, primarily by an exchange of letters between the Department of Energy and two small British companies operating in the North Sea. Companies which

63. Department of Energy, Brown Book, 1976, p.42.
64. Ibid., See Also The Petroleum Economist, May, 1975, pp. 163.165.
65. The Economist, March 6, 1975, p. 86.
66. The Petroleum Economist, August, 1976, p. 315, and April, 1976, p. 138.

agree to participate now understand, according to the *Petroleum Economist* that they will

> have to grant BNOC 51% of their voting powers . . . and the right to buy 51% of their oil at market prices. . . .a company requiring financial support from BNOC toward development costs would be charged an effective rate of interest reflecting commercial banking interest rates and risks inherent in the project.[67]

The participation agreement[68] which BNOC has just concluded with BP is also important both because it defines the relationship between the government and a large multinational oil firm (in which the government has a majority ownership but treats basically as a private firm), and because this agreement is designed to act as an example for other agreements with Shell and Esso, the large multinationals in North Sea oil who have refused to consider participation thus far. This agreement basically calls for:

- an option to purchase 51% of BP's offshore oil after 1977,
- arrangements to sell back 100% of BP oil at market prices for 2 years and subsequent agreement to sell back, retain, and exchange certain specified portions of BP oil from 1979-1989,
- the acquisition of a BNOC vote but no control or veto power in fields where BP operates with other companies,
- the inclusion of BNOC in BP's forward plans for refining and marketing in the UK.

By late spring (but before the BP agreement), BNOC had thus gained control of about 3% of UK reserves through participation agreements with 8 of the 37 companies holding existing licenses in the UK sector of the North Sea.[69]

No portion of the British oil development policy has probably provoked more controversy than the government's participation plans and BNOC. Part of the conflict can probably be attributed to the uncertainties about the meaning of participation during the long lapse of time between the White Paper and the time when details began to be spelled out by legislation and action of BNOC itself. Other objections have centered around the necessity of another government corporation when the UK already had a number of large oil companies, including two of the largest multinationals operating in the North Sea. Although BNOC was seen as a copy of Statoil, reflecting the

---

67. Petroleum Economist, March 1976, p. 83. LASMO and SCOT started negotiations with the government in 1975 regarding a 51% participation in their North Sea discoveries. In order to raise funds through a public loan issue, they asked for and received a clarification of participation policy which they reprinted in their prospectus.

68. Ibid., August, 1976, p. 312.

69. Ibid., March, 1976, p.83.

desire of the Labour Government to copy the Norwegians, it was argued that Britain's nationalized companies and industries have not been a great financial success[70] and that it would take more than the appointment of a highly successful private business entrepreneur to the new national company's chairmanship to make a success of BNOC. Companies were also concerned that the government was not really serious about participation and that it would eventually "go away." The press unkindly described the policy as "Participantomime" or "Participation Charade,"[71] and it was noted that BNOC had made little effort to find staff, and that short leases were being arranged for its headquarters.[72]

There still is no clear understanding how serious BNOC is about becoming an integrated oil company and achieving the government's goal of processing 60% of its North Sea oil domestically. The companies are also worried about the exact price BNOC will use for buy-back arrangements and how it will interpret the market price.

While all these questions have not yet been answered and while participation and BNOC are just in the early stages of making policy a reality, it appears that the gradual and somewhat moderate approach of BNOC in its negotiations with existing licensees has achieved a fair compromise with the companies. BNOC is finally beginning to be trusted and taken more seriously by the companies. Further evidence of whether the current approach of BNOC toward participation will actually provide a lasting solution to this conflict will be available when participation agreements have been negotiated with Shell and Esso and when the 5th licensing round has been completed.

V

Patterns of Government – Company Conflicts and Solutions

The conflict between host governments and companies in the development of natural resources has been compared by Mikesell to a model of a bilateral monopoly where participants on each side use their natural market power to try to achieve price and output levels which will maximize their own individual profits or interests.[73] An optimum solution to this type of conflict, notes Mikesell, is much like a non-zero-sum game where the opponents can achieve greater output or profits if they agree to maximize their *joint* interests rather than their *individual* interests. While it would be impossible to apply this

70. Ball, Robert, "The Grim Failure of Britain's Nationalized Industries," Fortune, December, 1975, see esp. p. 99, p. 166, and p. 168.

71. Economist, February 7, 1976, p. 75, and Petroleum Economist, March 1976, p. 82 respec-

72. The Economist, November 1, 1975, p. 96.

73. R. Mikesell, op. cit., p. 41.

type of analysis in a quantitative fashion to the government-company conflict in the production of natural resources, Mikesell feels that it is possible to divide the solutions which emerge from this type of conflict into three categories:

- development policies which are "warfare" solutions resulting from either the government nationalization or expropriation of company assets, or company withdrawal from exploration and exploitation in the area;
- policies which represent "joint-maximizing solutions" which would result either in an increase of overall output or profit for both parties, or a larger gain for one party with little or no loss for the other;
- policies which have "intermediate" solutions in which there may be some loss experienced by one side or a compromise solution reached which stops short of "warfare."[74]

The type of solution finally achieved in development policy will depend on the relative bargaining strength of both the governments and the companies.

If this type of analysis is applied to the types of conflict between the governments and the companies in the North Sea area, we can begin to identify patterns of solutions already reached in development policies relating to depletion control, taxation, and participation in Norway and the UK. During the 1974-76 period, development policies in Norway, either implemented or in the process of being formulated, have resulted in "warfare" solutions in three instances due to company withdrawals, and "intermediate" solutions in all other cases of conflict between the government and the companies.

In the UK on the other hand, policies relating to depletion, taxation, and participation so far have not produced any identifiable "warfare" solutions, but have resulted in several instances of possible "joint-maximizing" and "intermediate" solutions. In particular, the PRT tax proposals which grant special allowances and considerations to the marginal field problem, depletion control policy which encourages rapid present development, and the possibility of participation plans where BNOC might participate by financing development costs as expenses are incurred, suggest solutions which will actively stimulate further company exploration and exploitation of North Sea resources. For a summary of patterns of solutions in North Sea oil development policy, see Table 7.

How do patterns of conflict and solution as well as policies in the North Sea compare with policies, conflicts, and solutions in other oil

74. Ibid., pp. 51-54.

producing countries?[75] In general, the development policies of Norway and the UK have many of the same objectives as policies formed in OPEC and other oil producing countries, i.e., greater national control of resources, greater share of rent for the state, development and vertical integration of a national oil company, etc. The conflicts between the governments and the companies in the North Seas area are also similar in many instances to the conflicts over taxes, level of production, narrow profit interests of companies, and prices, that have arisen in the developing world. However, the development of policy and solutions to conflicts in Norway and the UK are probably more highly institutionalized than in the developing world, and the governments are more likely to be accomodative and moderate in their attitudes toward the companies in the long run.

It is somewhat paradoxical that development policies in the UK, which are less carefully planned and more abruptly instituted than development policies in Norway, have resulted in more joint-maximizing and fewer "warfare" solutions. The differences in solutions reached in the 1974-76 period in Norway and the UK, however, can probably be attributed to slightly different strengths in the bargaining power of the governments. The governments in both countries, of course, derive strength for their positions from the ownership of their continental shelf resources, and the high market oil prices administered by OPEC. The bargaining position of the governments with the companies in each country is, however, weakened by the high costs and risks attached to the recovery of North Sea oil. But while 60% of the populace in Norway is relatively satisfied with the current stance of Norwegian oil policy,[76] the government in the UK faces the political challenges from Scottish nationalism, and an entirely different and more pressing set of economic problems. The need for oil revenues, their anticipated positive contributions to the chronic balance of payments problems[77] and their favorable impact on growth prospects in the UK, have probably contributed more than any other factor to the flexibility of British policy. Although the size of the oil sector on the Norwegian economy may reach 12% to 14% of GNP in the next 5

75. For a summary of findings resulting from a series of case studies of foreign investment in natural resource industries in the developing countires, see R. Mikesell, op. cit., Chapter 17.

76. The Economist, July 26, 1975 Survey, p. 31.

77. The effects of oil revenues on the British balance of payments have been estimated by the OECD, the National Institute of Economic and Social Research, by Wood MacKenzie and by the MacKays. See "Britain's Oil," Grindley's Bank Review, July, 1975, p. 9, The Economist, July 26, 1975, Survey, p. 14, and MacKay and MacKay, op. cit., p. 103ff. Each forecast is calculated differently, but the OECD in 1975 projected a net positive effect of oil revenues on the current account balance beginning in 1976 and Wood MacKenzie by 1978; MacKay forecast a positive impact on current and capital account by 1979, and the NIESR by 1980.

years compared with an estimate of 2½ % in the UK,[78] Britain has too much at stake in the North Sea to risk antagonizing the companies in conflicts which might result in "warfare" solutions.

The situation in the North Sea is obviously subject to change as improvements in technology for offshore drilling and recovery of petroleum are made and as the external price fluctuates. Political developments, particularly in Norway, during 1977 will also affect the relative bargaining positions of the governments with the companies in the future. As new developments occur, policies formulated in the 1974-1976 period will be changed. However, in spite of the evidence of "warfare" solutions in three instances in the Norwegian government-company conflict, it is likely that policies in both countries will be more accommodative, with both companies and governments searching for joint-maximizing types of solutions. For if solutions to depletion control, taxation, and participation issues are not solved in an institutionalized fashion that is sufficiently agreeable to both parties, development of North Sea oil, with its high risks and high costs, will be severely set back resulting in the loss of both company profits and government revenues.

* * *

Several developments in oil policy have occurred in the U.K. and in Norway since the completion of this study in August, 1976. In the U.K. it was announced during September that BNOC had agreed to pay its full 51% share of development costs with its commercial partners as incurred and not on a deferred or "carried interest" basis.[79] The fifth round of offshore licensing in the U.K. was also completed in early October. Some commentators termed the response of the private companies "luke warm."[80] Nevertheless, it should be noted that there were more applications and more companies bidding, either in groups or individually, than there had been in most of the previous licensing rounds.

A possible interpretation of these events is that BNOC's decision to share full development costs as incurred does indeed represent a joint-maximizing solution to a portion of the government-company conflict over licensing and participation arrangements, and that the companies have responded to this announcement with strong interest in the fifth round of bidding for licenses.

The Norwegian development is more difficult to interpret. It was announced at the end of September that Saga Petroleum A.S. was withdrawing from active participation in Guatemala's first oil field just as the other participants were announcing that the Guatemalan

78. Economist, July 13, 1974, p. 36, and Grindley's Bank Review, op. cit., p. 8.

79. Wall Street Journal, September 17, 1976, p. 18.

80. Ibid., October 6, 1976, p. 8

operations were commercially exploitable.[81] Presumably, Saga was withdrawing because the Norwegian government has been putting pressure on Norwegian companies to devote more of their resources to North Sea operations. This development may be evidence that the Norwegian government is willing to move toward a more accommodating stance with its private oil companies in Norway. However, possibilities for conflict still exist if a government has encouraged a company to abandon a profitable venture abroad in order to undertake high cost development on a "carried interest" basis at home. On the basis of evidence so far, the encouragement now being given by the Norwegian government to the private oil companies might be described as another intermediate type of solution in the government-company pattern of conflict.

81. Ibid., September 28, 1976, p. 4.

The author wishes to thank the following persons for their kind assistance: Miss Marjorie Buck, Librarian, First National Bank of Boston; Mr. Patrick Connolly, International Energy Bank and Republic National Bank of Dallas; Mr. Gary Cox, First National Bank of Boston; Mr. Larry Flood, First National Bank of Boston; Dr. Norman A. White.

TABLE 1. Official UK Reserve Estimates: 1975

Estimated oil reserves in the British sector of the North Sea (million metric tons)	Proven	Probable	Probable total	Possible	Possible total
Proven fields	995	90	1085	135	1,220
Other significant discoveries yet to be fully appraised	65	215	280	300	580
Total from existing finds	1,080	305	1,365	435	1,800
Expected from future finds on existing licenses	—	900	900	400	1,300
Total from existing licenses	1,060	1,205	2,265	835	3,100

Source: The Economist, July 26, 1975, Survey, p. 13

TABLE 2. Official UK Reserve Estimates: 1976

Estimated oil reserves in United Kingdom licensed area (million metric tons)				
	Proven	Probable	Possible	Possible total
1. Existing Commercial fields	1000	100	70	1170
2. Other significant discoveries not yet fully appraised	350	480	290	1120
Total from existing finds (1 + 2)				2290
3. Expected from future finds on existing licenses	—	380	520	900
Total existing licenses	1350	950	880	3190

Source: Department of Energy, Development of Oil and Gas Resources of the United Kingdom, April 1976, p.5.

TABLE 3. Projections of UK North Sea Oil Output (million metric tons)

	govt.	OECD	Cambridge	NIESR
1975	½	5	4	
1976	15	20	17	
1977	40	45	45	
1978	50/60	70	70	100
1979	85/95	85		
1980	100/130	100		
1982	140/170			
1984	140/180			

Source: "Britain's Oil", Grindley's Bank Review, July, 1975, p.8.

TABLE 4.

A. ESTIMATED OVERALL U.K. RESERVES AS OF SPRING 1976 (millions of barrels)*

Reserves	Department of Energy	Wood Mackenzie
Estimated Recoverable	9,855	8,160
Probable	7,008	4,960
Possible	6,424	—
TOTAL	23,287	13,120

B. FORECASTS OF PRODUCTION LEVELS TO 1980 (millions of barrels a year)*

	Department of Energy	Wood MacKenzie
1976	110-146	124
1977	246-349	314
1978	402-511	487
1979	538-694	676
1980	694-840	844

*estimates in tons converted to barrels by multiplying by a conversion factor of 7.3.

Sources: Department of Energy, Development of Oil and Gas Resources of the United Kingdom, April 1976, p.5 and The Petroleum Economist, May, 1976, p. 176.

TABLE 5 Details of UK Licensing Rounds #1-4

Round	Area under offer	No. of blocks	No. of applications	No. of companies	Licenses: No of blocks	Licenses: No. of blocks	Licenses: No. awarded	Licenses: No. of companies
First (1964)	North Sea	960	31	61	394	348	53	51
Second (1965)	North Sea Irish Sea English Channel	1102	21	54	127	127	37	44
Third (1970)	North Sea Irish Sea Orkney/ Shetland Basin	157	34	54	117	106	37	61
Fourth (1971/ 1972)	North Sea Irish Sea Celtic Sea Orkney/ Shetland Basin	421 for Discretionary award; 15 for tender bid	92	228	271	282	118	213

Source: Department of Energy, Development of the Oil and Gas Resources of the U.K., April, 1976, p. 41.

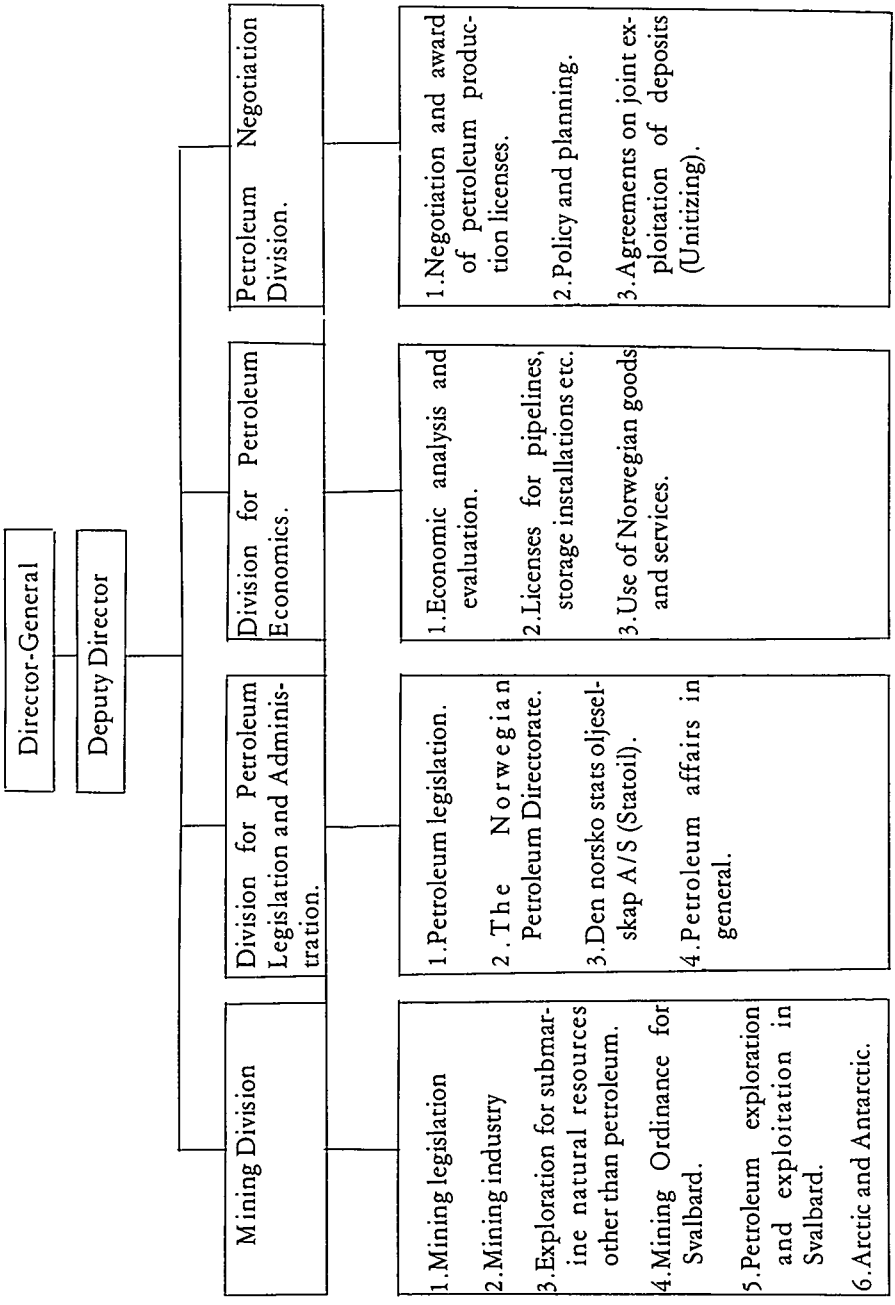
TABLE 6. Tax Provisions	Norwegian Special Tax on Income from Petroleum production	British Petroleum Revenue Tax (PRT)
Royalty	10-12% on old licenses 8-16% on new licenses	12½ %
Corporate Tax	50.8%	52%
Special profit Tax percentage	25% after corporate tax and royalty payments	45% of gross profits before corporate tax
Tax applied on a field by field basis?	No	Yes
Does tax provide for refund of royalties?	No	Yes
Tax free production allowance	None	1 million tons a year, up to 10 million tons total per field.
Exemptions	None	tax waived if it reduces return on capital to below 30% before corporate tax
Write off for capital expenditures	cumulative: 150% over 15 years; 6 year accelerated depreciation for pipelines and production equipment	175% in the first year
Tax applies to national oil corporation	Yes	No

Sources The Economist, July 26, 1975, Survey, p. The Petroleum Economist, MArch 1975, p. 98.
H.C. Wainwright, North Sea Oil and Gas, Industry Review, pp 6-7, 21-23.

TABLE 7. Patterns of Solutions to Public-Private Sector Disputes in North Sea Oil Development Policy

Conflicts which appear to have resulted in solutions characterized by	NORWAY	UNITED KINGDOM
WARFARE PATTERNS	license policies with few concessions awarded to Norwegian Companies 1974 Licensing round when Gulf withdraws some participation of Statoil with Norwegian companies, especially SAGA effects of special tax on some development work	
JOINT — MAXIMIZING PATTERNS		PRT tax proposals which make special allowances for marginal fields depletion policies (no conflict ever arose) license agreements with BNOC if exploration and development costs are paid as expense is incurred by state
INTERMEDIATE PATTERNS	License policy with concessions awarded to multinationals Norwegian special tax on profits depletion control policies role of Statoil as an integrated oil co. license agreements with Statoil on "carried interest basis"	participation with BNOC in existing licenses future licensing policies if development costs of BNOC borne on "carried interest basis" role of BNOC as an integrated oil company
SOURCES OF NEW CONFLICT	special tax on profits	

Figure 1. Organization Chart for the Norwegian Petroleum and Mining Department.



Source: Ministry of Industry, **Operations on the Norwegian Continental Shelf**, Report No. 30 (1973-1974), p. 85.