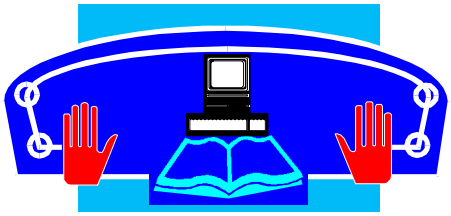

Analysis Of The Petroleum Incentives Program

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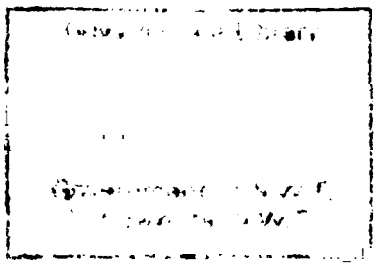

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GENERAL INTRODUCTION

This is a paper that attempts to measure the success with which the expectations aroused by political rhetoric are made real in the world. It is a commonplace in political life that government policy is often stated in language designed to appeal to the affections and passions of the electorate,

In accordance with this principle, the objectives of the federal government as announced in the National Energy Program of October 28, 1980, were called a "set of national decisions" that were "eminently in the national interest".[1] These two phrases reflect the Liberal government strategy in the early years of the 1980s, which held that the national government could not restrict itself to acting merely as the referee between the competing interests of the Canadian "communities", Rather, the government should reassert federal presence and visibility and appeal to a sense of national unity in opposition to the decentralizing forces of the more powerful provincial governments,[2]

The National Energy Program (NEP) as an experiment in economic nationalism offers a unique opportunity to observe the difference between rhetoric and action taken to fulfill the promise of that rhetoric, The document begins with appeals to national unity that are followed by the statement of a number of federal government objectives, These objectives, as the document goes on to explain, are to be worked out through. a number of policy instruments. The task in the pages that follow is to measure the success with which a policy instrument, the Petroleum Incentives Program (PIP)

has contributed to the implementation of a particular objective, that of Canadianization of the oil industry.

Canadianization is described in the NEP as follows:

> It (the federal government) must offer Canadians, all Canadians, the opportunity to participate in the energy industry in general and the oil industry in particular, and to share in the benefits of industry expansion.3

At the risk of seeming cynical, the rhetoric can be translated as follows. The emphasis on "all Canadians" is an exhortation to individuals and corporations to unleash their savings to provide sufficient sources of funds to finance exploration, "Opportunity to participate" refers to the investment climate the federal government has created to encourage Canadian oil companies to purchase the Canadian assets of foreign-owned multinationals, in particular the Petroleum Incentives Program. The singling out of "the oil industry in particular" occurs because it had had up to 1980 the highest rate of profit among energy industries and thus offered the purchaser the most attractive investment. "Sharing the benefits of industry expansion" alludes to expected increases in the world oil price and thus an increase in the value of Canadian oil and gas reserves and urges Canadians, all Canadians, to cash in on the increased economic rent.

One of the policy instruments to be used to attain the Canadianization objective is the following:

> The NEP will . ..use new federal revenues from the oil and gas sector to provide generous direct incentives for oil and gas exploration and development. ..They have been structured to encourage investment by Canadian companies and individuals.[4]
>
> PIP payments will reduce the cost of investment to firms that meet the ownership and control criteria, and provide a powerful incentive to Canadian firms to get on with the job of finding oil and gas.[5]

In contrast to" previous exploration incentives that took the form of write-offs from taxable income and which did not take into account the nationality of those that owned and controlled companies, the PIP is a system of direct grants' from the federal government that favours Canadian companies. Also in contrast to previous incentives that were applicable equally to exploration anywhere in the country, the PIP is more generous to companies that explore on federal territory than it is to those that explore on provincial territory. In the most generous case, a company with 75% or over Canadian ownership is entitled to a grant of 80 cents for every dollar spent.

It is clear from the above description of PIP that the federal government wishes to encourage exploration of its territory by Canadian companies. Accordingly, the observation of change due to the PIP is limited to one of the areas of federal territory that has seen a great deal of exploration, the Beaufort Sea. Stated more precisely, one of the tasks below will be to see the degree to which the Canadianization objective of the NEP has been realized through the implementation of PIP in the Beaufort Sea and the degree to which PIP has been successful in attracting Canadian capital to explore the area.

Such an approach, however, does not deal with the normative concerns that are raised by the government's choice of the PIP as a policy instrument. In other words, it would be unsatisfactory to discuss the PIP in isolation from the motivations behind the entire Canadianization objective. The degree to which that objective is couched in nationalist rhetoric has already been noted. The real question behind the PIP is its suitability as an agent of the "national interest", or, indeed, what the PIP can reveal about the actual substance of the so-called "national interest". In consequence, a great deal of the analysis will be devoted to the political and economic realities that may have influenced the federal government to choose such a policy instrument as the PIP. To the extent that PIP is an expression of the Canadianization objective, the same analysis may lead to an understanding of the choice of Canadianization as an expression of the national interest.

The political realities that made up the policy environment in which the PIP was formulated will be the subject of the first chapter. After a brief introduction to international oil politics as they bear on the Canadian situation, the politics of revenue-sharing between the governments and the foreign owned sector of the Canadian oil industry will be examined. The concentration on the revenue-sharing" issue continues with an examination of the competition between country-builders and province-builders, and concludes with a history of the competition between Alberta and Ottawa to attract exploration investment capital to their respective geographical areas,

The second chapter deals with the economics of oil exploration, or, more specifically, the economics of the financing of large scale energy projects as the subject relates to the exploration projects being carried out in the Beaufort Sea. Since the federal government issued the policy statement "Economic Development for Canada in the 1980s", a companion to the NEP in that it proposed that energy megaprojects should provide the engine of growth for the Canadian economy, there has been debate on the availability of capital to fund energy megaprojects. The exploration programs undertaken by Dome, Gulf, and Esso in the Beaufort Sea have many of the characteristics of megaprojects and consequently experience similar constraints in financing. The first issue to be examined in the second chapter will be the sources of funds that will be drawn upon to fund the projects; then the shift from internal to external sources of capital will be discussed. The shift from internal to external sources of capital in the Canadian oil industry has been somewhat alarming, due to the increased risks associated with external borrowing by the relatively smaller Canadian companies. The problems of external financing are examined, and a number* of possible solutions are suggested.

The third chapter is the actual test of the success of PIP in realizing the Canadianization objective. The record of activity in the Beaufort Sea is presented with a concentration on observable changes in the area since the implementation of the PIP. Although it is difficult to separate the effect of the PIP on exploration from the effect of changes in the world oil price, there are nonetheless some strong indicaters of a positive effect.

CHAPTER ONE

The Politics of Oil Exploration

Introduction

Much of the politics of oil in Canada since 1973 can be analyzed as conflict over revenue-sharing. Within the confines of the argument, it can be assumed that one of the primary objectives of government and business is to capture economic rent from the production of oil. Business has a claim to the rents as a reward for the risk of its capital, and under Section 109 of the British North America Act, governments have a claim to economic rent because the majority of oil production in Canada is from public lands, where the mineral rights are owned by the Crown. Thus, the government that is successful in encouraging the greatest production from its lands will have the greatest chance of capturing economic rent. The complement to this point is that governments will tend to use policy instruments to encourage exploration in the hope of gaining production revenues. In the Canadian case, there is competition between the federal government and the government of the province that produces the most oil, Alberta," over economic rents from oil production that extends to competition in offering incentives to private enterprise to explore their respective lands. Up to the time of the announcement of the NEP, Alberta was more successful in attracting the majority of exploration capital and" more sucessful in producing oil than the federal government. Indeed, Alberta's control over the majority of oil resources remains unchallenged, although the NEP contained certain initiatives to shift the control over oil away from Alberta.

In a succinct statement of the importance of revenue-sharing for

Canadian oil politics, Bruce Doern points out that:

> The key element in the genesis of the NEP was the struggle over the share of resource revenues. In this context the Ottawa -Alberta battle was central. All other factors - security of supply, fairness, and Canadianization - were of secondary importance. This is not to suggest that the revenue was only a partisan self-interested struggle for power between Alberta and Ottawa. Revenue was a genuine issue and a surrogate for many of the normative concerns that are inherent not only in energy policy but in Canadian politics in general - different views of federalism, the role of Western Canada, the control of resources, regional disparities, growing budgetary deficits, and Canadian ownership of the economy.[6]

For the purposes of the discussion below, the politics of revenue-sharing are defined as conflict between governments over economic rents from oil production, and conflict between the federal government and the foreign-owned sector of the Canadian oil and gas industry over economic rents from oil production. By way of introduction to the Canadian oil politics of revenue-sharing, however, there should be a review of the international events in oil since 1973.

Oil is a commodity of tremendous importance in the world economy, and, as such, the circumstances of its production are of interest to all nations that depend on it, The majority of the supply is from Middle Eastern states, which have been subject to political upheaval over the last decade that has threatened the balance of the world oil market. Oil has become a strategic resource, as demand has increased in the industrial expansion of Western states. The importance of oil as a strategic resource gives the oil-producing states enormous leverage in international politics. Oil was used for the first time as a political weapon in the 1973 oil embargo, where the commodity became a policy tool of the OPEC states. The upward trend of the price of oil can be traced from this point. The

Iranian Revolution of 1979 has a further accelerating effect on the price of oil.

OPEC'S raising of the price of oil shocked the economies of the industrialized world, which had come to expect a certain security in the pricing and supply of the lifeblood of their industrial power. When the price of oil rose, the economic structures of the industrialized nations came under tremendous strain. The adjustments required by the actions of OPEC were wide-ranging, since the price increase had, among other effects, caused a shift in the flow of capital toward the OPEC states.

The governments of the industrialized nations had to limit the negative impact of this change on their economies. As a result, governments intervened 'using measures in keeping with previous historical practices and prevailing ideologies. The initiatives of most nations were related to control of demand and security of supply. The former objective was approached through various measures, such as manipulation of the domestic pricing of oil and the encouragement of substitution. The latter was approached through intensive reviews of domestic sources of supply, initiatives to support" existing oil production or the formation of new government oil companies.

The key concept was security of price and supply. There were structural constraints on the adjustments the industrialized countries could make to the increased oil price, and once these limits were approached or surpassed, it was often necessary for the state to intervene in the economy.

Canada has suffered considerable disruption in the attempt to adjust to higher oil prices, although its problems have not been as intractable as those of other nations, particularly of the third world. One aspect of the new economic reality has been, in the words of John Helliwell, the assump-

tion of the role of Saudi Arabia by Alberta, with Ontario as an oil-poor, but otherwise, rich industrial country.[7] Another adjustment problem has centred around the federal government's decision to hold the price of oil consumed in Canada below world levels. The Oil Import Compensation Charge, which has been paid by the federal government to refineries to reimburse the latter for the difference between the international and the Canadian oil price, has imposed a tremendous strain on the federal treasury, particularly since 1979. A further adjustment was the creation of PetroCanada to establish a federal presence in the Canadian oil industry and to lead exploration ventures in new areas.

From the brief sketch above of the impact of the increase in the world price of oil, it is possible to proceed to the issue of revenue-sharing between the federal government and the foreign-owned sector of the Canadian oil industry.

Revenue-Sharing and Business-Government Relations

The term business-government relations is used loosely to describe the way the federal government saw the foreign-owned sector of the oil and gas industry prior to the NEP. As was noted in the introduction to the paper, the Liberal government in the early 1980s was inclined to structure its policies with reference to a conception of the "national interest", to promote a sense of national unity in the face of the growing power of certain provincial governments. A further priority which is clearly stated in the NEP is the desire to increase the flow into the federal treasury of oil and gas revenues. Private enterprise, on the other hand, did and does not operate in the national interest but rather with a view to

increasing its profits. In recent years in particular, some private enterprises in the oil industry in Canada have managed to link their "bottom line" very closely with the Liberal government's conception of the national interest, but this is the subject of later discussion. Government activity and initiatives are considered by business as the realm of "politics", not to be taken seriously unless it threatens the profit margin. It was and is competition with government to capture economic rent from oil production, and the combination of a nationalist government in Ottawa and an extremely profitable, largely foreign-owned oil industry at the beginning of the 1980s that was almost guaranteed to result in conflict.

The following chart indicates the level of foreign ownership of the Canadian oil industry.

FOREIGN OWNERSHIP AND CONTROL OF THE PETROLEUM INDUSTRY[8]

	1971	1973	1975	1977	1979	1980
Revenues						
Foreign Ownership	79.5	78.7	76.1	73.7	73.8	74.0
Foreign Control	94.4	94.0	92.9	87.0	82.5	81.5
Assets						
Foreign Ownership	77.7	75.8	72.2	66.8	62.2	62.2
Foreign Control	89.6	87.7	84.7	73.3	60.5	58.9

Although foreign ownership and control have declined over the past decade, it remains true that the levels are extremely high and have a significant position within the Canadian economy. As of 1980, of the top 25 petroleum companies in Canada, 17 were more than 50% foreign owned and controlled,

and these 50% accounted for 72% of all oil and gas sales.[9] The possible confrontation between the federal government and the foreign-owned sector of the oil industry seemed even more likely when the following figures came to light;

FOREIGN OWNERSHIP OF THE ECONOMY[10]

	Oil and Gas Revenues	%Foreign	Revenues Owned by Foreign	GNP	%Foreign of GNP
1972	$2.2B	78%	$1 .7B	$105B	1 .6%
1980	$16.5B	67%	$11.0B	$292B	3.8%

The Petroleum Monitoring Agency chart shows a decline in foreign ownership and control, but this does not indicate a corresponding decline in foreign control of the oil and gas industry as an integral part of the Canadian economy. For instance, from the chart above, it can be noted that oil and gas production revenues have risen from $2.2 billion in 1972 to $16.5 billion in 1980. Since the actual volume of oil and gas production between 1972 and 1980 has only risen 30% the increase in the revenues of the oil and gas sector can be largely attributed to the increase in the price of oil. With the increase in the price of oil there is a corresponding increase in the value of the land holdings and reserves of the established multinational corporations. It is quite probable that this understanding of the implications of the high foreign ownership of the oil and gas industry played a role in leading the federal government to intervene in the industry.

A related issue is the contribution of taxation and pricing policies of the past decade to the dominance off foreign-owned firms. The fiscal policies of the governments over the past few years have contributed to the prosperity of the foreign-owned sector in a number of ways. The fiscal regime for the oil industry previous to the NEP was based on writeoffs from taxable income. Such policies, therefore, were of greater benefit to those companies with large revenues. If a private enterprise came under this fiscal regime with large revenues, the amount it could write off against its taxable income was correspondingly large, allowing the company to free a larger amount of cash flow relative to its size than a smaller company. This would put the larger, foreign-owned companies at an advantage in the bidding for lands, for instance, and would allow them to use cash flow to finance acquisitions, often of smaller Canadian companies. Under these circumstances, there is a tendency towards the concentration of ownership and control with the larger companies.

It is often said, in spite of the argument offered above, that Canada needs large amounts of foreign capital invested in its oil industry because Canadian capital is unwilling to risk investment locally. If this is the case, then some of the costs of high levels of foreign investment should be explored. Perhaps the most politically contriversial issue is that of the export of capital from Canada abroad. Since 1974, according to the NEP, the oil industry has been a net exporter of capital. In addition to maintaining its normal interest and dividend payments,

the ndustry supported net capital outflows abroad of $2.1 billion in 1974 -79." Some of these funds represented a return on capital to foreign owners, others represented new foreign investments by Canadian companies. If dividends and interest payments were added to this total, the total outflow over the period 1974-79 becomes approximately $3.7 billion. Dividends rose from $200 million a year in 1973 to $600 million in 1979.'[2]

At the time of the presentation of the NEP, the prospect was for these net capital outflows to increase. According to the document, the outflow of dividends to foreigners as a result of price and taxation policies represents a transfer of wealth from Canadian taxpayers and consumers to foreign shareholders.

From a Canadian ownership perspective, the policy of providing a cash flow to the predominantly foreign-owned industry from tax incentives and price increases is undesirable, for it allows the industry to expand without having to seek funds from the Canadian capital market.

This state of affairs or policy environment would tempt a confident and nationalistic national government to take action. Not only was there a transfer of wealth from Canada to other countries, but there were also no guarantees that the development that did take place within Canada would redound to the benefit of Canadians through national procurement policies and the like.

Another important issue in business-government relations is the phenomenal increase in takeover activity in the Canadian oil and gas industry in 1980 and 1981. In the largest experiment in the repatriation of American capital in Canada's history, the Canadian-owned

and controlled oil companies embarked on a series of takeovers of the Canadian assets of the foreign-owned companies operating in Canada. The issue falls under the rubric of business-government relations because one of the main reasons cited for the increase in takeover activity was the change in the status of the foreign-owned sector of the oil industry as a result of the NEP, and in particular the PIP program.

Although the NEP was an important factor in explaining the increase in takeover activity, others should be taken into account, for instance:

1) Inflation expectations were rising, and oil companies looked like a good hedge against inflation.

2) The perception was growing that 1973 was not a one-time inflation jolt, but rather that it was here to stay.

3) Companies could be purchased at prices that were by historical standards very low,

4) Between 1973 and 1980, money was relatively cheap and banks were eager to lend.[13]

Under the NEP, therefore, a number of factors combined to make the acquisition of Canadian assets of foreign-owned companies attractive. Largely because of the PIP, for instance, it was expected that the value of the foreign-owned companies would decrease. Since it was also expected that the value of oil and gas assets would increase alongside the increase in the price of oil, it was hoped that the Canadian companies could acquire these assets at a minimum price. The following is a list of some

of the transactions.

- Union Texas of Canada, acquired from Allied Corp. of New Jersey for $101 million by Drummond Petroleum, a recently formed, Calgary-based exploration company.

- The Canadian oil and gas assets of Great Basins Petroleum Co. of Los Angeles for $165 million, bought by Calgary-based United Canso Oil and Gas Ltd.

- Alamo Petroleum and Amax Petroleum of Canada Ltd., bought from Amax, Inc., for $215 million for the pair, by B. C. Sugar Refinery Ltd. and its 60% owned subsidiary, Fairweather Gas Ltd. of Calgary.

- Uno-Tex Petroleum Corp., acquired from Allied Corp. for $371 million by Husky Oil Ltd., 68% owned by Nova Corp.

- Candel Oil Ltd.; bought from St. Joe Minerals Corp. for $546 million by Sulpetro of Calgary.

- 75% of the common shares of Aquitaine Co. of Canada Ltd., acquired from Societé Nationale Elf Aquitaine, France, for $1.2 billion by CDC Oil and Gas Ltd.

- The majority of outstanding shares of Petrofina Canada Ltd., acquired from Petrofina S.A., Belgium for $1.5 billion by PetroCanada.

- 53% of the common shares of Hudson's Bay Oil and Gas Ltd., bought from Conoco Inc. of Stamford, Corm., for $2.2 billion by Dome Petroleum.[14]

In the introduction to this section the conflict between the "national interest" and the "bottom line" was presented as the conflict between business and government. The national interest in this case was the Canadianization objective - to reduce the level of foreign ownership of the Canadian oil industry. In the case of takeover activity, there was a coincidence of the interest in the bottom line (private

enterprise was getting a good deal) and the national interest as embodied in the Canadianization objective of the NEP.

The takeover movement did shift ownership and control of the oil industry into Canadian hands to a significant degree. According to the Petroleum Monitoring Agency, there was a net outflow of $5.1 billion in the oil industry in 1981. Foreign direct investment in the Canadian oil industry was reduced by $5.6 billion. As a result of takeovers Canadian ownership of the oil industry increased to 32.8% from 26.1% as measured by petroleum-related revenue. Canadian control of the oil industry rose to 25.2% from 18.7%. Thus, takeover activity in 1981 reduced the estimated level of foreign ownership and control by about 6 percentage points.[15]

To return to the issue of revenue-sharing, the impact of the takeover activity should be noted. It follows from the above discussion that any increase in the level of Canadian ownership of the domestic oil industry would decrease the amount of capital exported from Canada by foreign-owned companies. As a consequence, the revenue share of the foreign-owned sector relative to the Canadian-owned sector would decrease. The PIP was part of an investment climate that encouraged the acquisition by Canadian companies of the Canadian assets of foreign-owned companies, which reduced the level of foreign ownership of the oil and gas industry.

Country-Building, Province-Building, and Revenue-Sharing

In the previous section the impact of PIP in encouraging take-over activity and thus its indirect impact on reducing the level of foreign ownership of the oil industry was described. It was argued that the PIP had brought about a change in revenue-sharing between the Canadian and the foreign-owned sector of the oil industry. In the following section, the competition between the federal and provincial governments over oil and gas revenues is described from the stand-point of country-building and province-building. A connection will be made between the tactics of" province- and country-building and the concept of "forced growth" as employed in the book by Philip Mathias of the same name.[16] The argument suggests that the federal government has recognized the major reason for the province-building success of Alberta, namely the capture of resource rents from oil and gas pro-duction, and has attempted with the PIP to repeat Alberta's success on its own territory, the so-called Canada Lands,[17] Some of the limitations on government intervention in the economy as suggested by Mathias are made evident when it is noted that the PIP payments are escalating more rapidly than expected and could threaten the already hard-pressed federal treasury.

By way of introduction, it would be useful to discuss the concept of economic rent as it relates to resource revenues. In the case of most oil production, the province is recognized as the owner of

natural resources within its boundaries. The government, as landlord, leases these mineral rights to private enterprise for a specified period of time. The companies, as tenants, pay fees, taxes, and royalties to compensate the provincial landlord for the exploitation of Crown Land.

Both tenants and landlords are entitled to a share of natural resource revenues. In theory, the government as landlord should collect the difference between the selling price of the commodity and the price of its production, after allowing for a fair return on investment and taking 'into account the degree of risk taken by private enterprise to earn the revenues. In reality, it is difficult to compute economic rent, because resource investment is long term and carries with it technical, political, and financial risks that are difficult to estimate. To return to Doern's comment on the political nature of resource revenue sharing cited in the introduction to this chapter, it should be noted that the calculation of resource rents in the Canadian case is very much skewed by the competition between the two levels of government.

In the following discussion it is assumed that the capture of economic rents from oil and gas production is one of the prime objectives of the province- and country-builders, because Alberta's recent economic growth has proven that such rents can be translated into political power.

The concepts of country-building and province-building were introduced by Richard Simeon and Jeff Evenson in 1978,[18] According to the model set out by these two authors, country building sees the

federal government and national institutions as the chief instruments of national development. Problems are defined nationally (i.e., the NEP as a "set of national decisions") and solutions are given in national terms (the NEP's solution to the energy crisis as "eminently in the national interest"). In the economic sphere, the federal government is seen as the primary vehicle to maximize overall economic growth, to "create and promote the development of complementary regional economies" and reduce regional disparities.[19]

Province-building, on the other hand, has often been defined in reaction to country-building, out of a sense of grievance at the tactics employed by country-builders. The strength of province-building is the sense of community and regional identity backed by the economic power of provincially-owned resources.

The sense of grievance of the province-builders in reaction to the tactics of the country-builders is based on the "heartland-hinterland" view of economic development. The history of the Canadian political economy, according to this thesis, was distinguished by the exploitation of the Maritime and western hinter" ands for the benefit of central Canada in line with classical mercantilist principles, Heartland economic policies required the hinterland to buy the manufactured goods of the heartland, capital development of the hinterland was controlled by public and private institutions in the heartland, and economic development of the hinterland was brought about by large corporations protected by heartland policies against international competition.[20]

The implications of this model of relations between the heartland and the hinterland for the capture of rents from oil and gas are clear. Oil and gas, according to the country-builders, do not "belong" to the province; they belong to the country and the rights of provincial owners are limited. Ottawa must capture a larger proportion of the rents in order to fulfill its duties under the constitution. Its powers to tax and over trade and commerce should' not be limited. Its broad discretionary authority, such as the responsibility to maintain the conditions of "peace, order, and good government" must be retained and strengthened.

Under the province-building model, when an Albertan claims the rights to "his" resources, he means the resources that belong to residents of Alberta and not to residents of the rest of the country, The provincial community has rights over the natural resources that cannot be taken away by any national authority. There is no feeling of obligation that the province should share its wealth with the rest of the country.

In concentrating solely on the subject of economic development within the country- and province-building models, the difference between the two is clear. The former sees itself responsible for the development of the country as a whole, with a mandate to manage the national economic unit is such a way that maximum benefits for the entire country will be realized. The province-builders, on the other hand, focus their economic development energies solely within their own borders, and view the actions of the country-builders not as initiatives to benefit the country as a whole but as policies to continue the historical domination of the hinterland by the 'heartland.

Some of the tools of province-building that are used in a resource-based economy are the management expertise of the state administration, control over the pace of production of resources, fiscal measures such as taxation policy, development incentives, the levying of royalties, and the provision of infrastructure support for development. Usually the power of the state is used to encourage private enterprise to undertake development at a pace that it would not normally undertake under its own initiative. The state also intervenes directly into the economy through agencies and Crown Corporations.

Many of these tactics of province-building are cited by Philip Mathias as the tactics of "forced growth" in the book of the same name. The author is critical of some government initiatives to encourage private enterprise and casts doubt on the ability of provincial governments to evaluate the appropriateness of large projects, and on their ability to manage such projects.

There are at least two parallels between forced growth and province-building. In each case the government is the initiator of the activity and has entered the marketplace, attempting to combine political priorities, such as province-building, and economic priorities, such as the maximization of profit. In both cases the management skill of the provincial state and the control over fiscal tools are important.

One of the differences between province-building and country-building is the increase in the expertise of the provincial state in intervention in the economy, More than a decade has passed since Mathias'

observations and provincial bureaucracies have grown considerably in that time. This growth of provincial expertise has contributed to the success of Alberta, a success story that might make a second edition of Forced Growth somewhat less damning of provincial government intervention than the first. The increase in the management expertise of the provincial state, however, is not the prime success factor in the Alberta case. The reason for Alberta's success lies in the nature of the natural resource that the province produces. Since Mathias' observations the world price of oil has moved from $3 to $30 a barrel, and the capture of economic rent from oi" and gas production has become the key to economic and politics' power. Alberta in the 1980s does not fit into Mathias' panoply of woes because oil is worth so much and the province garners a healthy percentage of rents from its production.

An article by Larry Pratt illustrates the extent to which Alberta's success is based on ownership of oil. Since the coming of power of the Lougheed government in 1971, the province has formulated a number of economic development priorities. It intervened in the marketplace to get higher resource prices and to subsidize industrial diversification. It moved to increase control over the supply and pricing of feedstocks to the petrochemical industry and to promote forward linkage effects. In the economic sphere in general it used state resources to undertake joint ventures with MNCS and Alberta companies,[21]

All of the above priorities point to the importance of state ownership of the oil resource. The essential movement from a resource-based economy to a more diversified industrial structure is propelled by the channeling of rents from a high oil price into support for an indigenous petrochemical industry. The provincial economic development strategy was based on the ownership of the resource on the one hand and the use of legislative power to intervene in the market to encourage economic activity in line with province-building ambitions.

The success of Alberta has been an economic lesson well-learned by the federal government. The latter has recognized the importance of capturing resource rents in-building political power. The rationale used by the federal government in the NEP to increase its share of resource revenues was spelled out in the following way. Under the BNA Act, there is no defined arrangement for the sharing resource revenues. The revenue share accruing to each level of government has evolved over the years with no particular reference to the revenue needs of either level of government. The result was, in 1980, an "extraordinarily unfavourable" distribution of benefits to the national government "bearing no relation to the rights and responsibilities of the two levels of government."![22]

In a turn of phrase reminiscent of the previous discussion of nation-buidling, it is stated in the NEP that "there must be recognition of a national claim. - a claim by all Canadians to a share in (oil and gas) revenues and benefits".[23] The suggestion is that although the province has ownership of the resource under the constitution, oil and gas revenues do not belong to the province, they belong to the country. The document then puts forward the argument that the federal government took steps

to ensure the Western hydrocarbon producers a Canadian market in the 1960s and early 1970s, when it would have been cheaper for Eastern Canada to buy on the world market, and that the Canadian taxpayer has been supporting the oil industry through tax incentives for a number of years. According to the concept of a "national patrimony entitlement",

> The citizens of Canada, and their national government, have played a major role in fostering the development of the oil and-gas industry, and deserve to share in its benefits.[24]

The final point made on this issue in the NEP is that the national government "which is accountable to all Canadians" should have access to the revenues it needs to fulfill its responsibilities. This is a somewhat circular argument, or so would say the province-builders, because it is unclear that the federal government does represent "all Canadians", and it is therefore unclear why it should gain more revenues from resources.

With an understanding of the rationale of the federal government it is possible to relate back to the discussion of province- and country-building. The fundamental difference between the two models, as noted above, was that the latter initiatives were ostensibly undertaken for the benefit of the country as a whole, whereas the former initiatives were confined to the geographical boundaries of a particular province. The PIP, as will be discussed below, fits conveniently into neither model.

The country-building rhetoric of the NEP has been mentioned, with its reference to the "national interest" and care of the needs of "all Canadians". One of the main objectives of the NEP, that of Canadianization, is couched in similar rhetoric. But an important policy instrument of the Canadianization objective, the Petroleum Incentives Program, concentrates on the development of the Canada Lands only, as opposed to the country as a whole. The majority of the PIP payments will be made to companies that explore on Canada Lands, and if the strategy of encouraging exploration leads to large commercial discoveries, the majority of resource rents in the 'future may come from Canada Lands. The expectation aroused by the NEP rhetoric", however, is that federal expenditures on this program will redound to the benefit of the country as a whole. There is no guarantee that they will do so. The first reason for this is obvious - large federal expenditures will be concentrated in a specific area of the country, and may well have the effect of drawing away investment capital from other parts of the country, notably Western Canada.

The second reason that PIP may not benefit all Canadians is an unstated but intuitively obvious federal priority, based on the fact that the federal government owns the resources of the Canada Lands. It is encouraging exploration because it may result in increased revenues to itself rather than Alberta. It does not want to continue to occupy a weak bargaining position in the negotiation of the Canadian oil price with Alberta. It is more interested in strengthening its financial position vis-a-vis Alberta than it is in encouraging the economic development of the country as a whole.

In the case of the Canada Lands, then, the federal government has combined a number of policy instruments[25] including PIP, not to benefit all Canadians but for the benefit of the federal government in its battle with Alberta over revenue-sharing. In its recognition of the political power associated with the capture of resource rents, Ottawa is trying to imitate the success of Alberta by adapting the latter's techniques to federal territory.

Whether the strategy of the federal government is successful in the future remains to be seen. It is clear that such a strategy entails a great deal of risk. Within the concept of forced growth, for instance, is contained the idea that government intervention often occurs without an appreciation by government of the constraints that made more conventional modes of development economically unfeasible. Although government expertise has increased greatly in the past decade, this does not guarantee that forced growth projects will be less risky now than they were in the past. Indeed, as most of the second chapter of this paper will show, there is every indication that the risks of large-scale energy development are increasing, Particularly in the case of resource extraction projects there are an almost infinite number of variables that are subject to change at any time - interest rates, inflation, the international price of the resource, and a host of other less obvious factors. The federal government is increasingly wary, for instance of its expenditure commitments under the PIP.[26] It is possible that the PIP will be downgraded or scrapped well before the hoped for resources rents from oil production materialize.

In a statement from a book published in 1981 that reads a great deal like Mathias, Marsha Gordon writes:

> ...governments intervene increasingly in the economy without having a firm basis for evaluating the impact of this intervention on the overall economy.[27]

This brings to mind Mathias' concern that forced growth policies were often undertaken with little understanding of the economic realities that discouraged private enterprise from developing a project.

Gordon goes on to note that to a growing extent the federal and provincial governments have become risk-sharers with the private companies in new and costly ventures, mostly in the energy field. In the past, high risk investment using unproven technology in unknown territory had been undertaken by smaller investors. At present, though, with the cost of new technology so high and returns on investment so uncertain, there is a weak flow of investment funds. Since the increased awareness of energy due to the OPEC price shock, government has taken measures to increase the flow of investment into high risk projects, justifying its expenditures by citing the public's "need to know" or the "public interest". This socialization of risk has important implications for future energy and economic development. Is the government justified in using public funds when private capital is unavailable because returns are too low relative to the risks involved? Recent experiments by government in this area, like the NEP and the bailout of Dome, are excellent examples of the government's increasing tendency to take on risk.

In the energy field, knowledge of development has not increased as far beyond Mathias as some would hope. Expertise has increased, but so have the costs and risks of large-scale resource extraction.

The perspective of country-building and province-building offers some insights into the federal government's choice of the PIP as a policy instrument for the Canadianization objective, since the conflict between these two views forms the essential background to the inter-provincial conflict over resource revenues. The conflict over revenue-sharing and the decision to use PIP would be further clarified if it can be shown how the two levels of government competed to offer incentives to private enterprise.

The Competing Use of Fiscal Instruments to Encourage Exploration

There was some discussion above of the link between incentives to encourage exploration and future resource rents. The following section will reveal the history of competition between the federal and Alberta governments in offering exploration incentives to private enterprise,

Over the period that began with the first OPEC price shock in 1973 to the 1980s, the connection between exploration and resource rents became more immediate. Alberta had dominated the exploration activity and wished to do so indefinitely, as it correctly viewed the oil and gas industry as the main support for its increasing power within Confederation.

The federal government, on the other hand, had increasing spending requirements over revenues throughout this period. One of the avenues open to this government to augment its revenue was to attract exploration capital to its own territory in the hope of capturing future rents. In a less Machiavellian vein, it was also concerned with the dependence of a significant portion of the nation on the Alberta oil" fields where reserves had been declining for many years. Discoveries had not been keeping pace with the demand for several years.

If such were the motivations of the governments, then what were the fiscal instruments? The basic principle behind exploration incentives before the NEP was that non-spenders within the industry would pay a high level of tax and royalties, but others that actively redeployed funds could either recoup some of their expenditures through tax write-offs or receive funds from provincial sources if they carried on qualified activities in the provinces. Before the NEP, extensive use was made of write-offs from taxable income by both levels of government. Depletion allowances, for instance, were deductions from taxable income tied to expenditures made by the taxpayer, As qualifying expenditures were made, the taxpayer would increase his depletion base, which would allow a greater amount to be written off from taxable income. For example, the 33 1/3 rate offered under the earned depletion allowance, phased in in May, 1974, allowed the taxpayer to increase his depletion base by $1 for each $3 spent. There are usually limits on the degree to which a taxpayer may use his accumulated depletion base to reduce his taxable income.

The h[illegible] of the competition to offer such incentives to spend [illegible]loration [illegible]ns in 1973, when the price of oil consumed in Canada [illegible]80 a ba[illegible]. In September of that year, in reaction to the increase [illegible] world p[illegible] the federal government froze the Canadian price at [illegible]rrel an[illegible]med an export tax on the sales of Canadian crude oil [illegible] United [illegible]s.

The Al[illegible] government had recently concluded negotiations with [illegible]l indus[illegible] was in the process of implementing a new taxation [illegible]. In re[illegible] to the freeze on the price of its oil and to the [illegible] tax, th[illegible] regime was put on hold. The federal government con-[illegible]ted to the [illegible]mosphere "of tension by disallowing deduction of [illegible]cial roy[illegible] payments from taxable income. The thinking behind the [illegible]l actio[illegible], presumably, that it should get an adequate share [illegible] new ro[illegible], from the increased international price.[28] The Alberta [illegible]ent had [illegible]s royalty rates to track the international oil price, [illegible]hout fe[illegible], tion the latter's take would have fallen while [illegible]a's rose.

The i[illegible]y reacted to this squabbling by cutting back spending, [illegible]lin g [illegible]tments, and alying off employees. Business as usual [illegible]ot be [illegible]ken with continuous threats to cash flow.[29]

T h e [illegible] government conceded to the oil companies in December, [illegible]d anno[illegible] number of incentives to increase the flow of risk [illegible] into [illegible] industry. The federal government followed suit in

January 1976 with a resource allowance which allowed deduction of 25% of resource profits after operating and capital costs but before deduction of interest, Canadian exploration expense, and depletion. The resource allowance was in addition structured to promote exploration and development spending rather than administrative or property costs, and created fiscal room for private enterprise to enable it to pay provincial royalties. The federal government also took an initiative to encourage individuals to risk their capital in the oil industry. In the May 1976 budget, the immediate 100% write-off of exploration and development expenses was extended to both non-resource corporate and individual taxpayers, where previously it had been limited to resource corporations.[30] This led to the formation of the drilling funds, through which a taxpayer was allowed to write-off 100% of his Canadian exploration expenses against other income, whether or not his principal business was resource oriented.

There was another incentive offered by the federal government at this time that should be noted because of the use made of it by a major explorer in the Beaufort, Dome Petroleum. In the March, 1977 budget, an enhancement of the earned depletion allowance was introduced, called the "superdepletion allowance". For exploration expenditures on any well costing over $5 million between March 31, 1977 and April 1, 1980, the taxpayer was allowed to include an additional 66 2/3% of qualifying expenditures in his earned depletion base. This meant that 200% of well costs (33 1/3% earned depletion plus 66 2/3% superdepletion plus 100% of exploration and development expenses) could be written off against resource income, or 167% could be written off from all other income.

There have been charges that the primary beneficiary of this allowance was Dome Petroleum, because it was one of the few companies with wells so expensive that it could be used. It is estimated that in 1978 the drilling funds that were inspired by this allowance provided $53 million or 1/3 of Dome's Beaufort budget, compared with 50% of Dome's own money, In 1979, the drilling funds raised over $120 million, or 2/3 of the total budget.[31] In September, 1979, near the end of the allowance's life, Dome president William Richards summarized his company's use of the superdepletion allowance:

> There has been to date approximately $500 million spent in the Beaufort Sea drilling program of which about $300 million has qualified for the frontier depletion allowance (i. e., superdepletion). Assuming a 50% tax rate, this means that approximately $150 million in tax has been deferred under the program until a later date.[32]

Using drilling metreage per year in the Beaufort as a indicator of activity, it is plain that Dome's activity increased between 1977 and 1980, and it is probably that the superdepletion allowance opened up important sources of capital.

BEAUFORT OPERATOR'S METREAGE PER YEAR AND NUMBER OF WELLS DRILLED[33]

	74	75	76	77	78	79	80	81	82
Esso Resources	2707 (1)	70.93 (2)	9259 (3)	14836 (4)	6415 (2)	4055 (1)	5070 (2)	3223 (1)	2480 (1)
Dome Petroleum	-		17085 (4)	25983 (5)	32110 (6)	44608 (11)	19747 (7)	26523 (6)	22541 (6)

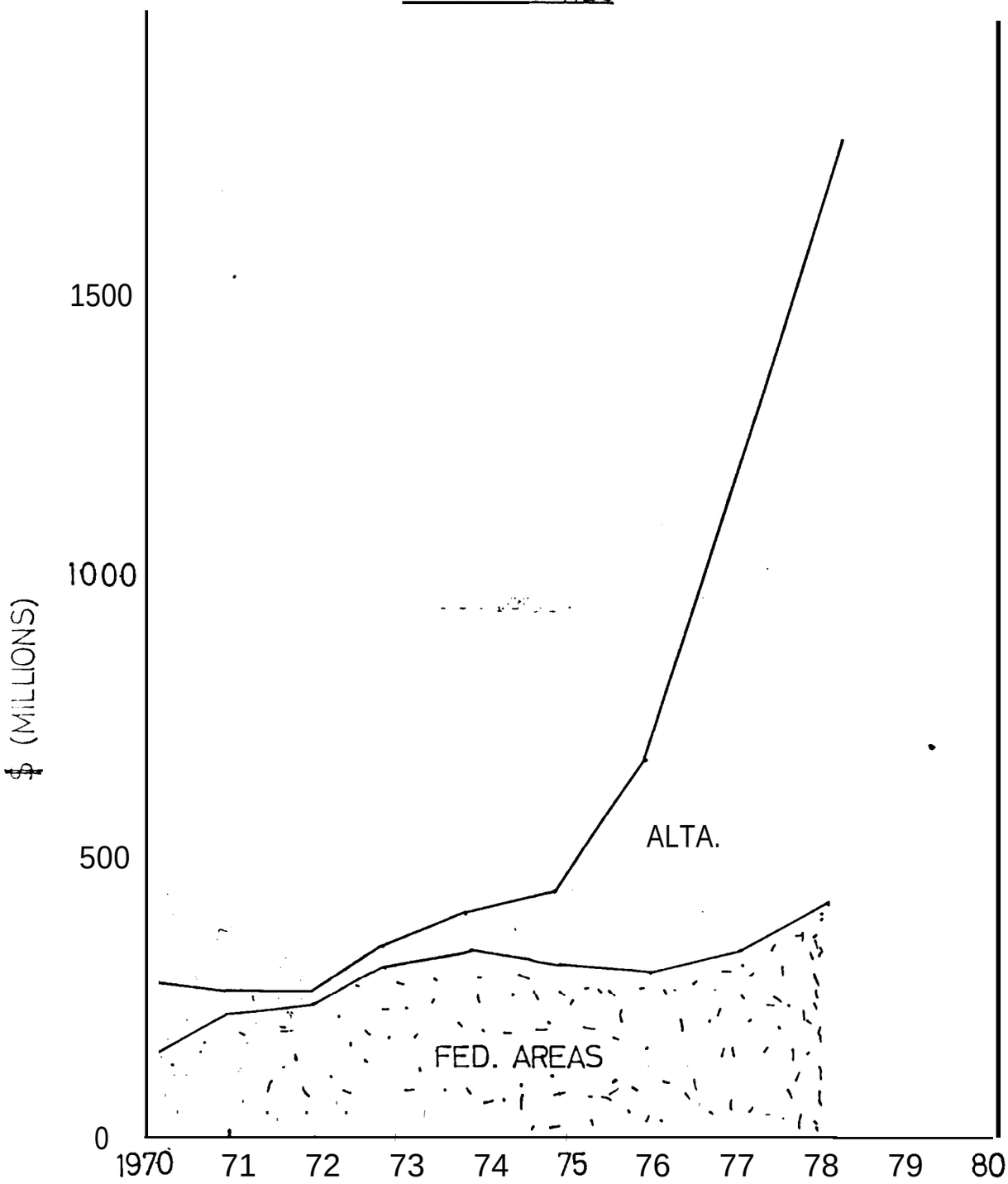
Esso's wells in the Beaufort are drilled from artificial islands and in shallower water than are Dome's and consequently it costs less for Esso to find out the production potential of a geological structure. Dome's more expensive drilling activity peaked in 1979 after rising substantially from the previous two years, whereas Esso's peaked in 1976 and has been tailing off since that time.

A connection can be made between Dome's use of the superdepletion allowance and the PIP. The superdepletion allowance is comparable to the PIP in that both encourage exploration on federal territory, and to a certain degree the PIP is a continuation of the superdepletion in that both have been used by Dome to sustain a high level of exploration expenditure.

To return to the general theme of the competition between the two levels of government to offer exploration incentives, the record of drilling expenditure between 1970 and 1978 shown below suggests that Alberta was the aggregate winner. The provincial government also succeeded in adding more to its reserves than did the federal government. Although the amount of oil discovered per year in Alberta was not keeping pace with the amount of oil taken out of the province per year, the rate of decline in reserves slowed due to increased discoveries over this period."[34]

Perhaps the main factor contributing to the success of Alberta was the attraction of its incentives program. A comparison of after-tax drilling costs, even after superdepletion is taken into account, shows that the after-tax cost of drilling in Alberta under the base case was 2 cents per dollar as opposed to 10 cents per dollar in federal territory,[35]

EXPLORATION EXPENDITURES



Conclusion

In the first chapter certain aspects of the politics of oil exploration have been discussed, working from the assumption that the issue of revenues-sharing would provide some insights into the motivation of the federal government in introducing the PIP. First the nature of foreign ownership of the Canadian oil industry was noted, followed by the argument that the PIP was designed to lower foregin ownership of the industry by encouraging the takeover of the Canadian assets of foreign companies by Canadian companies. The revenue-sharing issue here is less clear than it could be, but it can be stated with confidence that the takeover activity encouraged by the PIP had the effect of lowering the volumes of capital exported by foreign-owned companies, and thus created a situation where the export of capital by companies for other than purposes of acquisition would be limited in the future.

The NEP and the PIP in particular can also be seen in the light of the competition between Alberta province-building and federal government country-building. The difference between the PIP and an initiative undertaken according to the ideal country-building model, however, is that the PIP was explicitly designed to develop an area of the country, the Canada Lands, in strategic opposition to Alberta development or development of the country as a whole. It is argued that the important factor in the success of Alberta province-building is its ownership of the oil resource, and that the federal government is attempting to duplicate this success by encouraging the development of territory where it owns the

mineral rights.

The empirical proof of this motivation for the PIP is the past victory of Alberta over Ottawa in offering fiscal incentives for oil exploration. The provincial government succeeded in attracting the lion's share of investment capital in the 1970s and as a result captured an enormous wealth of resource rents. Not only could this wealth be translated into political power over the course of negotiations with the federal government over the price of oil, it represented a threat to the power of the central government within Confederation. It is not difficult to imagine why the federal government would wish to shift investment capital on to its own territory, through a vehicle such as the PIP.

The following chapter will explore the economic realities that made up the policy atmosphere prior to the announcement of the NEP, continuing the task of attempting to discover the motivations behind the PIP.

APPENDIX A

Summary of Energy Envelope Expenditures[1]

(millions of $)

	80-81	81-82	82-83	83-84	84-85	85-86
Net Petroleum Compensation Payments	2684	120	--	--	--	--
Federal Share of Costs for PIP	--	940	1040	1150	1480	1850
Other Energy Expenditures	940	1611	1999	2452	2635	2929
Total	3624	2671	3039	3602	4115	4779

[1] source: Canada. The Budget in More Detail (Ottawa: Supply and Services, 1981) p.21

The magnitude of the outlay on PIP becomes clear with an examination of the chart above. For the period between the initiation of the program to the present some $2 billion is budgeted, and according to C. G. Penney of the Petroleum Incentives Administration, the amount that has been disbursed as of March 31, 1983 is quite close to this amount.[2] For this initial 27 month period, from January 1, 1981 to March 31, 1983, approximately 700 applications had been received and some $1.6 to $1.8 billion had been paid out under the program. What should be noted, however, is that the PIP program is extremely visible in a political sense. Huge grants to large oil corporations, be they Canadian or otherwise, are not liable to be popular in recessionary times, when the federal government is under intense pressure to reduce its fiscal deficit.

[2] C. G. Penney, Address to the CCH Conference on "The NEP - Its Challenges and Opportunities" Calgary, Alberta, January 26, 1983

APPENDIX B

Another indicator of the success of Alberta in attracting exploration tment capital is the amount of revenues accruing to the provincial vernment from land bonus payments. During the late 1970s these: payits rose so dramatically that the federal government grew concerned that clusion of revenues from this source into the equalization formula would ace an unacceptable drain on federal revenues. In the 1977 Federal-vincial Fiscal Arrangements Act, therefore, "revenues derived in a ince from the disposition of leases , reservations, and other rights spect of Crown Lands for the purpose of exploration or exploitation the land for crude oil and natural gas" were phased out of the equalation formula. In 1979-80, only 25% of revenues derived from this source tered the equalization formula, as opposed to 50% of other ener9Y reven , and in 1980-81 they were dropped from the equalization program entire-. According to a study by Courchene, the sale of Crown leases generated million for equalization purposes compared to total revenues from the rce in 1975-76 of $100 million.[1]

1. T. Courchene, The 1977 Fiscal Arrangements Act (Montreal:C.D.Howe, 1978) p. 46

Land Bonus and R

	1970	1972	1974	1976 ($
Alberta	116.6	124.4	157.3	255.
Saskatchewan	12.3	12.8	14.0	20.
British Columbia	25.5	30.0	36.8	59
Other Provinces	2.7	2.8	2.6	4
Federal Government	7.1	7.0	6.3	4.
Total	164.2	171.0	217.0	344.

The National Energy Program, p. 14.

FOOTNOTES - Chapter One and. Introduction

1 - Canada, Energy, Mines and Resources, The National Energy Program, October 1980, p.1

2 - Bruce Doern et al, How Ottawa Spends Your Tax Dollars, (Toronto: James Lorimer & Co., 1982) p.3

3 - Canada, Energy, Mines and Resources, op. cit., p.2

4 - ibid, p.39

5 - ibid, p.50

6 - Bruce Doern, "Energy Policy and the Megaprojects As An Instrument of Economic Development", paper presented at the Carleton University School of Public Administration 30th Anniversary Conference, Ottawa, Ontario, November 28, 1980, p.8

7 - John Helliwell, "Taxation and Energy Policy", (Vancouver: University of British Columbia Programme in Natural Resource Economics, 1980) p.1

8 - Canada, Petroleum Monitoring Agency, Canadian Petroleum Industry Monitoring Survey 1980, p,41

9 - Canada, Energy, Mines and Resources, op. cit., p.19

10 - D. W. Scrim, "COR Policy and Rate Enhancement", paper presented at the CCH Canadian Ltd. Conference on "The NEP - Its Challenges and Opportunities", Toronto, Ontario, January 17, 1983, p.3

11 - Canada, Energy, Mines and Resources, op. cit., p.17

12 - ibid

13 - Ralph Sultan, "Canada's Recent Experiment in the Repatriation of American Capital", Canadian Public Policy VIII, October, 1982

14 - Dunnery Best, "Selloffs: NEP Trickle Turns Into a Flood", Financial Post, July 25, 1981, p.W1

15 - Canada, Petroleum Monitoring Agency, Canadian Petroleum Industry Monitoring Survey 1981, p.52

16 - Philip Mathias, Forced Growth (Toronto: James, Lewis, and Samuel, 1971)

17 - The use of the term "Canada Lands" is part of the drive for recognition of the federal government against the provinces. The term implies that federal territory is more "Canada" than provincial lands. Thanks to Marshall Crowe for pointing this out to me.

18 - Everson and Simeon, "The Roots of Discontent", cited in Barbara Hodgins, Where the Economy and the Constitution Meet in Canada (Montreal: C.D. Howe Institute, 1981) p.6

19 - Barbara Hodgins, op. cit., p.6

20 - ibid, p.8

21 - Larry Pratt, "The State and Province-Building: Alberta's Development Strategy" in Leo Panitch, cd., The Canadian State: political Economy and Political Power (Toronto: University of Toronto Press, 1977) p.134

22 - Canada, Energy, Mines and Resources, op. cit., p.13

23 - ibid, p.13

24 - ibid, p.14

25 - Other federal tactics include aggressive exploration spending by PetroCanada and the use of Dome Petroleum as a policy instrument. For a discussion of the latter company, see Peter Eaton "Dome Petroleum as a Chosen Instrument", unpublished

26 - See Appendix A and "Federal Energy Spending to Decline by 8.3%", . Oilweek, February 28, 1983, p.8

27 - Marsha Gordon, Government in Business (Montreal: C.D. Howe Institute, 1981) p.162

28 - Craig Flood, "The Political Economy of Accumulation Strategies: A Case Study of the National Energy Program", B.A. Thesis, Queen's University, 1982, pp.70-71

29 - ibid, pp.71-73

30 - Canada, Energy, Mines and Resources, "History of Depletion on Oil and Gas Expenditures" (Ottawa, 1981), p.2

31 - John Ridsdel, "Dome's 'Big Gamble'", Calgary Herald, 22 August, 1979. Reprinted in Northern Perspectives VII, No. 6, 1979, p.11

32 - William Richards, Oil and Gas Incentives - A Net Benefit to Society", Speech to the Canadian Association of Petroleum Production Accounting, Calgary, Alberta, September 1979, p.6

33 - Table based on data supplied to me by the Petroleum Incentives Administration, Ottawa, 1983

34 - See Appendix B

35 - Craig Flood, op. cit., p.56

CHAPTER TWO

The Economics of Oil Exploration

Introduction

The corollary to the politics of oil exploration is the economics of oil exploration. The distinction between the two spheres is somewhat artificial, since the reality of decision-making in the oil and gas industry, as in any other" industry, consists of observing unlimited and constantly changing economic and political indicators and choosing a feasible course of action. Nonetheless the distinction between economics and politics will be made in this chapter.

Only a particular area of the economics of oil exploration will be discussed, that of large-scale energy projects and the special problems that arise in their financing. It should be emphasized that what is being described in the following pages is not the present reality of the financing environment of energy projects, but rather the situation as it was perceived by business and government in the years leading Up to the National Energy Program. The value of the exercise lies in re-creating the policy environment of the time, in reproducing the assumptions and projections of various observers. The difference between the policy environment of 1979 -1980 and the present is rather obvious. Three years ago it was widely believed that Canada was on the brink of an unprecedented investment boom, led by the megaprojects. Both economic indicators such as the availability of capital and the initiatives of the federal govern-ment encouraged this perception. But the boom did not materialize as expected. Continuous economic decline has characterized the past few years

and drastic fluctuations in interest rates, increased inflation, and decline in the world price of oil have all contributed to a situation whet-e large-scale energy projects seem less and less feasible.

Nonetheless the megaprojects are an enduring feature of the Canadian political and economic landscape. They have held the interest, indeed the fascination, of several generations of Canadians since the construction of the Canadian Pacific Railway, and will continue to do so. The Beaufort Sea exploration program that is the subject of the final chapter is a case in point. There has yet to be a barrel of oil produced from the area; yet billions of dollars have been, and will be, sunk into exploration. The public profile of the project is quite high, as the high-technology assault of Canada's frontiers and the whole idea of Northern development continues to attract the attention of the Canadian people.

The megaprojects are still used as part of the public policy agenda, touted as a solution for Canadian economic stagnation even in an environment that makes their construction unlikely. Headlines still appear that are intended to rekindle the aggressive development spirit that prevailed prior to the NEP, for instance "Major Projects May Yet Play Big Upturn Role"[1] and the like. Thus the examination of the admittedly over optimistic scenario at the end of the 1970s may provide clues to any development that does occur, in addition to providing some insight into the federal government's decision to use the PIP,

The thesis of this chapter is that the problems of financing the new energy projects are such that it would be difficult to construct oil and gas megaprojects and Canadianize the oil and gas industry at the

same time. The problem lies with the risks associated with the mega-projects and the capacity of the Canadian financial market to deal with these risks. It is suggested that the risks of financing the new projects are so great that Canadian capital would not be attracted to fund them without being granted special treatment by government. The federal government with the Canadianization objective wished to encourage Canadian capital to invest in the Canada Lands, but probably recognized that it would be difficult to source the required funds in the Canadian capital market. Accordingly fiscal instruments such as the PIP were introduced make the Canada Lands more attractive to Canadian capital.

Byway of introducing the policy environment in the late 1970s and early 1980s that encouraged optimistic discussion of the possibilities of megaprojects, two initiatives of the federal government will be summarized, the National Energy Program, and "Economic Development for Canada in the 1980s". The National Energy Program, introduced in late 1980, detailed, among other things, the federal government's priorities in the Canadianization of the oil and gas industry, outlined sweeping changes in the structure of the industry, and hinted at the expansion of the energy industry based on an increase in the world oil price. It did not specifically mention the relation between this expansion and economic development in general and was not, therefore, primarily an economic development package.

The second initiative of the federal government was the 1981 policy statement "Economic Development for Canada in the 1980s",2 The document suggested that Canada has a comparative advantage in the production

nd extraction of natural resources, and that this comparative advantage would continue in the long term due to an increase in the value of natural resources in the international market. Consequently, it was in the national interest to develop natural resources, and the suggested vehicles are the megaprojects. To quote from the document:

> The leading opportunity lies in the development of Canada's rich bounty of natural resources. There is increasing world demand for Canada's major resources. energy, food projects such as wheat and fish, forest products, and minerals such as coal and potash. The 1980s will see substantial development of energy and energy-based industries. . .
>
> The Major Projects Task Force, for example, identifies $440 billion of projects, predominantly in the energy and resource sectors, which are under consideration for investment between now and the end of the century.[3]

'The thesis of the document is that megaprojects will be the engine of economic growth in the 1980s.

If the legislation giving special treatment to the oil and gas industry contained in the NEP is combined with the suggestion above that the energy megaprojects will be the engine of economic growth in the 1980s, the result is an entity that satisfies both requirements - Canadian oil and gas megaprojects. These entities will potentially 1) act as vehicles of resource-led economic growth, and 2) work to recapture domestic control of the oil and gas industry,

In theory, the Beaufort Sea drilling program undertaken by Dome, Gulf, and Esso could satisfy both these requirements. But the program does not have all the characteristics of a megaproject. A megaproject is not

usually considered unless there are proven reserves of the resource to be developed, for instance as in the case of Syncrude. This is clearly not the case in the Beaufort, where there have been some large oil and gas discoveries but none large enough to permit commercial recovery under present conditions. A megaproject also tends to be self-contained, with some work being done on the resource after it is extracted, Syncrude again demonstrates this point, as the tar sands are extracted and refined to a certain degree before being transported, The Beaufort, however, will not. likely be the scene of any refining. A third difference is that projects tend to be managed by a single entity, whereas the Beaufort program is divided between three larger corporations and a number of smaller companies, often in competition with one another.

For the purposes of this chapter, however, the Beaufort drilling program will be considered as comparable to a megaproject because it shares with the megaprojects an important characteristic, . that of capital intensity. This distinguishing feature is the basis of much of the discussion below, because it raises the question of the sources of funds for the projects" and the problems and risks of the financing of megaprojects. A comment by Bruce Doern summarizes this characteristic:

> Megaprojects are by definition capital intensive. As events in 1981 and 1982 have shown, they are therefore especially sensitive to financing and capital market problems' and conditions including interest rates, inflation rates, and medium and long term price movements, They induce all parties to deflect risk as much as possible on others.[4]

The plan of the following pages concentrates on sources of capital to fund megaprojects, and the suggestion is put forth that a shift in the sources of capital made the PIP an important policy tool. The oil industry in Canada has traditionally relied on internal sources of capital, but indications over the past six years are that the industry has been relying increasingly on external sources of funds. The tendency to source funds externally raises a number of issues, for instance the capacity of the Canadian capital market to SUpply these funds and the probability that much external financing will originate from outside the country even if the country is technically capable of supplying them. The tendency of Canadian oil and gas companies to rely on outside capital is brought' out through an examination of data prepared by the Petroleum Monitoring Agency. Finally, some of the risks of relying on external capital to finance energy investment and possible solutions to these risks will be presented, It is suggested that the PIP was necessary so that megaproject development that had the desired level of Canadian ownership could occur on Canada Lands.

Sources of Funds and Related Issues

Internal sources of funds are funds that are raised directly by a firm through its operations. They comprise net income, deferred taxes, exploration and development expenditures written off against current income and non-cash items such as depletion, depreciation, and amortization.

The financing of investment in the oil and gas industry has traditionally relied on internal sources of funds. In the period between 1960 and 1974, for instance, internal sources of funds accounted for 72.7% of total sources of funds.[5] This reliance on internal sources of funds is related to the way in which the oil industry has operated in Canada. A great deal of the early work was carried out by subsidiaries of large companies and was financed from funds generated by operations outside the county Smaller Canadian entrants into the industry were initially financed through the issuing of equity, and subsequent oil discoveries were either developed by selling them or entering into a joint venture with a larger, more financially secure enterprise. Development of discoveries was difficult for the smaller companies because it was hard for them to raise the necessary funds in the capital markets. The lack of assets, plus the long lead times between investment and payback, tended to create a heavy risk burden for debt. As a result of this tendency, reserves and production capacity were traditionally confined to the larger companies.

The major issue in the availability of internal sources of funds is the profitability of the corporation. If cash flow is available, it will be possible to make new investments. Cash flow is of course affected by numberous outside factors, such as the price paid for oil and gas, the fiscal regime, costs of developing discoveries, etc. Because of the tendency at present to shift towards external sources of capital, the issue of profitability will not be discussed in any detail.

The sources of external investment are sources of funds that originate outside the company, and can be classified as either foreign or domestic. The two most significant sources of funds are new long term debt, acquired from banks and institutional investors, and new equity, which usually takes the form of stocks. It is argued that a substantial new source of external funds for the oil and gas industry is the PIP.

An important issue in the sourcing of investment capital is the shift from internal to external sources of funds. In the economy in general, non-financial private corporations have been able in the past to rely to a large degree on internal sources of funds to finance investment. Over the past few years, external sources were used for about 40 to 50% of the total investment in financial and non-financial assets. This proportion rose to more than 55% towards the end of those periods in which there were several years of rapid investment increases. The extent to which various types of external financing were used - bonds, mortgages, stocks, loans, etc., depends on whether or not a buildup of financing requirements had taken place, and what had been happening to interest rates. In 1978 and 1979, for instance, while the growth of the economy was slow, rates of increase of investment rose and the external financing requirements of corporations rose dramatically. In 1980, with the economy in recession and little increase in investment taking place, financing requirements grew very slowly. The principle at work here is that external financing requirements tend to rise as financing requirements in general rise.[6]

In 1976, Energy, Mines and Resources put out a volume entitled "Financing Energy Self-Reliance" that appeared to set the trend for some of the thinking on megaproject financing. It stated that major energy investment would create an unprecedented demand for funds, which would challenge the financing capabilities of even the largest of Canadian companies. Debt financing would be required to enhance the commercial attractiveness of projects. Future development, and the pace thereof would depend to a much greater degree on the linkage between the oil and gas industry and the capital markets, and on the fiscal systems in which investments will be made.[7] The document reinforces the idea that increases in financing-requirements will mean an increase in the use of external sources of funds, and also with the point on "fiscal systems" foreshadows the arrival of the PIP

The tendency toward the use of external funds raises the question of the Canadian financial system and its capacity to supply funds and the possible continued use of foreign sources of funds. One of the crucial issues in the supply of funds to projects is the size of the financial market, which in turn is dependent on the amount of savings that people are willing to commit to lending institutions. The Canadian capital market has traditionally enjoyed a high ratio of savings relative to its overall size. The reasons for Canadians' tendency to save are historical and are also due to legislation such as Registered Retirement Savings Plans. Such devices encourage individuals to postpone consumption and help to raise personal savings rates.

In the 1970s, for instance, personal bank, trust company, and credit-union type deposits rose dramatically (up 339% from 1971 to 1980)[8] as did pension fund assets (up 348% from 1971 to 1980).

It appears that the Canadian capital market will have the capacity, in technical terms, to deal with the demands for funds that would be placed on it in a megaproject investment boom. But it is equally true that other markets outside the country will be relied upon as well. The Canadian capital market is smaller and less secure than the American market and this will lead many Canadian investors to seek the security offered south of the border. Conversely, the relative abundance of American funds usually means a greater propensity to accept risk that will prevail in Canada during a megaproject boom. Hence, under these circumstances, Canada's need to borrow on the American and other international markets will be considered "business as usual".

Further on this point, in a 1981 study done for the Canadian Energy Research Institute, John Dawson predicted that non-resident sources of funds would become more significant in periods of heavy resource investment.[9] In Financing the Future,[10] Arthur Dormer suggests that it is not the total weight of demands on the capital market that will prove difficult, but the megaproject character of the lending.[11] From the perspective of investors, portfolio diversification alternatives are very limited in Canada since most of the wave of investment will be tied to the energy sector, and as a consequence foreign markets will continue to be tapped throughout the 1980s.

In summary of the above points, it is suggested by observers that external financing requirements grow as do financing requirements in general, and that due to the risks inherent in megaproject development, many of these external requirements will be placed on foreign rather than Canadian capital markets.

The Shift From"Internal to External Sources of Capital in the Canadian Oil Industry

In the above discussion the general perception has emerged that megaproject funding will require a reliance on external, and in some cases foreign, capital. But that discussion was based on projections for energy megaprojects in general - what of the oil and gas industry in particular? To discover the shift from internal to external sources of capital in the petroleum industry recourse will be made to data collected by the Petroleum Monitoring Agency.[11]

According to the 1977-78 Report of the Petroleum Monitoring Agency, sources of funds available to the industry other than internal sources increased sharply from the previous year to just over $3 billion. As a consequence, the share of external financing to the total increased to 38.2% from 32% in 1977. Well before the National Energy Program and the megaproject strategy, and even before the second OPEC price shock in 1979, there was , the beginning of a tendency in the oil industry to seek sources

outside internal cash flow. The largest component of the increased external reliance was long term debt, which accounted for "1227 million, up 39% from 1977". The increased use of drilling funds as a means of financing drilling programs contributed to this rise. As a group, external sources of funds were much more important to the Canadian companies, amounting to 62.5% of their total investment in 1978.

This trend continued in 1979, as funds derived from sources other than internal cash flow grew at an even faster rate than internal cash, totalling .$4.8 billion, a 56.6% increase over the previous year. Reflecting the fact that several companies had been investing in excess of 100% of cash flow, the Canadian-controlled group of companies far out-stripped the foreign-controlled group in using funds for petroleum investment purposes. Foreign-controlled companies also resorted to a considerably lesser extent to outside sources of capital. External sources of capital increased some 20% in 1979 for the foreign subsidiaries and nearly doubled for the Canadian-controlled group, largely reflecting the fact that growth through acquisitions was aggressively pursued by Canadian companies in this period.

In the PMA report covering the first half of 1980, it was reported that there was a rapid increase in internal sources of funds, but there was nonetheless a greater reliance placed on external sources of funds during the period with long term debt and equity increasing by approximately $500 million and $700 million respectively. New long term debt and equity grew faster than internal cash flow. Total external sources of funds were increased by just under 15% to $3.1 billion.

In the full 1980 report, the above trend continued. Total funds available to the industry were $15.4 billion. Of this total, internal cash flow accounted for $9.6 billion, In addition, the industry raised more than $5.7 billion in new long term debt and equity issues. Most of the increase in long term debt was accounted for by the Canadian-controlled junior companies, who more than tripled the net amount of funds raised through long term debt and equity financing, and by the integrated companies, who almost doubled their financing from these sources.

The chart below, which compares data on the use of external sources by Canadian and foreign-controlled companies over the entire decade, shows that there was an increase in the proportion of total source of funds raised from capital markets in the second half of the decade. For the foreign-controlled group, the increased reliance on capital markets is consistent with their higher level of capital expenditures relative to internal cash flow in the latter half of the decade. In the case of the Canadian-controlled companies, the growth in acquisitions in the second half of the decade increased their dependence on external financing in that part of the decade.

AVERAGE NET EXTERNAL FINANCING

AS A PERCENTAGE OF TOTAL SOURCES OF FUNDS'*

	1971-75	1976-80	1971-80
Canadian Controlled	15.6	34.4	30.0
Foreign Controlled	0.6	5.8	4.0
Total Base Group	3.5	14.4	11.5

In summary, it is clear that reliance on external sources of funds in the Canadian oil and gas industry parallels the tendency toward reliance on external funds in the financing of energy megaprojects in general. The Canadian controlled companies are in a particularly precarious position as regards external financing, as the next section, will demonstrate.

Risks Associated With External Financing

There are numerous risks associated with the increased use of external sources of funds for investment.

If funds required by the oil and gas industry come as direct foreign investment, this will increase the already high level of foreign investment in the Canadian economy. Substantially increased foreign loans may also be likely to limit their future borrowing capacity and increase the risk of default of repayment.

The option of relying on foreign sources during an energy investment boom will be much more expensive than it has been in the past for several reasons. Global demands on capital will be great and the cost of foreign capital will be high; secondly, the NEP has damaged the country's investment reputation and thereby drives up the cost of capital.[13]

A further risk of increased reliance on foreign sources of capital as perceived by Pitfield, MacKay, Ross is that associated with the switch from low to high cost capital.[14] The recent explosion of foreign borrowing in the years 1980 and 1981 observed by P.M.R. had a direct effect on Canada's foreign indebtedness and the burden of interest payments abroad. Up to the mid-1970s Canada's foreign indebtedness via funded debt and

bank loans maintained a stable relationship to GNP. Since that time, however, foreign borrowing has increased vastly more rapidly than the GNP, from 13.5% to 18% of GNP over the last five years. There has been a massive and rapidly expanding pool of hard currency obligations, and as a result, interest and dividend payments abroad have begun to rise at extremely rapid rates. On the basis of a 10% interest rate, it is probable that the burden of interest payments abroad is well in excess of $5 billion annually and growing at a rate of 30% per annum. In a follow-up report 2 months after the one that supplied the estimates above, PMR reported that the massive increase in foreign borrowing had continued, and that portfolio transactions and chartered-bank operations indicate a total borrowing (up to the end of 1981) of $20 billion. Over the same period, the capital account balance indicated a net financing requirement of only $3.7 billion in respect of the deficit on foreign goods and services trade.[15]

Another risk of external financing is that posed by inflation, The problem of high inflation and interest rates in the economy in general are compounded in megaproject financing, The difficulty lies in the sheer size of the undertaking, the fact that the projects have long payoff periods, and the risk of non-completion posed by the public review process, The capital intensity of exploration and development of frontier oil, for instance, will increase the risk associated with interest rates. As interest rates rise, firms evaluating projects according to discounted cash flow will turn away from projects with long lead times unless prices are expected to rise quite rapidly.[16]

A final risk to be added to the list of risks will by no means exhaust the endless variety of problems associated with external financing. The increased demand placed on capital markets with the growth in demand for external funds creates a potential bunching effect, where demands are placed to closely together for the market to assimilate. The timing issue is of importance in assessing the capacity of the Canadian capital market to bear the demand for megaproject lending.[17]

Possible Solutions

It is now possible to move to a discussion of possible solutions to the risks of external financing listed above. The first possibility involves a new role for the banks and the government.

The role of banks in external investment is important because they facilitate the flow of funds between sources of capital and demand for capital. In the future they may also be involved in project financing as managers, an issue that will be discussed later on. The energy industry in general and the oil and gas industry in particular will be much more dependent on bank loans in the future than they have been in the past. Energy lending, however, requires greater expertise on the part of the banks than does conventional lending, as engineers are needed to assess the accuracy of borrower's geological and technical projections, and economists must constantly update complex models of energy markets and the effects of new government regulations. Even as

banks find their profit margins whittled away by competition, they will find more and more customers seeking relief from past loans. If the demand for funds had increased as was expected in the early 1980s, banks would have been forced to take on short term deposits to finance long term loans. To alleviate the risks of this kind of manoeuvre, banks will attempt to shorten the terms of their energy loans and lengthen the terms of their deposits. The effect of these changes would be to shift the risk from the borrower to the lender.[18]

Another tendency, distinct from the term of loan and deposit issue above will be the shift of banks' loan portfolios more towards energy lending. To strengthen their capital base, banks themselves will turn more frequently to the equity market, and in doing so will come into direct competition with the energy firms they are attempting to fund. To summarize the situation that would arise if a number of projects went onstream in the near future and the corresponding role of the banks, it would appear that when a potential borrower approaches a bank with a large energy scheme, his intention will be to get the best deal with the least risk to himself, The key issue is which party, the borrower or the lender, will be responsible for non-completion, delays in completion, or insufficient revenues from the project to cover costs. The borrower attempts as far as possible to make the loan "non-recourse", that is, to shift the entire risk on to the lender and to tie the project's debt service to the project's cash flow. The bank, conversely, will look for higher equity commitments from the borrower and at least partial'.

recourse to the borrower in the event of failure of the project or in the event that there is insufficient cash flow from the project to cover debt servicing.[19]

The banks will have a twofold challenge, first, project risks will have to be identified and eliminated as far as possible, and second, these risks must be covered in a manner that ensures that the project can be financed "within a rapidly changing investment climate. The former requires the ability to interpret highly technical and complex project evaluations, and the latter necessitates a standing in world capital markets and a familiarity with their workings.[20]

Governments will also have a new role to play in underwriting the investments of private enterprise in megaprojects. Some analysts go so far as to say that government has become the most important actor in the system. To the extent that government intervenes and involves itself in the energy sector, financing of activities in this sector is largely structured by government decisions. For instance, as regulations under the National Energy Program change, so will the feasibility of certain undertakings. If large-scale resource projects are to go ahead, significant parts of each package will be subsidized loans, equity investment, accelerated write-offs, and royalty reductions.[21]

Private enterprise will take a number of steps to make financing arrangements that are less vulnerable to fluctuations in interest rates. Drilling funds , for instance, have been used to raise funds for oil exploration and development, and their use will probably increase, In some instances the funds will be arranged separately from the exploration company, and in other cases they will be more closely linked, as is the

case under the NEP.

Oil companies will also take steps to increase their connection with other sectors of the economy. An example of this is the entry of Brinco into the oil industry after its reorganization in 1980 and BCRIC, which acquired Kaiser Resources in the same year.

To the extent that various types of longer term financing can be arranged, energy companies can reduce their heavy dependence on bank loans and other types of credit that are exposed to fluctuations in the interest rate. In certain circumstances companies will move to replace loans with other types of responsibilities such as the February 1981 $65 million financing by Bow Valley Industries Services in units containing long term convertible debentures and common shares.[22]

Another solution to the problem of financing energy projects is a technique called project financing.[23] This technique involves the creation of a separate entity for each project that issues securities that are structured in such a way that debt service and equity returns are provided by revenues generated by the project. This is in contrast with conventional financing in which the creditor relies more on the general credit worthiness of the borrower than on the revenues generated by the project. Lenders involved in project financing face a series of long term risks and, as a result, they usually insist that a credit worthy party enter into a commitment to provide any funds over and above the original financing plan that are necessary to complete the project.

A final solution to the increasing riskiness of financing mega-projects is the PIP program. As a source of external capital, the PIP has become fairly important, according to Petroleum Monitoring Agency data.

For the year 1981,[24] the oil industry raised $14.3 billion from external sources which amounted to 64% of total sources, in marked contrast to the 48% contribution of external sources to total sources in 1980. The $8.5 billion growth in these new sources is primarily accounted for by an increase of $6.6 billion in new long term debt. The remaining increase is comprised of $0.7 billion in PIP grants. Canadian-contolled companies accounted for $563 million or 84% of total PIP grants. The total amount of $670 million disbursed through the PIP was offset by $924 million in the Petroleum and Gas Revenue Tax for a net deficit for the reporting companies of $254 million. This net deficit was distributed between a $234 million surplus of PIP over PGRT for Canadian-controlled companies and a $488 million deficit for-foreign-controlled companies.

In the first half of 1982,[25] the most recent data available, total sources of funds available to the industry declined 12% to $10.7 billion. Reductions in new long term debt and new equity issues were almost offset by increased funding from PIP payments. Reporting companies estimated their PIP payments at $438 million in the first half of 1982, Canadian-controlled companies accounting for $399 million or 90% of the total amount. The following table summarizes the use of the PIP by sector and by area.

ESTIMATED PIP PAYMENTS*[6]

(million $)

	Canadian Controlled		Foreign Controlled	
	1981	1982	1981	1982
British Columbia	14	12		
Alberta	84	120		
Saskatchewan	2	2		
Other provinces	2	2		
Canada Lands '	128	263	34	39
Total	230	399	34	39

It is clear from the above data that PIP is an important source of external funds and its use appears to be increasing, particularly in the Canada Lands.

In a recent study of the use of Petroleum Incentives Payments that assumed a steady level of activity in the Canada Lands, capital expenditure requirements for the upstream sector were forecast to be between $55 and $75 billion to achieve 50% Canadian ownership. Canadians will probably be required to make at least 50% of these expenditures, or around $30 billion, The PIP will probably contribute $6 billion and internal sources of funds another $12 billion, leaving a deficit to be raised externally of some $12 billion, before considering such items as working capital, debt requirements, dividends, and other requirements.

The problem with PIP is that although it has become an integral source of financing, it is extremely visible, in the sense that the program gives direct grants to an industry that is perceived by the public to be very rich at a time when recession is a political issue. There

is every possibility that the PIP will be phased out not only for this reason but because the revenues that were expected to materialize to fund the PIP have not materialized.

Conclusion

In Chapter Two a number of issues related to the problems of financing energy projects have been discussed, with a view to providing some insight into the financing requirements of the Beaufort Sea drilling program. To a certain degree the PIP offers a solution to the problems and risks of external financing: After analysing the shift in dependence from internal to external capital that would be required in a megaproject investment boom and showing the parallel between this scenario and the present reality of the Canadian oil and gas industry, some of the problems associated with the reliance on external capital and the necessity to source some external funds abroad were discussed. Although the PIP offers a partial solution to the problems, its continued use as a policy instrument of Canadianization is threatened.

FOOTNOTES - Chapter Two

1 - Wendy Kerr, "Major Projects May Yet Play Big Upturn Role", Globe and Mail 23 March, 1983, p.B7

2 - Canada, Economic Development for Canada in the 1980s, November, 1981

3 - ibid., p.2

4 - G. B. Doern, "Energy Policy and the Megaprojects as an Instrument of Economic Development", paper presented at the Carleton University School of Public Administration 30th Anniversary Conference, Ottawa, Ontario, December 1982, p.35

5 - Canada, Energy, Hines-and Resources, ''Financing Energy Self-Reliance" Report EP 77-78 (Ottawa: Minister of Supply and Services, 1977) p.25

6 - John Dawson, Financing Canadian Energy Resource Development (Calgary: Canadian Energy Research Institute, 1981) pp.39-40

7 - Canada, Energy, Mines and Resources, op. cit.

8 - John Grant, "Saving Graces", Canadian Business April 1982, pp.S99-S100

9 - John Dawson, op. cit., p.5

10 - Arthur Dormer, Financing the Future (Ottawa: Canadian Institute for Economic Policy, 1982) p.59

11 - Canada, Petroleum Monitoring Agency, Canadian Petroleum Industry - Monitoring Survey 1977-78, 1979, 1980

12 - Canada, Petroleum Monitoring Agency, Canadian Petroleum Industry Monitoring Survey 1980 p.48

13 - Geoffrey Cummings, "Capital Requirements for the Canadian Oil and Gas Industry", Royal Bank Global Energy Group, 1981, p.9

14 - Pitfield, MacKay, Ross, Economics Department "Capital Outflows and the Exchange Rate: The Risks and Strains of Financing the New Nationalism" July 1981, pp.5-9

15 - Pitfield, MacKay, Ross, op. cit., September 1981

16 - Arthur Dormer, op. cit., p.50

17 - ibid

18 - John Dizard, "Canadianiz ation Comes to the Energy Business", Institutional Investor, February 1981, pp.140-142

19 - Geoffrey Cummings, op. cit., pp.10-11

20 - M. J. Regan, "Hey, Big Lender", Canadian Business April 1983 p.S119

21 - John Dawson, "Financing Energy Development in the 1080s", paper presented to the Canadian Investment Seminar, University of Western Ontario, June 20, 1982, pp.9-10

22 - Dawson, Financing Canadian Energy Resource Development pp.49-50

23 - ibid, p.52

24 - Canada, Petroleum Monitoring Agency, Canadian Petroleum Industry Monitoring Survey 1981 pp.25-27

25 - Canada, Petroleum Monitoring Survey, Canadian Petroleum Industry Monitoring Survey First Half 1982 p.2-3

26 - ibid

27 - David Scrim, "COR Policy and Rate Enhancement", notes for an address to the CCH Canadian Ltd. Conference on "The NEP - Its Challenges and Opportunities" January 17, 1983 pp.4-6

CHAPTER THREE

The Petroleum Incentives Program and the Beaufort Sea

Introduction

It is now possible to gain a preliminary assessment of the impact of the Petroleum Incentives Program on a particular area of the " Canada Lands. In doing so it is hoped that some light can be shed on the question posed in the introduction, that is, the degree to which the Canadianization objective of the NEP has been realized through the implementation of the PIP in the Beaufort Sea. That objective stated that Canadians should be encouraged to invest their savings to finance the expansion of the Canadian-owned and controlled sector of the petroleum industry. The success of the PIP as a policy instrument to realize this objective is measured by noting changes in the levels of spending of the major Beaufort explorers since the PIP was announced, observing any changes in corporate structure of companies exploring the Beaufort to take advantage of the PIP, and finally by noting the increase in the Canadian participation in Beaufort exploration through the re-negotiation of exploration agreements. Whatever conclusions are drawn in answer to the question of PIP's success as a policy instrument of Canadianization can only be preliminary, because the program has only been in place for a short time.

By way of introduction to the examination of changes in the Beaufort due to the PIP, some discussion of the relation between the

PIP and Canadian Ownership Rate (COR) regulations should be undertaken. This somewhat technical information will perhaps clarify the action of private enterprise in adjusting to the new regulatory climate. This is followed by a brief history of exploration in the Beaufort.

PIP and COR

The following page is a chart that details the Canadian Ownership Rate and the level of grants that companies with various rates are eligible to receive. The column of greatest interest for the purposes of this chapter is that in Table 2, Canada Lands Exploration, Level 4 COR. It is this highest level of the PIP grants that most of the new activity is geared towards, so that private enterprise can lower the costs of its exploration projects. It is this level also that encourages the large multinationals exploring the Beaufort, Dome, Gulf and Esso, to take on Canadian partners on their lands. In doing so they increase the overall COR of the project and increase their grant entitlement.

Under such circumstances it is obvious that the competition to raise the COR could be quite fierce, and that all the tactics used may not be in the spirit of the Canadianization objective. In other words, the foreign-owned sector of the Canadian oil industry will bend over backwards to raise its COR without losing essential control of their operations to Canadian interests. The COR rules are dedicated to establishing the "beneficial" ownership of economic interests involved

TABLE 1

Transition Period for Phasing-in Incentive Payments

Year Starting January 1	Level 1	Level 2	Level 3	Level 4
1981	<50%	50%+	60%+	65%+
1982	<50%	50%+	61%+	67%+
1983	<50%	50%+	62%+	69%+
1984	<50%	50%+	63%+	71%+
1985	<50%	50%+	64%+	73%+
1986	<50%	50%+	65%+	75%+

TABLE 2

Levels of Incentive Payments for Oil and Gas Exploration and Development

	Provincial Lands Level				Canada Lands Level			
Exploration	1	2	3*	4	1	2	3*	4
1981	nil	nil	25	35	25	35	65	80
1982	nil	10	25	35	25	45	65	80
1983	nil	10	25	35	25	45	65	80
1984	nil	15	25	35	25	50	65	80
1985	nil	15	25	35	25	50	65	80
1986	nil	15	25	35	25	50	65	80
Development								
1981	nil	nil	15	20	nil	nil	15	20
1982	nil	10	15	20	nil	10	15	20
1983	nil	10	15	20	nil	10	15	20
1984	nil	10	15	20	nil	10	15	20
1985	nil	10	15	20	nil	10	15	20
1986	nil	10	15	20	nil	10	15	20
Non-Conventional Etc.								
1981	nil	nil	15	20				
1982	nil	10	15	20				
1983	nil	10	15	20				
1984	nil	10	15	20				
1985	nil	10	15	20				
1986	nil	10	15	20				

* Level 3 is an addition to the PIP system. Levels 1, 2 and 4 were announced in the NEP.

in oil exploration and development. The Petroleum Monitoring Agency is the body responsible for determining the COR rates of companies by applying, with some modifications, the rules for determining foreign ownership adopted by the Foreign Investment Review Agency. Typically, shareholders with foreign addresses will be presumed to be non-Canadian, but those with Canadian addresses will not automatically be assumed to be Canadian. Applicants must be corporations incorporated in Canada, citizens of Canada or landed immigrants, partnerships, and trusts. COR rulings last for 18 to 30 months, and applicants for a COR are required to advise the Petroleum Monitoring Agency when there is a change in Canadian control "or a significant change in the COR.[2]

History of Beaufort Exploration

The history of modern oil exploration in the North begins with the 1960 federal government land regulations. These regulations were different from those offered by other oil producing countries in that the government decided to forego revenues during the exploration stage and give companies long term rights to the land. The decision was based on the fact that it was difficult at the time to get anyone to explore the harsh and remote Canadian North even though geological information was promising.

Instead of paying rent for"exploration rights the oil companies agreed to do a certain amount of work. In the beginning of their land

tenure, the companies paid a small deposit that was returned to them if the agreed upon work was performed. After the third year of holding rights, work requirements escalated, so that the explorer would have to perform $2.65 per acre worth of exploration work, up from the initial 5 cents per acre. If the company was successful and found hydrocarbons, it had the right to take out a twenty year lease on half its acreage and pay the government a royalty of 10% of production.[3]

The 1960 land regulations were considered generous because they allowed companies to hold land for a long time and to pay very low royalties. It is somewhat ironic that the NEP, one of the more controversial pieces of legislation in Canadian history, had as part of its thrust the repatriation of these exploration rights from the original explorers. The Beaufort Sea exploration play with Dome, Gulf, and Esso as major players, came at the end of this regulatory phase and was the outgrowth of a period of intense exploration activity in the Mackenzie Delta. Alaska's Prudhoe Bay discovery in 1968 made areas in Canada with similar geological characteristics more attractive than they had been previously. The discovery is credited with increasing Northern Canadian oil and gas exploration spending from $30 million in 1968 to $200 million in 1972.[4]

A further impetus to Beaufort exploration was the promised construction of the Mackenzie Valley pipeline. The prospect of an efficient mode of transportation for gas made the Delta-Beaufort area seem less remote. The offshore became attractive after much of the Delta had

n explored, and indications were that promising geological structures lay to the North. Accordingly, Esso pioneered the construction of rtificial islands in the shallow offshore, where it has the largest land-dind presence, in 1970. Exploration continued actively in the rst half of the 1970s, and increased in 1976 with cabinet approval f Dome Petroleum's offshore drilling program. Gulf's activity since hat time has been closely tied to Dome's, because it contracts a Dome ubsidiary, Canadian Marine Drilling, to operate the wells in which it as a majority interest.

The introduction of the superdepletion allowance in the March 977 federal budget allowed operators such as Dome to drill extremely xpensive wells at a relatively low cost to the company. This did not revent exploration from declining toward the end of the decade. There re at least two reasons for the decline, one being the 1977 federal overnment decision not to build the Mackenzie Valley pipeline to tap the reserves of gas that had been found in the Mackenzie Delta. e downturn in exploration was intensified by the increased attractive-ess of the Western provinces, which were being re-examined because of the crease in the world oil price. The impact of the National Energy ogram of 1980 remains to be examined, and will form much of the tails of the chapter. In the final reckoning, it should be noted that GeologicalSurvey of Canada believes there are hugh reserves of oil nd gas under the Beaufort. It estimates that the Beaufort Sea and the enzie Delta contain between 9.4 and 12.3 billion barrels of oil and tween 3.1 and 4.1 trillion cubic metres of natural gas.[5]

The Impact of PIP in the Beaufort

There are a number of ways to measure the impact of PIP in the Beaufort. In the following section changes in the spending habits of the major explorers since the introduction of the PIP and the changes in corporate structure as a result of the PIP will be examined. The inclusion of Canadian companies in the renegotiated exploration agreements is also considered to be an important indicator. The section closes with a summary of changes in the Beaufort.

The increase in exploration spending in the Beaufort since the introduction of the new regulatory regime in 1980 is presented below, drawing from Petroleum Monitoring Agency data.

CAPITAL EXPENDITURES ON EXPLORATION IN CANADA BY LOCATION

	1980	1981	Change
	($ millions)		(%)
Provinces	3416	2562	25.0
Canada Lands of which:	719	1204	67.4
Offshore	336	461	
Mainland Territories and Beaufort Sea	266	675	
Artic Islands	84	68	
TOTAL CANADA	4135	3766	(8.9)

EXPLORATION EXPENDITURES[7]
IN CANADA -- BY LOCATION

	1981	1982	Increase (Decrease)
	($ millions)		(%)
Provinces	1378	1055	(23)
Canada Lands			
Beaufort Sea	152	240	
Labrador East	106	110	
Sverdrup Basin	42	46	
Atlantic Shelf South	48	125	
Total Canada Lands	358	568	59
TOTAL CANADA	1736	1623	(7)

The increases in aggregate exploration spending above reflect to a large degree the increase in spending of the major Beaufort explorers.

In early 1982, it was reported in the Globe and Mail that Dome expected to spend $500 million in the Beaufort that year, up from approximately $400 million the previous year. Esso reported that it would spend $60 million in the Beaufort in 1982, roughly the same amount as the previous year.[8]

In December 1981, Gulf Canada Resources Ltd., the company that explores Gulf's Beaufort holdings, announced the commitment of $674 million for a Beaufort Sea drilling system to be delivered over the next three years. The fleet for use in deep offshore drilling is now under construction at British Columbian and Japanese shipyards. The flagships of the fleet will be two matched ice-class 4 icebreakers worth a total of

$74 million, and 2 ice-class 4 supply ships worth $32 million, all four ships to be built in Canada. The most expensive $140 million drilling unit and $200 million steel caisson are being built in Japan.[9]

Adjustments of corporate structure to take advantage of the PIP can take several forms. The two presented here are the formation of a new company and the use of flow-through shares to raise exploration capital.

The National Energy Program, and the PIP in particular were not all that favorable to Dome Petroleum, because although the company is Canadian controlled, it has a COE of only 36%. Thus the Beaufort drilling program, supported in the past by measures such as the super-depletion allowance, was in danger of failing from lack of funds. In order to take advantage of the PIP and to support its Beaufort initiatives, Dome Petroleum formed a company, Dome Canada Ltd., that was over 75% Canadian owned and was therefore eligible for the maximum PIP grants. Dome Petroleum would take up 43% of the initial share issue and sell the rest only to Canadian citizens. Dome Canada would put up the capital necessary to explore Dome Petroleum's Beaufort lands, and would thereby earn an interest those lands,[10] In creating Dome Canada, Dome Petroleum separated the costs of the Beaufort operation from its general costs, so that the Beaufort could go ahead in spite of the latter's technical bankruptcy since the fall of 1982.

Another example of a company formed to take advantage of the PIP is Trillim Exploration Corporation. In 1981, the process of Canadianizing Suncor was begun with the sale of 25% of the common shares of Suncor from Sun Oil Company to the Ontario Energy Corporation. To supplement the Canadianization process and to take advantage of the PIP, it was agreed that a separate entity should be established to carry out exploration on Suncor Lands. Suncor held interest in frontier lands and wished to sustain a high level of exploration activity as well as retaining maximum ownership of these lands. The Ontario Energy Corporation wished to enhance its interest in Suncor through direct ownership as well as directly support the search for oil and gas. It was agreed that a new, Canadian owned and controlled company would be set up to farm in on Suncor lands in the frontier while allowing Suncor to maintain its maximum interest in the farmee organization.

Trillium Exploration Company was set up as a joint exploration company with a mandate to explore for oil and gas on Canada Lands. Shares are 2/3 owned by a subsidiary of the Ontario Energy Corporation and 1/3 owned by Suncor. This provides Trillium with a COR of 75% so it receives the maximum PIP grants. Trillium has entered into a farm-in with Suncor off the Labrador coast, with Panarctic in the Arctic Islands, and is negotiating with. Suncor concerning opportunities in the Beaufort Sea and Mackenzie Delta.[11]

The formation of a company to take advantage of the PIP that uses flow - through shares is another example of adjustments of corporate

structure of companies operating in the Beaufort. Beau Canada Resources Ltd. is such a company, formed in 1982 expressly to take a 4% working interest in Esso's $660,000,000 farm-out in the Beaufort. The company paid $27.5 million for the working interest, and financed the expenditure by issuing 5,500 units worth $5,000 each. An investor purchases one such unit by paying $1,560 in cash and signing a letter of credit for $3,440. The cash buys the investor 1,500 Class A shares at 20 cents each for a total of $300, pays a $4oO commission, and covers 20% of the unit's share in the exploration program. The balance of the exploration costs are recovered through the PIP, which pays 80% of costs, eventually retiring the letter of credit.[12]

The final measure selected to evaluate the impact for PIP in the Beaufort is the exploration agreements recently renegotiated between Dome, Gulf, Esso, and the federal government.

Under the Canada Oil and Gas Lands Act, the companion legislation to the PIP and COR, the system of land tenure prior to the NEP was renegotiated. All permit holders were required to convert their permits into exploration agreements. Each agreement consisted of three elements: a five year term work program, specific drilling and seismic commitments, and an agreement that companies would return 50% of their lands to the Crown at the end of the term of the agreement. According to the law, before any production could take place, the owning interests had to achieve at least 50% ownership and control. Because of the Canada Oil

and Gas Lands Act, therefore, the large multinational landholders in the Beaufort had to increase their Canadian ownership rate to 50%. It was in their interest to do so because it would entitle the operation to the maximum PIP grants.

On May 10, 1982, the federal government announced that it had concluded six agreements with Esso Resources Canada for an exploration program of about $660,000,000 in the Mackenzie Delta-Beaufort Sea area.[13] The agreements were the first to be signed under the Canada Oil and Gas Lands Act, and were the outcome of nine months of negotiations. The substance of the agreements is as follows: Esso has agreed to include ten Canadian companies in its offshore exploration program, which will pay 90% of the cost of drilling between nine and nineteen exploratory wells over the next five years. Each well drilled by the farm-in group will earn an interest in Esso's acreage. At the end of the contract years, if the nine wells are drilled, the COR of the lands will rise to 50% from the present 25%.

The second major agreement was concluded between the federal government and Gulf Canada Resources on January 20, 1983.[14] The five year agreement, which can be extended to seven years if Gulf, as the operator of the lands increases its total drilling commitments beyond the agreed-upon five wells, involves total expenditures of more than $1 billion. About half the exploration spending, expected to average $80 million a year, will be financed through the PIP. Although

Gulf is eligible only for the minimum PIP payments, its Canadian partners will raise the level of Canadian ownership.

On March 10, 1983, the third major exploration agreement was announced, between the federal government and Dome Petroleum.[15] Five separate agreements were signed, expected to involve close to $1 billion for operational work over the next five years Dome and Dome Canada will be responsible-for up to 75% of the cost of the entire $969 million program, or about $720 million over the five year period. Dome Canada will earn varying interests of up to 50% of Dome Petroleum's working interest in certain of these lands, in return for paying all of Dome's exploration costs. Most of these expenditures will be eligible for the PIP grants. The agreements require Dome and partners to drill eight wells and to complete 3,900 km of marine seismic work. One well will be drilled under each agreement and the remaining wells will be drilled in the most promising structures.

To conclude the section on the measurement of the impact of PIP, it should be noted that in the period 1977 to 1981, a total of 39 wells were drilled in the Beaufort, and in the period 1982 to 1986 it is expected that 43 wells will be drilled.

Conclusion

It is clear from the discussion above that there is a connection between the PIP and the aggregate spending on exploration in the Beaufort,

corporate structure of some companies operating in the Beaufort, and with the Canadian participation in the new exploration agreements. It is difficult to state categorically that PIP alone had a direct impact on all these areas, but it is clear that it is an important factor. If the PIP has been effective as a policy instrument, however, this does not mean necessarily that it has been successful. The reason for making this distinction should be clear, given the policy environment at present. Since the implementation of the PIP, the world oil price has dropped considerably, there is a worldwide energy surplus, a decline in demand for energy in Canada, and new knowledge of the Beaufort discoveries that makes forecasts of production in the near future less than believable. The technological barriers to development have not been overcome as quickly as anticipated, and one of the major Beaufort explorers, Dome Petroleum, is technically bankrupt.

It was stated in the introduction to this chapter that any conclusions regarding the success of PIP would be of necessity preliminary, due to the short time span of its existence. The relative costliness of the PIP, an admittedly effective policy instrument, may determine that its existence is limited.

FOOTNOTES - Chapter Three

1 - Canada, Energy, Mines and Resources, News Release, February 16, 1981, p.4

2 - Jeff Carruthers, "New COR Regulations", Globe and Mail, 28 November, 1980, p.B1

3 - Judith Maxwell, Energy From the Arctic (Montreal: C.D. Howe Institute, 1973) pp.18-24

4 - Gurston Dacks, A Choice of Futures (Toronto: Methuen, 1980) p.130

5 - ibid, p.133

6 - Canada, Petroleum Monitoring Agency, Petroleum Industry Monitoring. Survey 1981, p.30

7 - Canada, Petroleum Monitoring Agency, Petroleum Industry Monitoring Survey First Half 1982, appendix B-8

8 - Anthony McCallum, "Oil Companies Shifting Funds to the Frontier", Globe and Mail, 4 January, 1982, p.B1

9 - Dunnery Best, "Gulf Plunges Ahead in Beaufort Treasure Hunt", Financial Post, 9 January, 1982, p.4

10 - Hugh Anderson, "Dome's Daring Set Up Record Issue", Globe and Mail 4 March, 1981, p.B1

11 - Peter Lamb, "Trillium Resource Corporation" paper presented at the ECH Canadian Ltd. Conference on "The NEP - Its Challenges and Opportunities" Toronto, January 17, 1983

12 - Dunnery Best, "Flow Through Shares May Fill Oil Firm's Needs", Financial Post, 30 January, 1982, p.18

13 - Giles Gherson, "Esso Agreement Won't Start Industry Rush", Financial Post 10 May, 1982, p.4

14 - Jennifer Lewington, "Ottawa, Gulf, Plan to Probe Beaufort Sea", Globe and Mail, 20 January, 1983, p.B4

15 - Dome Petroleum, Press Release, Description on Exploration Agreement 10 March, 1983

GENERAL CONCLUSION

The final chapter leads to the conclusion that the Petroleum Incentives Program was an effective policy instrument but that it has not been completely successful in terms of realizing the Canadianization objective for the Canada Lands. Although it has contributed to the increase in the level of Canadian ownership on the Canada Lands by bringing Canadian companies into the renegotiated exploration agreements it is unlikely to continue to do so. The federal government, given its.. present financial difficulties, will be unable to supply the necessary funds for a demand-driven program like the PIP. It grew out of a policy environment that has changed in almost all its manifestations since 1980. It is doubtful, given an understanding of the political ambitions of the federal government as outlined in the first chapter, that the Canadianization objective was put forth in as sincere a manner as the rhetoric would lead one to believe. The second chapter reveals some of the enormous risks associated with large-scale energy development such as is occurring in the Beaufort, and it is clear that the PIP has been used by some companies to alleviate these risks. But if the program is withdrawn, the smaller Canadian companies that have gone into the Beaufort may find themselves footing the bill of an extremely costly exploration program, searching for a "resource that has dropped drastically in value. If this is the case in the future, the PIP may yet furnish another rather spectacular example of a forced growth tactic gone wrong.

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