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Canada: Petroleum Policy and Prospects



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An Intelligence Assessment

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*EUR 83-10285
GI 83-10287
December 1983*

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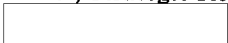


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Canada: Petroleum Policy and Prospects

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An Intelligence Assessment

This paper was prepared by  of the
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**Canada: Petroleum Policy
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Key Judgments

*Information available
as of 15 November 1983
was used in this report.*

We doubt that Canada will achieve its goal of maintaining net oil self-sufficiency through 1990, although the shortfall is likely to be small—perhaps 200,000 b/d. Canada temporarily is self-sufficient because of the large drop in consumption resulting from the recession.

Since 1980, when the National Energy Program introduced heavy taxes and discriminatory exploration incentives and declining world oil demand softened oil prices, Canada's oil production has dropped 10 percent. Oil production in conventional oilfields is likely to continue to decline, and the outlook for offsetting these decreases with increases in oil output from synthetic oil facilities or frontier areas is bleak. Oil consumption, meanwhile, probably will rise slowly during the rest of the decade.

Whether Ottawa can return to oil self-sufficiency in the longer term depends, in large part, on the willingness of the federal government to pursue energy policies that encourage exploration and development. To this end changes in taxes, special incentives for synthetic oil, and a moderation of retroactive claims for federal rights to some portion of all frontier discoveries are likely.

If adopted, these changes would, in our view, go a long way toward improving Canada's oil production prospects in the 1990s, eliminating the need for net oil imports.



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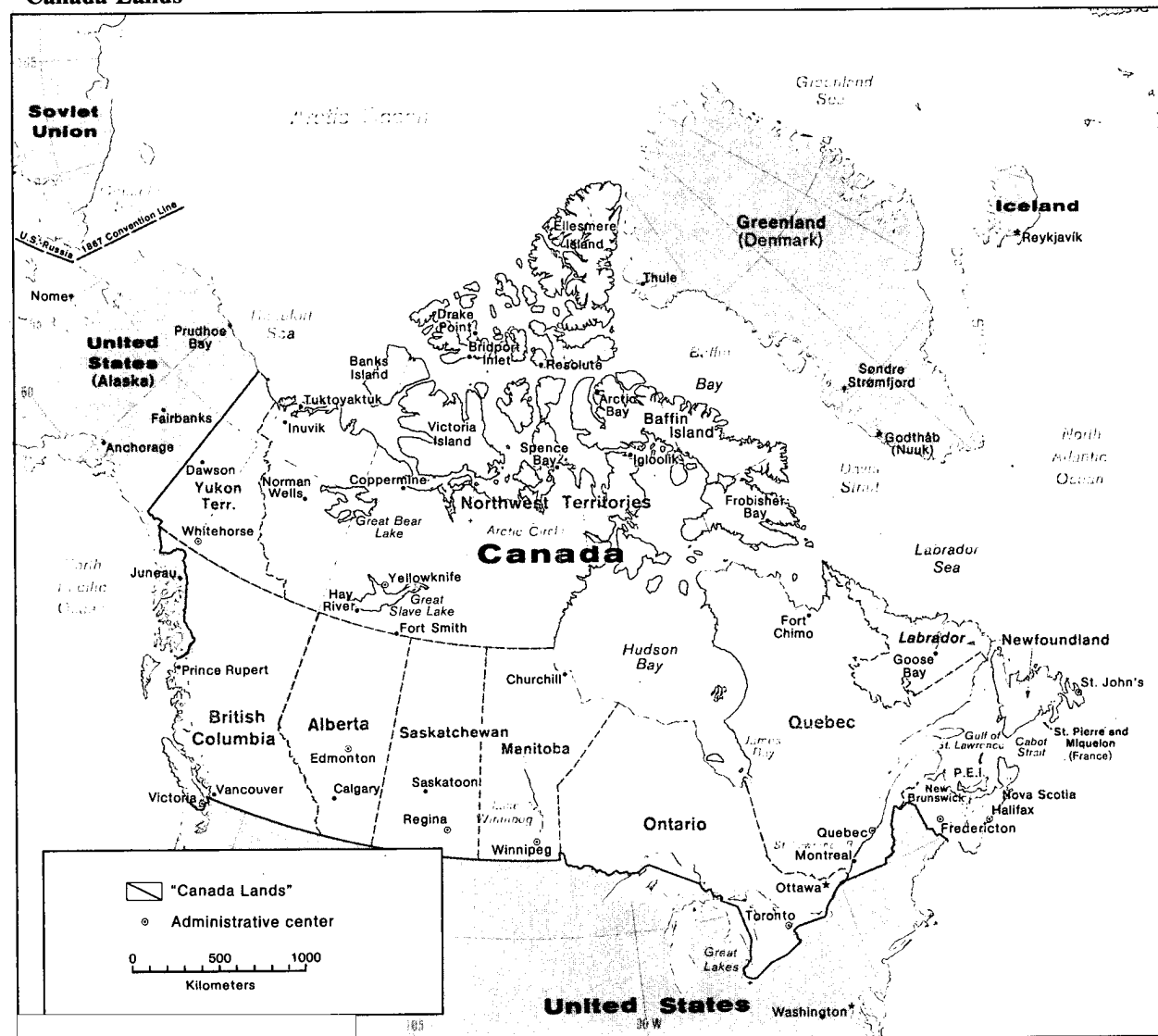
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Figure 1
"Canada Lands"



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[Redacted]

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Canada: Petroleum Policy and Prospects [Redacted]

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Oil Policy and the Federal-Provincial Relationship

Ottawa and the provincial governments share jurisdiction over petroleum resources. Under the constitution, the provinces own the resources within their borders and control development and production. Ottawa has the power to regulate interprovincial and foreign oil trade and to levy taxes on the resources. In addition, the federal government owns all petroleum resources located in frontier areas, known collectively as the Canada Lands and including the Yukon and Northwest Territories, the High Arctic, and the Pacific and Atlantic offshore areas (figure 1). Ownership of energy resources in some offshore areas, however, is also claimed by the coastal provinces, as is the case with Newfoundland. This situation has led to several federal-provincial disputes. [Redacted]

Although the provinces own their domestic resources, energy prices and the distribution of revenues from petroleum production are determined by federal-provincial agreements: For several years prior to 1980, the federal government kept prices and taxes low to protect consumers. At the end of 1978, domestic oil prices were only \$11.00¹ a barrel, or about 80 percent of the world price. Petroleum revenues were shared between Ottawa (10 percent), the provinces (45 percent), and the oil industry (45 percent). [Redacted]

The runup in world oil prices in 1979-80 prompted a reexamination of Canada's domestic pricing and revenue agreements. By the end of 1979, domestic oil prices were less than half world levels, and the producing provinces were pushing for domestic price increases. Then Prime Minister Joe Clark was on the verge of completing a revised agreement with Alberta that would have substantially raised domestic oil prices when his government fell. Pierre Trudeau's Liberal Party was returned to power with a solid majority in February 1980—largely because of its campaign against higher domestic oil prices—and

¹ All prices are in US dollars. [Redacted]

Canada's Petroleum Resources

Canada's proven conventional oil reserves amounted to approximately 7 billion barrels at the end of 1982. Roughly 80 percent are located in the Province of Alberta. Although small by OPEC standards, this amount is about a fourth of US reserves, a half of British reserves, and all of Norwegian reserves. Proved reserves have been declining steadily for more than a decade and totaled 10.4 billion barrels in 1970. [Redacted]

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Canada's vast frontier regions [Redacted]

[Redacted] have good geologic potential, and current Canadian policy is designed to accelerate exploration and development in these areas. Although most frontier basins are still relatively unexplored and forecasts of reserves are thus imprecise, the Geologic Survey of Canada has estimated potential oil reserves in frontier areas at 29 billion barrels. According to the survey, the east coast offshore area shows the greatest promise and may contain over 40 percent of total expected frontier oil reserves. [Redacted]

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As in the United States, Canada's greatest oil reserves are in unconventional forms. The Geologic Survey of Canada estimates proved oilsands reserves in the western provinces at 100-200 billion barrels, most of which are in Alberta. Despite considerable development efforts, these reserves do not appear to be exploitable in large quantities under present market conditions. [Redacted]

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Trudeau quickly moved to formulate a new energy policy [Redacted]

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[Redacted]

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Table 1 *Billion barrels*
Canada Lands: Potential Oil Reserves^a

Offshore east coast	12.6
Beaufort Sea/Mackenzie Delta	9.4
Arctic Islands	5.0
Other	1.9
Total frontier	28.9

^a Reserves are estimated at a 40-percent probability.

The National Energy Program and Recent Modifications

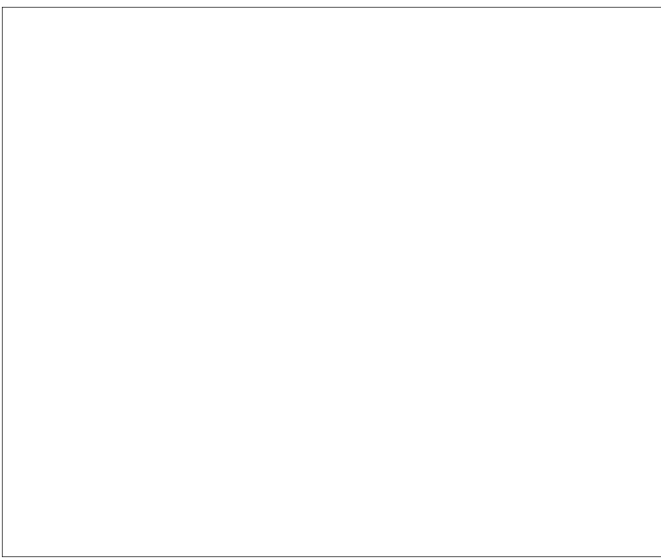
After failing to conclude an energy agreement with Alberta, which objected to the new government's energy-pricing and revenue-sharing proposals, Trudeau launched the National Energy Program (NEP) in October 1980. Its objectives included:

- Gaining greater federal control over energy revenues and protecting the Canadian consumer from the full impact of world oil price increases.
- Increasing Canadian ownership of the petroleum industry to 50 percent by 1990.
- Achieving energy security by 1990 by eliminating net oil imports, which were running at 124,000 b/d.

To make Canada self-sufficient in oil by 1990, the NEP encouraged oil conservation, energy-switching, and domestic oil production. Through a gradual rise in domestic oil prices³ and federally funded conservation programs, Ottawa acted to reduce the demand for oil. The NEP also contained incentives to promote substitution away from oil—primarily toward Canada's more abundant supplies of natural gas.

The NEP attempted to encourage production by stressing nonconventional resources and introducing a system of exploration grants administered under the Petroleum Incentive Program (PIP). PIP incentives were explicitly designed to favor Canadian-owned

³ The price of conventional crude oil produced from fields discovered before 1 January 1981 was to rise gradually to a ceiling of 75 percent of the world price for equivalent crude. New oil and synthetic crude prices would rise to world levels.



companies and to promote a shift in oil exploration activity from the western provinces to the Canada Lands. Funds for these conservation and exploration programs were to come from additional taxes levied in the NEP.

The timing was unfortunate as the NEP coincided with a worldwide slump in oil demand that hurt the domestic industry. In response, both Alberta and Ottawa shifted policies in early 1982. In April, Alberta announced a relief package for the oil industry, including royalty reductions and one-time grants valued at \$4.4 billion over a five-year period. Alberta called also for a similar federal initiative, and Ottawa responded with *The NEP: Update 1982*, which provided the industry with financial relief estimated at \$1.6 billion over five years, most of it concentrated in the 1982/83 period. Federal concessions to improve the industry's cash flow included a one-year reduction in the petroleum and gas revenue tax (PGRT) from 12 to 11 percent, an exemption of about \$200,000 on PGRT liabilities, and a one-year elimination of the incremental oil revenue tax (IORT). These tax modifications shifted the prospective shares of total revenue to 22 percent for Ottawa, 32 percent for the provinces, and 46 percent for the industry—a gain of 10 percentage points for industry, mostly at Ottawa's expense

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Table 3 Percent
Comparison of Projected Revenues
(1981-86)

	NEP	NEP Update ^a
Total	100	100
Federal	29	22
Province	35	32
Industry ^b	36	46

^a Incorporates Alberta's changes in April 1982.

^b Net of operating costs.

[Redacted]

(table 3). Following the decline in world oil prices, a new price schedule was negotiated this year that holds domestic prices at present levels through 1984, unless there is a sudden change in world prices. [Redacted]

Despite these changes, the thrust of the NEP remains unchanged. In particular:

- Oil prices will still be controlled.
- Canadian companies will still be favored financially over foreign oil firms.
- Oil exploration in the frontier areas will be favored over exploration in the established producing areas.

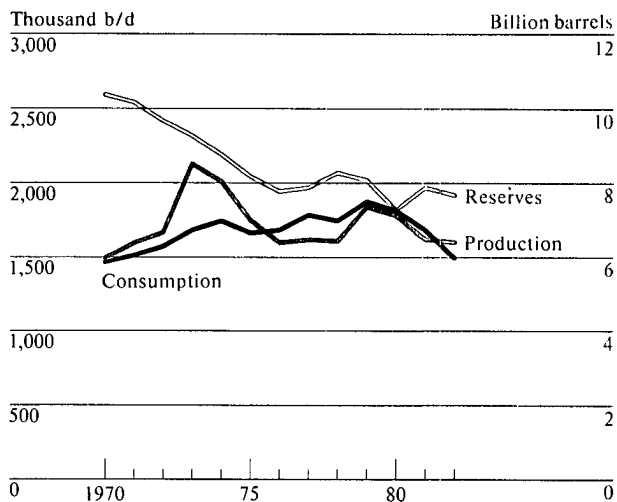
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Impact of the NEP

Although it is impossible to separate the effects of government policy, economic recession, and the depressed world oil market, it is clear that the three years since the NEP was introduced have not been good ones for the Canadian petroleum sector:

- The number of active drilling rigs in Canada fell to 169 in early 1983, some 40 percent below the number in service at the end of 1980.
- Both the Alsands and Cold Lake oil sands projects have been abandoned.
- The NEP undoubtedly has stimulated oil exploration in the frontier areas, but this gain probably has been more than offset by the sharp drop in exploration expenditures in western Canada—from \$3.4 billion in 1980 to \$1.8 billion in 1982.

Figure 2
Canadian Oil: Proved Reserves, 1970-82^a



^a Yearend. Proved crude oil reserves are the volume of oil and gas remaining in the ground that geologic and engineering information indicates with reasonable certainty to be recoverable in the future from known reservoirs under existing economic and operating conditions.

[Redacted]

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- No new major Canadian oilfields have been discovered, and proved oil reserves in 1982 were below the 1980 level even though the reserves in the Hibernia oilfield, located off Newfoundland's coast, were first included in the total in 1981 (figure 2). [Redacted]

The prospect of lower returns on investment due to the NEP's high taxes and the softening world oil market forced the oil companies to cut back on their activity. Smaller Canadian-owned firms with exploration activity centered in Alberta and firms involved in the long-term, capital-intensive oil sands projects were especially hard hit by the new energy policy. Record high interest rates in 1981-82 compounded the problem by escalating the costs of borrowing for these

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Canadianization of the Oil Industry

The NEP contained several provisions aimed at increasing Canadian ownership of the petroleum industry—from 27 percent in 1980 to 50 percent in 1990. These included federal and private-sector acquisitions of a number of foreign-owned—mostly US—firms, as well as a “back-in” or retroactive federal claim to a 25-percent interest in every existing or new discovery on federally owned lands. In addition, a minimum 50-percent Canadian participation was required before new production could be approved on federal lands. Within 18 months of the NEP’s introduction, Canadian ownership of the petroleum industry rose to 35 percent. In addition, almost all the US companies involved in frontier exploration have entered into partnerships or joint ventures with Canadian firms to raise their Canadian content levels. Although US companies continue to operate on Canada’s frontier areas, their ability to benefit from this activity has been sharply curtailed.

Control of the Canadian petroleum industry has changed, as shown in the following tabulation:

	Percent	
	1980	1982
Canada	18.7	26.2
United States	63.4	56.3
Other foreign	17.9	17.5

(C NF)

debt-laden companies. To preserve their financial position, the petroleum companies restricted their activities (see text table.)

The NEP apparently has had more success in encouraging a sharp drop in oil demand. Canada’s oil consumption had increased rapidly throughout the 1960s and 1970s; even the OPEC price hikes in 1973 and 1974 failed to cut Canadian oil consumption because domestic oil prices were kept low. Now, however, the higher oil prices and fuel-switching incentives contained in the NEP have—along with the

**Table 4
Canadian Oil Supply and Demand
Under the NEP**

Million b/d

	Production	Consumption	Net Imports
1979	1.83	1.86	0.03
1980	1.77	1.89	0.12
1981	1.62	1.78	0.16
1982	1.59	1.46	-0.13
1983 ^a	1.60	1.31	-0.29

^a Estimate based on seven months of data.

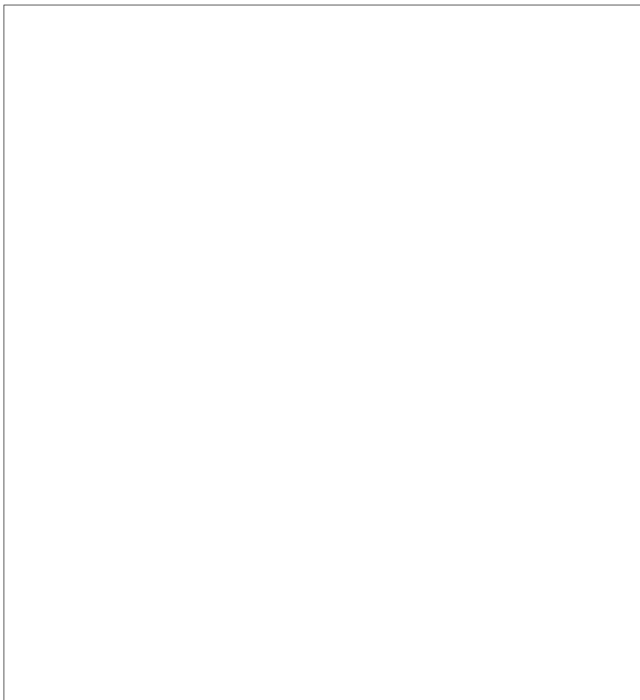
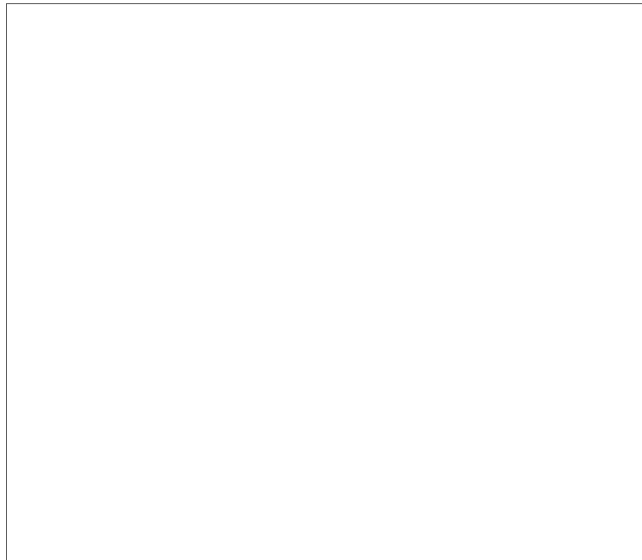
recession—caused a decline in domestic oil consumption. In 1982 and probably through 1983, consumption declined faster than production, enabling Canada for the first time since a brief period in the early 1970s to become a small net exporter of oil. The economic recovery and steady domestic prices will probably boost domestic demand and once again push Canada toward net imports (table 4).

The modifications to the NEP introduced by both Alberta and Ottawa in 1982 were for the most part temporary and did little to improve the financial status of the petroleum industry. Drilling activity in western Canada increased marginally but did not result in any significant oil discoveries. Critics of the drilling programs have noted that the incentives did nothing to direct drilling funds to the most promising areas. The tax concessions were also deemed too small to overcome the negative aspects of the overall tax burden and therefore did not encourage additional investment activity by the petroleum companies. In our view, the greatest benefit of these modifications was some good will created by Ottawa’s attempt to ease the tax burden on the petroleum industry.

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The Demand-Supply Outlook to 1990

We do not believe that under present oil policies Canada will be able to maintain net oil self-sufficiency through 1990; in our judgment, net crude oil imports at the end of the decade will be around 200,000 b/d. This estimate depends on how fast oil production from older fields declines and how much oil consumption recovers after the recession. We think net oil imports might be, at worst, 500,000 b/d in 1990; at best, Canada could be in a net export position, but on a very small scale. [redacted]



[redacted] The poor drilling results of the past two years and the technical difficulties in frontier production indicate no significant oil production from Canada's frontier areas in this decade. In addition, Canada's conventional reserves will continue to decline, and we expect that Canadian oil production in 1990 is unlikely to exceed 1.4 million b/d. [redacted]

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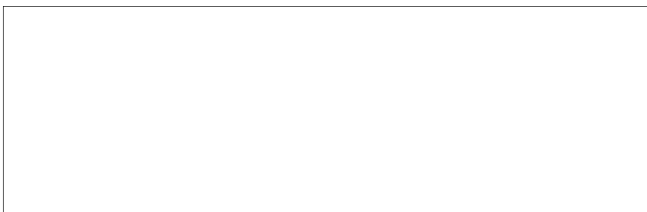
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The Western Provinces. We expect the bulk of Canadian oil production to continue to come from the western provinces, primarily Alberta, for at least the rest of the decade. However, proved crude oil reserves in these areas—currently about 5.2 billion barrels—have been declining at an annual rate of almost 4 percent for more than 10 years. Because the NEP encourages a shift away from exploration for conventional oil in the west, this trend of declining reserves probably will continue unless Canada changes its energy policy. [redacted]

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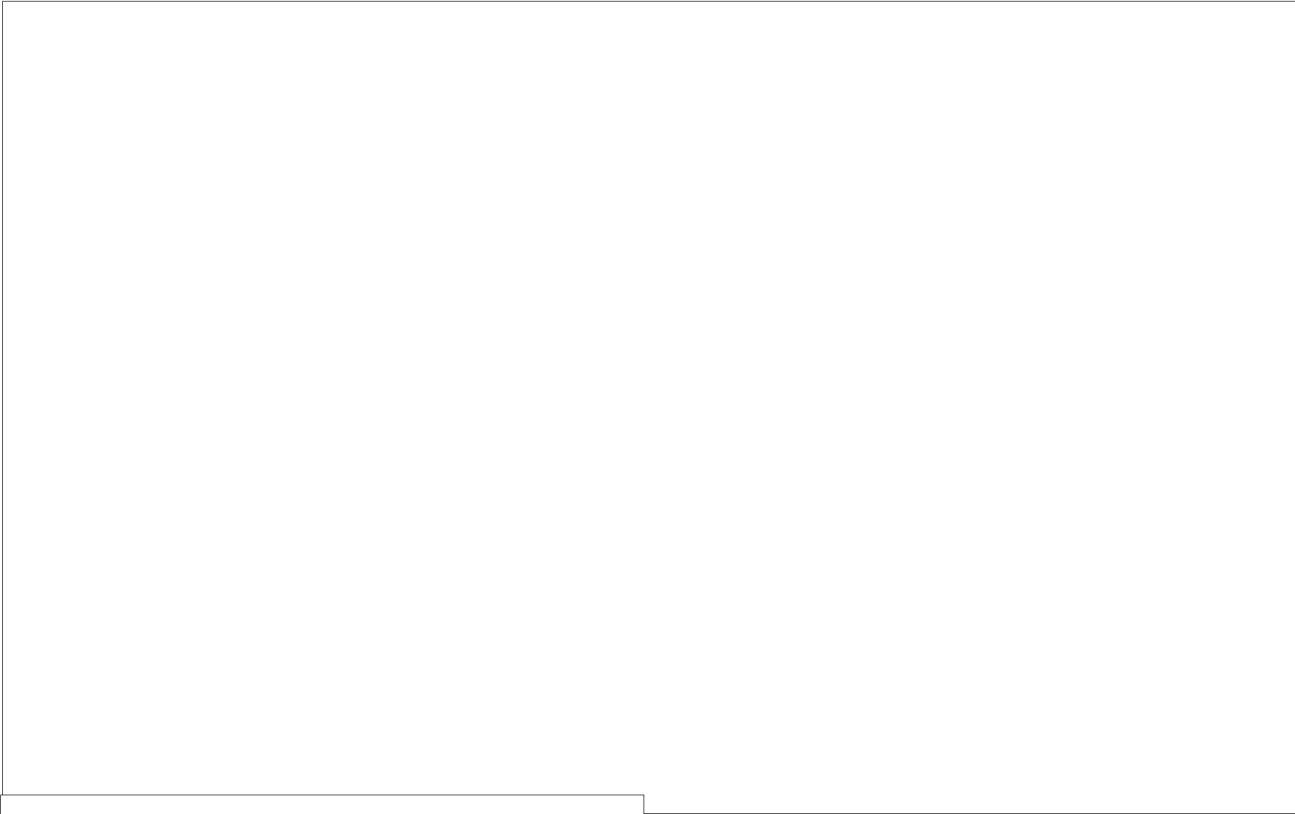
We agree with the NEP's estimates that both natural gas supplies and electricity generation capacity should be more than ample to meet projected increases in demand over the decade. Canada's National Energy Board has allowed for natural gas exports to increase sharply over the period, and additional electricity exports are also being promoted by Ottawa and Quebec. [redacted]



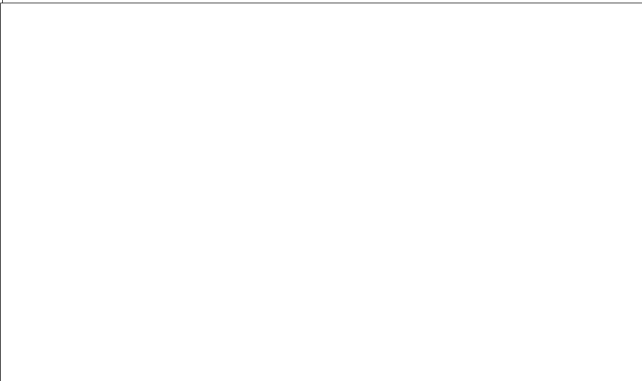
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development. Ottawa's April 1983 budget allows companies involved in synthetic oil production to deduct their capital expenses against the PGRT until original investments are recovered. According to the *Oil and Gas Journal*, the Alberta government deferred provincial royalties on several new projects. [redacted]

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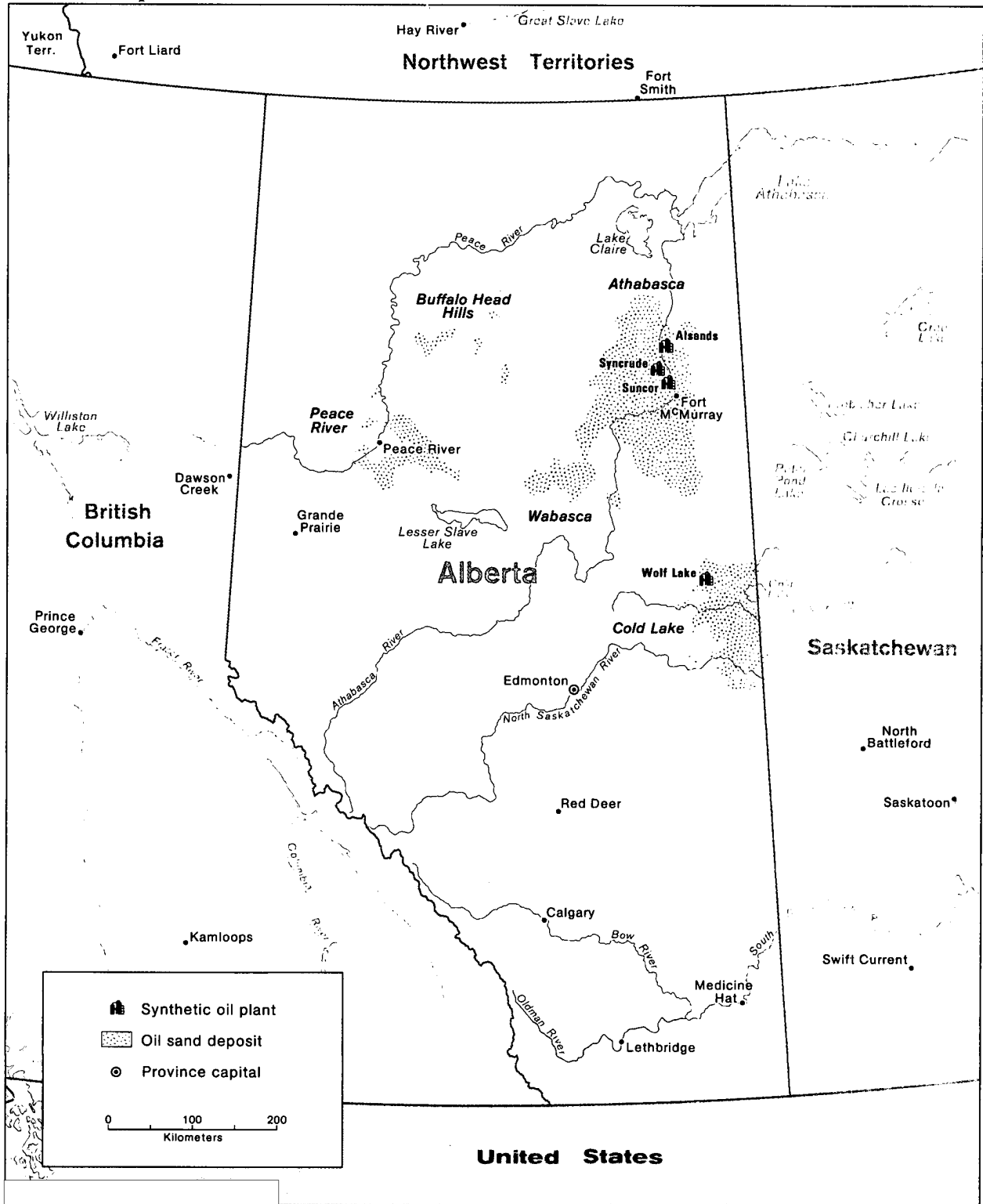
Most oil sands production in 1990 will come from the Suncor and Syncrude synthetic oil plants, which are already operating at Athabaska (figure 4). The 712 billion barrels of bitumen in Athabaska are relatively close to the earth's surface, enabling the use of strip-mining techniques to tap the oil sands deposits. Other oil sands deposits are deeper and require expensive new enhanced-recovery techniques for production. In July, following the announcement of Alberta's royalty reduction package, Syncrude Canada announced a \$970 million expansion of its Athabaska plant to boost production capacity from 129,000 b/d in 1982 to 149,000 b/d beginning in 1987. [redacted]

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We estimate that output from the oil sands deposits will reach only 200,000 b/d by 1990. High tax and interest rates, combined with the oil industry's expectations of lower world oil prices, caused the collapse of Canada's two multibillion dollar oil sands projects—Cold Lake and Alsands—in the past two years. As a result, there has been a switch away from huge projects to smaller phased-in synthetic oil developments that are more easily financed. Both the federal and provincial governments have made adjustments to tax or royalty rates to encourage new oil sands

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Figure 4
Oil Sands Deposits in Alberta



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The oil industry anticipates small increases in oil sands production from new projects:

- Imperial Oil Limited (Exxon's Canadian subsidiary) was recently granted major tax and royalty concessions by both Ottawa and Alberta that will allow the company to proceed with the two initial phases of a project at Cold Lake. The \$245 million project could add 19,000 b/d to Canadian output beginning in 1985. Additional investment at this site could allow total output to rise to 57,000 b/d in the early 1990s.
- Some small pilot projects such as Petro Canada's Wolf Lake project may provide incremental amounts of heavy oil production in the 1980s. Wolf Lake, for example, is expected to produce 7,000 b/d of oil by 1985. [redacted]

The Frontier Areas. Norman Wells, located in the Northwest Territories, currently produces about 3,000 b/d of oil and probably will continue to be the only frontier area in production in the 1980s. Planned expansion in this field, to add 22,000 b/d to capacity by 1986, will require the drilling of 170 additional wells at a cost of about \$700 million. [redacted]

We do not expect significant production by 1990 from the Hibernia oilfield off the shore of Newfoundland—the only new commercial oil discovery to date on the Canada Lands (figure 5). Production was originally scheduled to begin in 1986 with expected peak output of 200,000 b/d, [redacted] the field probably will not come on line before 1990. A dispute between Ottawa and Newfoundland over ownership and control of offshore energy resources has retarded development. [redacted]

[redacted] a federal-provincial agreement is required before the oil companies can proceed with the investments required to develop

Hibernia. Negotiations between Ottawa and Newfoundland have been stalled since January, however, when the issue was referred to both the Newfoundland and Canadian Supreme Courts. The Newfoundland court ruled in favor of federal ownership of offshore resources, but the province government of Newfoundland repudiated the ruling. The Supreme Court of Canada is expected to render its decision in the next few months. If the Supreme Court also rules against Newfoundland, Premier Peckford probably will prefer to delay a final agreement with Ottawa, hoping that the next federal election—which must be held by February 1985—will return a Conservative government more willing to allow Newfoundland some control over offshore resources. Moreover, although Ottawa has recently concluded a series of exploration agreements for work in the area, progress on the development of Hibernia remains stalled. [redacted]

The NEP, primarily as a result of the PIP grants, has been successful in encouraging increased exploration in Canada's other frontier areas, including the Beaufort Sea and the Northwest Territories (figure 5). In 1982, for example, there was a 50-percent increase in exploration activity on Canada Lands. There have been some petroleum discoveries in frontier areas—at the end of 1982 frontier proven and probable oil reserves were estimated at 3 billion barrels—but few of these discoveries lie in commercially exploitable oilfields. Although it is unlikely that there will be significant production of oil from these areas in this decade, Canada's frontiers will remain key to realizing Ottawa's goal of oil self-sufficiency over the longer term (see text table). [redacted]

Prospects for Oil Self-Sufficiency Beyond 1990
A key factor affecting Canada's oil self-sufficiency in the next decade will be energy policy. How it evolves will have a major impact on conventional oil production, on oil sands exploitation, and on exploration and development in the frontier areas. The potential of the frontiers is excellent, but development of oil finds in the hostile Arctic environment will be extremely

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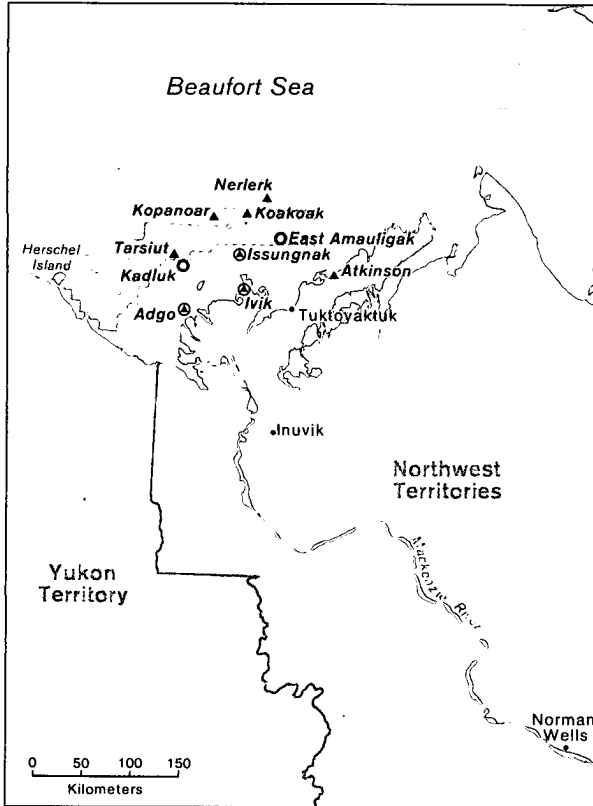
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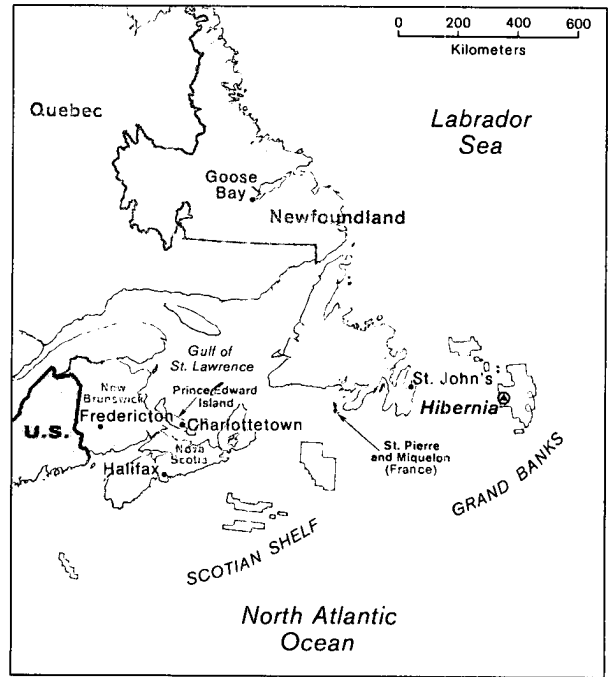
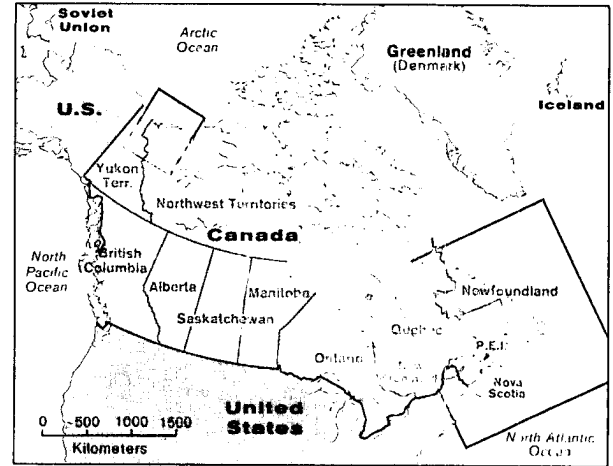
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Figure 5
Canada's Frontier Areas



- Exploration Lands**
- Imperial
 - Mobil
 - Dome
 - Gulf
 - ▲ Oil discovery
 - ⊙ Oil and gas discovery
 - Location well

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expensive and will require the latest—and in some cases not-yet-invented—technology. The industry thus must have confidence that Ottawa will promote policies ensuring some measure of stability and profitability for the long-term investments needed in frontier areas.

_____, we believe the continued depressed state of the energy industry has forced Ottawa to recognize the need for further changes in policy.

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Canada's Frontier Areas—A Closer Look

The offshore east coast of Canada—which includes the Hibernia oilfield—has been the scene of increased activity by energy developers in recent years. Exploration has occurred offshore of Nova Scotia and Newfoundland. In the first half of 1983, for example, 32 exploration agreements were signed with oil companies operating on the east coast. These leases call for the drilling of 38 new exploratory wells over the next five years. Most industry activity is taking place off the Scotian shelf because several large natural gas finds have been made there.

[Redacted]

Prospects for production from the Beaufort Sea in this decade have dimmed, due in large part to the lack of a big strike after promising drilling results in 1979 and 1980. Drilling in 1982 failed to add significantly to proved reserves, and further delineation of the Tarsiut Field—once thought to have the potential to be the Beaufort Sea's first oil-producing field—failed to indicate more than 350 million barrels of oil reserves, an insufficient quantity for development under present market conditions and the current tax regime. The technical difficulties of operating in a hostile climate have also dampened prospects for Beaufort Sea production in this decade.

[Redacted]

Industry interest and activity in the Beaufort Sea remain strong despite the lack of a big find. Three major private-sector operators—Gulf Canada, Dome Petroleum, and Imperial Oil Limited—all launched extensive drilling programs in 1983, aimed in part at

extending the drilling season beyond its present 110 days.

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Gulf will introduce a \$674 million drilling system including an innovative conical drilling unit for use in deep water, a mobile caisson system for use in shallow water, two new icebreakers, and two new supply boats. In addition, Gulf intends to spend over \$436 million in exploration activities in the Beaufort Sea. Gulf signed exploration agreements with the federal government in January to drill five wells—three wildcat and two delineation—by March 1988. Further testing of the Tarsuit Oilfield will be done, as well as new drilling in the East Amauligak area.

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[Redacted]

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Dome Petroleum, although experiencing financial difficulties, plans to increase its Beaufort Sea operations through its subsidiary, Dome Canada, which is 78-percent Canadian owned and therefore qualifies for the maximum PIP grants. In March, Dome and 39 partners signed exploration agreements with the federal government to execute \$960 million in exploration activities by 1987. The agreements also call for the drilling of eight wells.

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Imperial Oil Limited intends to commission a new \$80 million drilling system for use in the Beaufort Sea this year, including a \$20 million mobile drilling caisson. Imperial claims the new unit will accelerate construction of offshore drilling structures, reduce costs, and permit drilling in deeper water. The system is being tested at Kadluk at a cost of \$125 million, the only offshore testing the company will perform this year. In addition, Imperial signed six exploration agreements in late 1982, calling for expenditures of \$800 million. Imperial in turn farmed out much of the work to a Canadian group headed by Home Oil Limited, which will drill 13 wells over five years.

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[Redacted]

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Given Ottawa's past changes
we think that such changes are likely to include:

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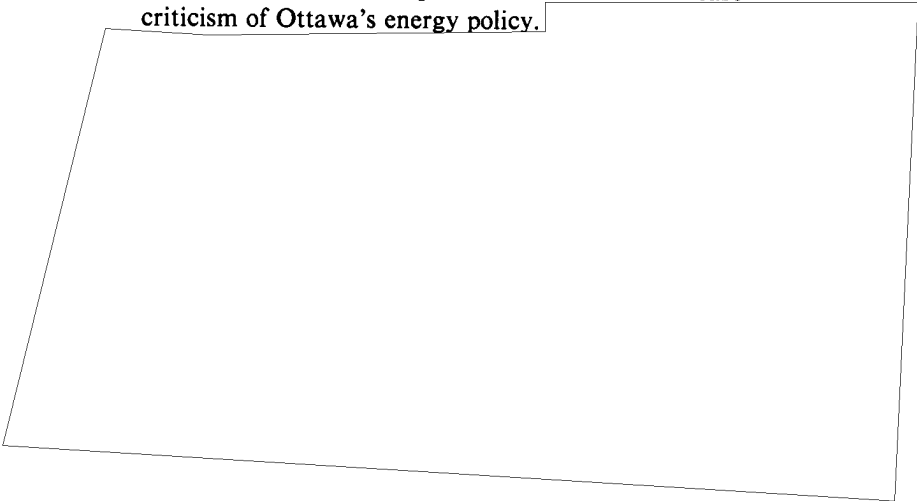
- Additional concessions and special incentives for heavy oil and oil sands development.
- Modifications of the tax structure for conventional oil production in an attempt to slow the decline in productive capacity.



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Such modifications are unlikely to provide significant new production of oil before the end of this decade, but we believe they would go a long way toward improving Canada's oil production prospects in the 1990s and, indeed, could return Canada to net oil self-sufficiency. (C NF)

The foregoing policy modifications probably would benefit domestic and foreign-owned companies by increasing returns to the private sector and would ease criticism of Ottawa's energy policy.



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