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Alberta

ECONOMIC DEVELOPMENT PROSPECTS IN ALBERTA

One of a series of reports
on development prospects
in the provinces, territories,
and regions of Canada
prepared by *Canada*
the Department of Regional Economic Expansion



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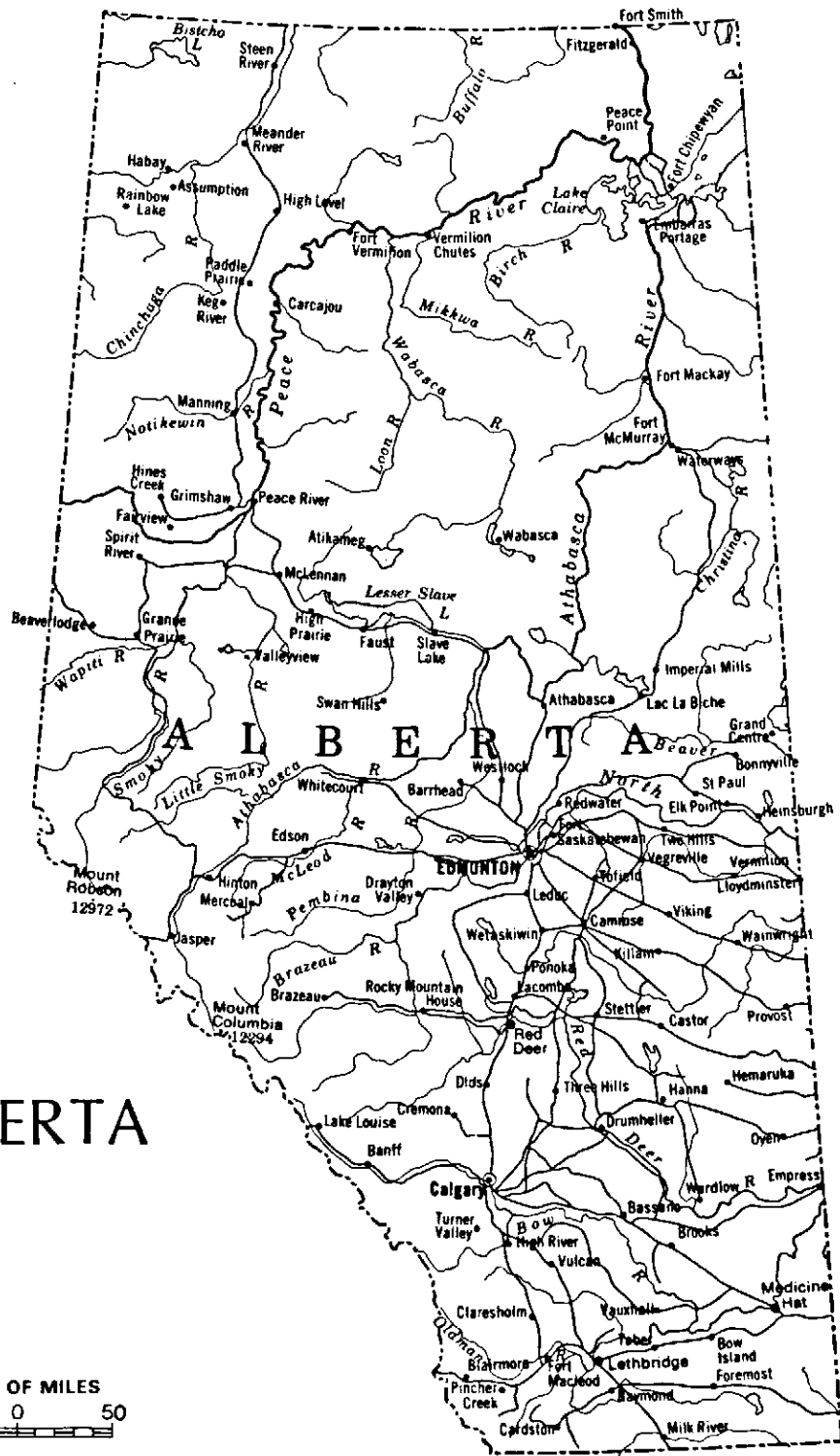
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ECONOMIC DEVELOPMENT PROSPECTS
IN ALBERTA



ALBERTA

PREFACE

In 1973, the Department of Regional Economic Expansion issued a series of reports on the economic circumstances of each of the provinces and their prospects for development. These reports were useful in discussions leading to the successful implementation of a new federal-provincial mechanism, the General Development Agreement, which was designed as a flexible tool to pursue regional development in Canada. This mechanism has as its central objective the formulation of integrated federal-provincial regional development strategies based on the identification and pursuit of development opportunities.

With the aid of hindsight, it now appears that the mid-1970s represented a watershed period in many respects, as fundamental realignments and adjustments occurred internationally and within Canada. These considerations, in conjunction with the recent public discussion concerning the appropriate roles of business, labour and governments in the economy, suggest that this is an opportune time to review in a comprehensive fashion some major economic issues and factors affecting regional development. This report expands upon previous DREE reviews of provincial economic circumstances and opportunities by examining the major factors affecting the performance of the provincial economy. In addition, it explores the policy issues and instruments which affect development planning and which have a bearing on the potential for realizing development opportunities.

The analysis begins with a detailed description of factors relating to economic development and an assessment of the economic performance of the province. This section provides a context for the next section which deals with specific development problems facing the province and the issues which bear on its economic development. Federal and provincial approaches to development are then discussed. The following section on development opportunities is the central focus of the report. In this section, the comparative advantages of the province are described and potential economic development opportunities are highlighted.

It is a truism to note that, over time, regional economic circumstances and development opportunities will continue to change and evolve. In a similar vein, it is obvious that economic development will continue to require an evolving spirit of policy coordination within and between various orders of government. In this context, it is hoped that this report will serve as a backdrop to federal-provincial discussions on the economy and to the further formulation and implementation of integrated federal-provincial development strategies, and at a broader level, contribute a spatial dimension to economic policy-making over the medium term.

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1. OVERVIEW

Despite Alberta's impressive economic performance, its economy displays vulnerability. The major variable contributor to the province's rate of growth is the construction activity associated with large energy-related projects, which when completed tend to result in a visible downturn in employment growth and real domestic product (RDP) as well as in an increased unemployment rate. Any delay or postponement of major new energy developments will therefore have a marked effect on overall economic performance.

Alberta provides an excellent example of an export-oriented economy which benefits from a strong international demand for one of its products, namely energy. This strong energy export position has contributed positively to Canada's balance of payments and has potential to contribute even more. Between 1961 and 1977, according to the measure of output developed by the Conference Board in Canada, the volume of production in Alberta grew annually by an average of 6.5 per cent - as compared to 5.2 per cent for the nation as a whole. During this 16-year period, the size of Alberta's economy has almost tripled and the province's participation in the Canadian economy has risen from 10 to 12 per cent of gross domestic product (GDP). This pace of growth was slightly slower in 1978, with a 6.4 per cent increase in RDP to \$11.4 billion in 1971 dollars with some tapering off in the rate of growth expected through 1979. This is seen as a prelude to the next round of accelerated growth expected in the 1980s.

The fact that the long-term stability of Alberta's economy is dependent upon diversification and the maintenance of the strength of its renewable resource industries, especially through increased support of research and development, must therefore be of concern to government. Major relevant sectors include manufacturing, services, the food industry, forestry and tourism along with petrochemical processing which is important in terms of adding value to a non-renewable primary resource leaving the province.

The long-run health of the economy can be assured by the strength of the private sector, provided public policy both fosters a favourable climate for business development and promotes the realization of spatial and sectoral balance.

Western Canada, and Alberta in particular, will be the focal point of national economic development, especially job creation, for the period covered by this study. However, this development will not be without its risks and accompanying tough international competition. In such an environment, the private sector will look to the various levels of government for leadership, support and complementary action.

2. FACTORS IN ECONOMIC DEVELOPMENT

2.1 Evolution and Introductory Background

The province of Alberta makes up one fifteenth of Canada's area. Except for the extreme northeast corner, it forms a part of the western Canada sedimentary basin, a large area extending from the international boundary along the southern margin of the prairie provinces to the Mackenzie River delta on the Arctic Ocean. The greater portion of the province's land area is part of the interior plains of North America: it contains much of Alberta's agricultural and mineral wealth.

The original inhabitants of Alberta were Plains Indians, who subsisted as nomadic hunters and trappers. As the fur trade moved westward, trading centres were established in Alberta. Actual settlement of Alberta however, did not take place until after the American Civil War when the Government of Canada feared American encroachment. Canada bought the land held by the Hudson's Bay Company, established a police force in the area and financially assisted in the construction of the transcontinental Canadian Pacific Railway, which was completed in 1885. The railway brought in settlers who made the production and export of commodities other than furs both necessary and feasible.

In 1896, Canada instituted a policy of selective immigration based on its economic needs. This selectivity concentrated on farmers and farm workers and was coupled with a strong promotional campaign in Europe. Between 1896 and 1913 the first wave of settlers swelled Alberta's population from 50 000 to 375 000. Halted by World War I, immigration into the province resumed in 1918, doubling the population by 1931.

The result of this immigration of agricultural workers was that large areas of Alberta were homesteaded and the land cleared for farming. The province quickly became a largely rural agrarian economy. This reliance on farming, essentially wheat, left Alberta highly vulnerable to the drought and depression of the 1930s. Between 1931 and 1941 the provincial population fell by 29 900.

The agrarian nature of Alberta continued through the Second World War. In 1947 the first major discovery of crude oil in the province was made near Leduc. That event became a turning point in the evolution of the economic and social structure of the province. The industrial base of Alberta changed rapidly during the 1950s as additional oil and gas discoveries were made, until the 1970s, when energy became the key economic growth generator in the province, a role it has continued to hold.

2.2 Factors

2.2.1 Demographic

The early location of the fur trade, the positioning of the two main rail lines and the development of natural resources have all contributed to make Calgary and Edmonton the dominant population centres of Alberta. Today, these cities and the corridor which has developed between them account for about two-thirds of the provincial population (see Chart 2.1).

The province as a whole has experienced rapid growth to reach its current population of about 1 950 000. The annual population growth rate peaked in 1977 at 3.4 per cent, dropping back in 1978 to 2.9 per cent. The 1978 rate was still noticeably higher than the next highest province, British Columbia at 1.4 per cent and well ahead of the national average of 1 per cent.

The rate of population growth in Alberta is expected to remain stable at 1978 levels, then rise again when increased migration to the province occurs in response to the employment opportunities generated by major developments. By 1986, Alberta may have a population in excess of 2.4 million. Despite growth in rural centres, the Edmonton-Calgary corridor will remain the dominant area.

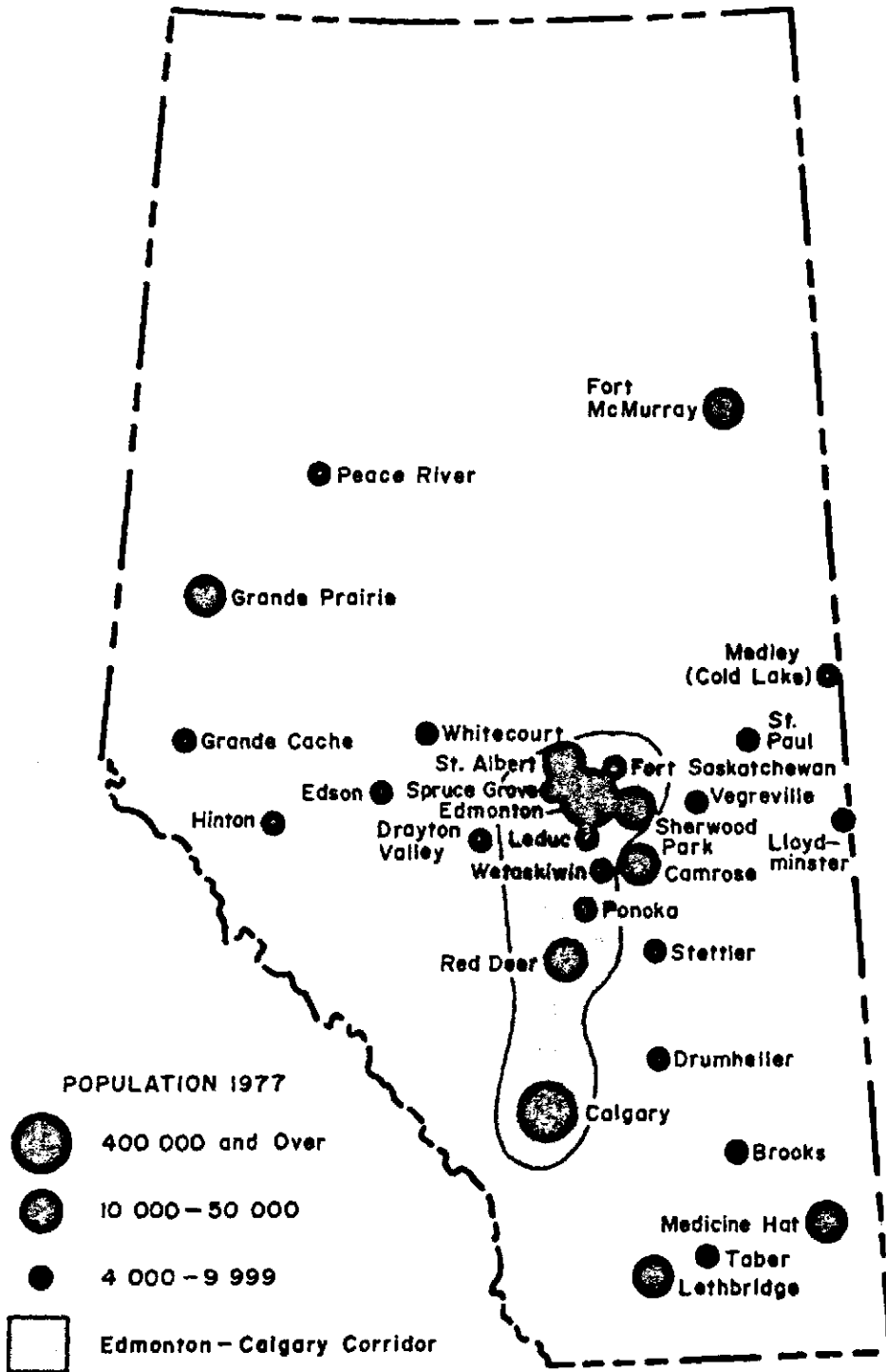
2.2.2 Resource Endowments

While the earliest interest in Alberta by non-indigenous people was generated by furs, interest has continued largely because of other natural resources, namely productive land, oil, gas, coal, other minerals, forests, water and scenic beauty.

Since the arrival of settlers to Alberta, the cultivated area has continued to increase, with about a 1 per cent increase annually over the past 25 years, from 8.5 million hectares in the early fifties to slightly over 11.5 million hectares today. In all, about 20 million hectares are used in crop and livestock production, while it is estimated that another nine million hectares could be brought under cultivation.

The best agricultural soils (the brown, dark brown and the black), the dark grey, and dark grey-wooded make up approximately one third of the province's land area. Cultivation ranges from about one quarter of the brown and dark brown soil zone located in the southeast of the province to two thirds of the black soil zone located in the south-central and east-central

CHART 2.1
ALBERTA



areas. Only one third of the dark grey-wooded soils are cultivated, primarily because they are comparatively less fertile, although much of the recent expansion of the cultivated acreage has been into these areas, especially the northwestern Peace region. The bulk of the province's land consists of grey-wooded soils, of which only 5-10 per cent is cultivated, mainly because of the hazard of frost, low fertility and drainage limitations.

Sixty-one per cent of Alberta's lands support forests. Of this area, 78 per cent is administered by the provincial government as "forest lands". Inventories undertaken within the past 20 years have established that 203 000 km² (64 per cent) of the provincially-administered forest lands are productive or potentially productive. Current estimates of the timber volume on the productive land are 940 000 000 m³ of coniferous (softwood) and 590 000 000 m³ of deciduous (hardwood).

The streamflow in Alberta tends to be erratic, with melting snow providing the greatest water volume which is sometimes supplemented by heavy rains. Despite this, 90 per cent of the total Canadian prairie streamflow rises in Alberta. The mountain and foothills region provides the largest and most dependable streamflow which ranges from 100 to 1 300 mm annually. In dry years, as much as 90 per cent of the North and South Saskatchewan River streamflow originates in the mountain and foothills region which contains only 15 per cent of the basin area. In wet years this percentage may drop to under 70.

Alberta's rivers and lakes are large and numerous by the standards of many drier areas of the world. The Slave River (a combination of the Peace and Athabaska Rivers) is by far the largest river in Alberta, with nearly 125 000 hectare metres of annual flow. Lake area, not including the many thousands of temporary water bodies, occupies 16 800 square kilometres, or 2.5 per cent of the area of the province.

The scenic beauty of the province's lakes, forests, mountains and plains have made it an ideal location for a wide selection of activities for travel, tourism and recreation. Attractions such as the five national parks, 50 provincial parks, 575 campgrounds, six major ski areas and 20 secondary ski areas illustrate how Alberta's natural features have the potential to contribute to the diversification of its economy.

In the past 30 years, however, the economic importance of Alberta's lands has been overshadowed by the resources beneath them. Large areas of the province are underlain by thick beds of ancient sedimentary rock which contain deposits of oil, natural gas, bitumen and coal.

Eighty per cent of Canada's reserves of marketable natural gas (1.5 trillion cubic metres) is located in the province. In recent years, discoveries of natural gas in areas of Alberta (characterized by relatively shallow depths) have proven to be sulphur-free and to contain very little of natural gas liquids. This reduces the amount of processing required.

PROVEN RECOVERABLE RESERVES OF FOSSIL FUELS REMAINING IN ALBERTA: ACTUAL AND IN EQUIVALENT BRITISH THERMAL UNITS (1976)

Fuel	Unit of Measure	Average Equivalent Heating Value per Unit, in BTUs (Million)	Actual Units (Billion)	In BTU Average Heating Equivalents (Trillion)	Percentage of Total
Coal	tonnes	22.1	11.5	254 000	50.4
Oil Sands ¹ (synthetic Crude Oil)	m ³	36.5	4.2	154 000	30.6
Natural Gas	million m ³	37.0	1.5	55 000	11.1
Conventional Crude Oil	m ³	36.5	0.9	31 900	6.3
Natural Gas Liquids	m ³	28.3	0.3	8 100	1.6
TOTAL	---	---	---	503 600	100.0

Source: Alberta Business Development and Tourism, Industry and Resources 78-79 April 1, 1978.

¹ Synthetic crude oil reserves associated with each plant are calculated on the basis of the plant's rated output capacity over a 25-year period; the 25 years being indicative of a reasonable economic life for the facilities. These estimates in no way detract from published estimates of approximately 50 billion cubic metres which are estimated to be recoverable from the Athabasca-type oil sands by mining and in situ processes.

Coal-bearing formations underlie three distinct regions, the Plains, the Foothills and the Mountains. The majority of the 7.8 billion tonnes of the Plains region's reserves is sub-bituminous coal which is most suitable for thermal generation of electricity. Coal in the Foothills is generally highly volatile bituminous; recoverable reserves are estimated at 610 million tonnes, about one third of which would require underground extraction methods. Mountain coals are mainly low- to medium-volatile bituminous, suitable for coking and the production of steel. Thus established recoverable reserves of coal are estimated at three billion tonnes, of which approximately two thirds will require underground mining. Only the flat-lying parts are amenable to conventional technology. The Energy Resources Conservation Board has estimated that total recoverable reserves of coal over 11 billion tonnes, while in-place reserves more than double this figure.

Alberta's other mineral resources (mainly non-metallic) are varied and extensive. They serve as basic raw materials for a variety of industries, especially the construction and chemical industries. Construction minerals include the raw materials for cement, ceramics and building product manufacture, as well as minerals used primarily in an unaltered state for aggregates. The three essential mineral raw materials of Portland cement - limestone, clay and gypsum - are all found in Alberta, although gypsum is not presently produced. The best limestones are found in the easternmost ranges of the Rocky Mountains adjacent to railway lines, while clays are widely available in the province. A few deposits of clay suitable for other uses are also widespread.

Aggregates, the basic materials for construction, constitute the largest volume of industrial mineral production in Alberta. Sand and gravel, the major aggregates, are plentiful. A few deposits of good grade silica sand are also found in the province but these are undeveloped. Of stone marketed in specified sizes and shapes for building and ornamental purposes (dimension stone), only sandstone is currently produced in Alberta.

Minerals basic to the Alberta chemical industries (exclusive of the hydrocarbons) include salt, saltcake (sodium sulphate), sulphur and limestone. Vast deposits of salt exist in Alberta: they underlie almost half of the province in beds of up to 60 metres or more in thickness. Salt caverns are used in three localities for the underground storage of petroleum products. Limestone for lime-making is produced from quarries in the Crow's Nest Pass and the Bow Valley. Sulphur is produced as a co-product of natural gas processing, and in small quantities as a by-product from the oil sands. Recoverable reserves are estimated at about 200 million tonnes.

Large and as yet undeveloped deposits of dolomite are located near the limestone. In addition, two developed deposits of bentonite account for 11 000 tonnes in annual production, mainly for use in foundries and for drilling muds. Peat moss bogs are widespread throughout the northern two-thirds of Alberta where it is commercially harvested in four locations.

The small Canadian Shield area in northeastern Alberta provides a favourable geological setting for metallic minerals. Uranium and molybdenite showings have been found, for example, in the area adjacent to Lake Athabasca and uranium exploration is currently very active. Iron ore deposits, with 180 million tonnes of proven strippable ore - and much large tonnages of probable reserves - have been identified. The low grade and complex metallurgy of the ore has prevented its development to date. These are the only near-surface iron ore deposits in western Canada with reasonable economic potential.

Magnesium-rich brines exist in oil-producing rock formations. Some have economic potential for magnesium metal extraction by the DOW (electrolytic) process, especially as the concentrations are eight to ten times the magnesium content of sea water, the source of most of North America's magnesium.

The Athabasca oil sands also contain trace amounts of titanium-bearing minerals and zircon, insignificant in percentage content, but significant in total amount, considering the enormous tonnages of sand handled in the oil extraction process. Inasmuch as these trace minerals undergo a natural concentration during the oil sands processing, their economic recovery is a distinct possibility. It may also become feasible to recover vanadium and nickel from the fly-ash by-product of oil sands processing plants.

In addition to its fossil fuel and other mineral resources, Alberta has a significant reserve of non-depleting hydro energy. The developable hydroelectric reserve is estimated to be equivalent to 600 trillion BTU's of renewable energy every year and is contained mainly in the flowing water of the Athabasca, Peace and Slave Rivers. To date only about three per cent of the total reserve has been developed, with existing plants being on the Bow and North Saskatchewan river systems.

2.2.3 Market Environment

Like many of the world's resource-oriented economies, Alberta uses only a portion of its production. Its continued economic health and growth depend extensively on foreign and

distant domestic markets for its output. The provincial markets in themselves are capable of absorbing only a proportion of Alberta's goods and much of the economic activity is devoted to and dependent on the successful movement of these goods outside provincial and national boundaries.

To date, the function of turning many of Alberta's resources into secondary products is performed elsewhere in more industrially-developed economies such as Ontario, the U.S., Japan and Europe. Alberta lacks the population to absorb its agricultural production and thus large populations in areas such as China, Russia, Japan and central Canada become important consumers of the province's foodstuffs.

In 1978, 41 per cent of Alberta's coal sales, 79 per cent of its natural gas sales, and 80 per cent of its oil sales were delivered beyond its boundaries. The major markets for these resources were Japan for metallurgical coal, and Ontario and the U.S. for natural gas and oil. Other products and resources are similarly linked to distant markets such as wheat to China and Russia, alfalfa to Japan, lumber and pulp to the U.S., and livestock and feed to Ontario.

The economy of Alberta therefore, besides being resource-oriented, is export-oriented, highly dependent on and subject to world markets and market forces. Fortunately world markets for energy, which makes up a large portion of Alberta's resources, are strong with prices and demand rising. Supplies of these resources are finite and over the long term must eventually run out - an event which could necessitate significant economic adjustment in the province. Alberta is fortunate, however, in having a variety of other resources, a number of which are renewable and have long-run development potential. Alberta's economic and industrial diversification in the distant future is dependent on these resources and therefore on the markets for them.

A critical component of this dependency is access. Alberta is distant from present and future markets and has no direct access to tidewater. This necessitates a complicated transportation network which involves intermodal transfers, long delivery times, and predictably, delays. All these add up to higher production costs for Alberta goods once they reach the customer. More effective future competition in world markets for Alberta's resources will necessitate a more effective and economic transportation and handling system which will carry products quickly and cheaply. A lack of such an improved system will seriously erode the province's ability to secure a long-term future for its people.

2.2.4 Sub-Provincial Distributions

Because Alberta's rapid industrial growth is largely due to energy-related activities, the resultant prosperity is focused on the financial and administrative centres of the industry. As a consequence growth has tended to concentrate geographically into the Edmonton-Calgary corridor and a few resource-related centres, particularly in northern Alberta.

In northern Alberta, employment patterns differ substantially among the agricultural areas, resource towns and remote communities. The economy of the agricultural areas is reasonably stable, unemployment is somewhat seasonal and the unemployment rate is slightly above the provincial average. In resource towns, unemployment is low and labour turnover relatively high.

In contrast, employment in and around the remote communities tends to be confined to seasonal activities such as fishing, trapping, forestry and a small number of local service and primary resource extraction jobs. The duration of employment in any one job tends to be short.

Therefore, while significant changes have occurred in northern towns such as Fort McMurray because of large-scale but localized developments, about 25 per cent of the population of northern Alberta have been little more than spectators watching economic opportunities by-pass them. These people, largely of native ancestry, have traditionally lived and worked within reasonably well-defined social, cultural and economic boundaries. If job opportunities occur outside these boundaries residents resist taking advantage of them if they have to move away from their familiar environment. Even when such job openings become available near their homes, native residents face employment barriers such as unfamiliarity with the wage economy, inadequate education and lack of job-related skills. These factors combine to account for the 75 per cent unemployment rate among these people in northern Alberta, while jobs are filled by migrants from southern Canada and elsewhere in the world who have the required skills and experience.

The poor economic conditions in the remote communities can be easily seen: housing is generally of poor quality and crowded with few homes having running water or indoor toilet facilities and over half with no electricity. Community services, although gradually improving, still often fall short of provincial standards. For example, in some remote communities, internal roads are inadequate to cope with basic transportation and service requirements.

In southern Alberta, the rural economy is largely agrarian. Rural residents have not tended to derive great benefits from the massive energy developments, since the activity generated mainly accrues to Edmonton, Calgary and their connecting corridor.

Edmonton, by virtue of its role as a government, manufacturing and distribution centre, and Calgary, because of the concentration of financial and corporate head offices, continue to attract the bulk of the province's economic growth. Between 1971 and 1976 the population of the Edmonton-Calgary corridor grew by 15.1 per cent as compared to 8.5 per cent outside that region. Besides containing two-thirds of the population and 70 per cent of its employment, the corridor contains 70 per cent of the provincial manufacturing value-added, 73 per cent of retail trade, and 77 per cent of the building permit value.

Rural Alberta communities have exhibited more modest population growth. While these communities contain the human and natural resources necessary for a diversified economic base, the fulfilment of this potential is often constrained by several factors, not the least of which are extra transportation and communications costs, distant markets, a shortage of general business services and the relative scarcity of highly skilled labour. Enhancement of the investment climate for these communities will require special measures to offset these constraints and to encourage new industrial growth.

2.3 Economic Performance and Prospects

2.3.1 General Indicators

Alberta's economy will continue to outperform the remainder of Canada this year and into the early 1980s. The annual increase in real domestic product (RDP) in Alberta has exceeded 5 per cent since 1976 and averaged nearly 6.3 per cent since 1971. Initial projections called for only a 4.1 per cent RDP growth 1979: however, this estimate predated the severe cutback in Iranian oil exports and the resultant rise in Alberta's crude oil production. Real growth in Alberta's mining sector (oil and gas) should outstrip initial estimates for 1979 and buoy up growth of RDP this year to an estimated 5.9 per cent. By late 1980, a number of major construction projects related to energy development could again accelerate the RDP growth.

Alberta's population growth has followed the pattern of the other indicators: growth rates were very high in the mid 1970s with some moderation experienced after 1977 and expectations of faster growth again in the early to mid 1980s.

2.3.2 Labour Market

Alberta's labour force grew by 5.6 per cent - two percentage points higher than the Canadian average - to reach 960 000 in 1978; it is expected to grow by up to 4.5 per cent in 1979, and reach a high of over 1 000 000. Alberta's unemployment rate of 4.7 per cent was the lowest in Canada and 3.7 percentage points below the national average. However, unemployment during 1979 is expected to drop to almost 4.3 per cent of the work force.

A crucial element in the overall labour market is the wage outlook. Prosperity brought an average Alberta weekly wage of approximately \$276.00 in 1978, which was second only to British Columbia and may become the highest in Canada in 1979. The present aggressive stance of the province's labour unions and inflation may cause difficulties with the provincial government's determination to keep the lid on public sector salaries in the short to medium term.

Energy-related developments in the 1980s will increase the rate of employment growth; but this will also lead to shortages in some skilled occupations, and create upward pressure on selected wages and salaries. This shortage of skilled labour in Alberta, if combined with lower wages and high unemployment levels in central and Atlantic Canada, could result in increased rates of internal immigration.

2.3.3 Investment Climate

Alberta has enjoyed a favourable investment climate throughout the 1970s. Early in the decade, the annual growth rate in new capital expenditures rose dramatically, reaching 30 per cent in 1976. In 1977 new capital expenditures rose by 12.4 per cent. Although investments in major energy-related projects were lower in 1978, expansions in new housing construction and commercial developments kept the growth rate in new capital investment at 7.4 per cent, up from the projected increase of 3.4 per cent.

In the short term, the investment picture is not clear. If it becomes obvious by late 1979 that the way has been cleared to proceed with the Esso Resources heavy oil plant at Cold Lake, the Alaska Highway Natural Gas Pipeline and the Alsand's oil sands plant, then investment will start to be generated in 1980. However, although the Cold Lake plant appears to be more or less on schedule, the same cannot be said for the \$14 billion pipeline, which is already about two years behind schedule due to delays in the U.S.

Although the Alberta government has undertaken major capital expenditures this year, the delay in the pipeline translates itself into a damper on the entire construction industry, which is a major generator of Alberta's economy. The net result, likely to be experienced in 1979 is a reduction in the growth rate. Alberta's continued growth in the medium term is therefore inextricably tied to efforts to keep major energy-related developments on stream and on schedule, with higher annual increases again expected in the early 1980s when oil sands developments, the gas pipeline and other major projects generate new investments. As a result, Alberta will remain a focal point for Canadian growth into the 1980s.

2.4.4 Sectoral Review

Agriculture

In Alberta, agriculture currently accounts for about five percent of real domestic product and nine percent of total employment. Its RDP share of total goods-producing industries is about 12 per cent. In 1978, the province produced almost 20 per cent of Canada's total agricultural output. Between 1971 and 1978 the volume of agricultural output in Alberta increased by 20 per cent. There were substantial fluctuations during this period, ranging from an increase of 19 per cent in 1975 to a decrease of three per cent in 1977. In general, agricultural performance in the province was strong, particularly in the latter half of the period.

Coal

Alberta's production of bituminous and sub-bituminous coal more than doubled between 1970 and 1977 when it reached 14.2 million tonnes. Total coal production in 1978 should reach almost 15.6 million tonnes, and the output of both thermal coal and metallurgical coal is increasing. The demand for thermal coal is expected to remain strong in the longer term as a result of expanded shipments to Ontario Hydro and increasing electrical generating capacity in Alberta. The use of thermal coal to generate steam for in situ extraction of bitumen from the oil sands may also expand its use by the mid-1980s. The demand for metallurgical coal is expected to remain dependent on the health of the Japanese steel industry which is its major market.

Oil

Crude oil production peaked in 1973 at 83.1 million cubic meters, but by 1977, production had declined to 61.0 million cubic meters, with a continued decline to 60.5 million cubic meters in 1978. This decline was largely the result of reduced exports to the United States, as a contribution to future Canadian self-sufficiency.

The energy crisis caused by the withdrawal of about 0.7 million cubic meters per day of oil exports from Iran has reversed this situation. Through oil swaps with the United States and other trade arrangements, Alberta oil producers have now expanded production to the maximum technical limits. Oil production in Alberta for most of 1979 is therefore expected to average 0.04 to 0.05 million cubic meters per day more than in 1978; and it may continue at this increased level into the 1980s, since Iran is not expected to bring exports up to pre-revolution volumes in the short to medium term. However, since the producibility of Alberta's oil fields is declining, output levels of conventional oil are expected to decline over time. By the mid-1980s, synthetic oil production from the oil sands and heavy oils is expected to replace declining conventional production.

Alberta government revenue from the oil and gas industry was over \$3.39 billion during 1978, up 22 per cent from the \$2.77 billion received during 1977. The bulk of the 1978 revenue is from royalties, which accounted for \$2.7 billion, as compared to \$2.1 billion in 1977. Receipts from exploration and production licenses and leases topped \$608 million, and were also up from \$580 million in 1977 and \$160 million in 1976.

Royalty revenues can be expected to be even higher during 1979 as a result of oil and gas price increases as well as increased production levels. A \$1.00 a barrel increase in the domestic price for oil took place July 1, 1979, with another scheduled for January 1, 1980. However, the recent increases in the OPEC price per barrel (which brought their price to \$18.00-\$23.50), and the short-fall of oil caused by Iran, has created pressures for further upward price movements in Canada.

Gas

Natural gas production has experienced steady increases over the past five years, reaching 80 902 416 million cubic meters in 1977. Production levels in 1978 declined to 78 691 513 million cubic meters. Lack of access to markets rather than physical availability was the chief cause of this reversal.

Alberta's gas surplus indicates that output can increase substantially given greater market access. Rapid expansion of gas reserves in western Canada has continued with the major discoveries occurring in the deep basin potential of northwestern Alberta and northeastern British Columbia.

One of the best indicators of industry activity is the amount companies are willing to spend for new exploration acreage. Record levels in 1978 have been followed up by a \$62 million investment in the first Alberta crown lease and license sale of 1979, the largest amount ever realized in one sale. With these amounts of money invested in exploration, the industry will almost certainly be trying to generate cash flow through market expansion. If new markets are not found, exploration activity will inevitably fall off.

Plans for additional shipments to the United States are proposed, for the medium term, by prebuilding the southern portion of the Alaska Highway Pipeline. While this option is subject to federal approvals for natural gas export, as well as financing, pricing, contracts and regulatory procedures, the energy supply problems in the United States, and President Carter's commitment to the pipeline, may help resolve the problems. Two proposals for the construction of reversing natural gas pipelines from Montreal to Quebec and the Maritimes have been submitted to the National Energy Board. These lines would supply domestic natural gas as an alternative to expensive foreign crude oil for these regions.

Manufacturing

Although the provincial government has encouraged the development and diversification of the manufacturing sector, manufacturing industries have not increased their share of provincial value-added over the past several years. This has happened despite the rapid growth in Alberta's economy and despite a large increase in value of manufacturing shipments; i.e. an 18.5 per cent increase in 1977 and a 21 per cent increase in 1978. During the 1970s, Alberta manufacturing industries continued to account for slightly less than 10 per cent of total provincial output, as compared with 20 per cent nationally.

Over the past five years, the composition of Alberta's manufacturing industries has slowly begun to shift away from the traditional dominance of the food and beverage industry. In 1971, over 26 per cent of manufacturing value-added came from food and beverage processors, while in 1976, although still growing in absolute terms it had dropped to less than 24 per cent as a result of an expanding petrochemical industry.

Construction

Construction is the second-largest goods-producing sector in Alberta's economy, and has played a lead role in determining real growth during the 1970s. The recent upsurge in Alberta's economy is not determined by energy output, because prior to 1979 oil production had declined while gas production had remained stable. However construction activity on major energy-related projects has been a primary contributor to Alberta's rapid economic expansion.

The original estimates for 1978 and 1979 showed a slight cooling-off of Alberta's economy, primarily because of a lag in major construction projects. Syncrude construction had been completed and the construction of the major petrochemical plants was nearing completion. The expected slowdown in construction activity in 1978 did not materialize. Housing starts reached 50 000 units in 1978 as compared to 38.1 thousand in 1977. Preliminary results for 1979 indicate a slight cooling-off with housing starts in the first six months at 14 per cent below 1978 levels. The strong commercial and residential construction industry in 1978 contributed to the higher-than-expected growth in the provincial economy. Growth in 1979 will not likely reach 1978 levels but it will still be substantial when compared to other Canadian provinces. Another major growth spurt in construction - and as a result in the closely related provincial economy - is expected when the major energy projects such as the Alaska Highway pipeline, a heavy oil upgrading plant and a third oil sands plant, go forward in the early 1980s.

Service Industries

The rapid economic growth in Alberta has had a strong impact on the development of the province's service industries. Service industries employed approximately 67 per cent of the labour force and contribute 56 per cent to the RDP.

As Alberta's population has expanded and its economy has become more sophisticated, the service industries have increased their share of provincial employment, although in comparison with Ontario, for example, Alberta's service industries do not comprise as large a proportion of the total provincial economy.

Although the major driving force for Alberta's economic growth has been the construction of major industrial projects, the completion of such projects will result in a noticeable downturn in activity. Once the construction of a project is completed, the subsequent operation of that project does not usually replace the economic activity generated during the construction phase. Subsequent economic performance therefore depends on the direct and indirect benefit caused by the investment, especially in relation to the generation of sustained levels of employment. Much of this employment will be generated in service industries. The service industries can be expected to increase their share in the economy over time and maintain their prominence in the long term.

Contrary to popular opinion, the public administration component of the service industries is neither the largest nor the fastest growing. Wholesale and retail trade and finance, insurance and real estate have been the fastest-growing since 1971. The advent of the Alberta Heritage Savings Trust Fund and the resulting expansion of the short-term money market in Alberta, along with the massive financial requirements of Syncrude and other energy-related developments, have caused a significant influx of financial services into the province. This trend should continue at least through the early 1980s.

2.4 Federal and Provincial Instruments

The support of "free enterprise" which is a strong precept of the political philosophy of the Provincial Government of Alberta, is coupled with the realization that geographic and industrial diversification are needed within the province. Thus certain policies which will help achieve the government's objectives with the least possible interference in the market system have been adopted.

Alberta has a stated and visible policy of decentralization into rural areas which has been illustrated by its relocation of government services to rural centres. In addition, the Alberta Opportunity Company contributes to the decentralization policy by assisting small businesses to locate in rural communities. To promote the industrial diversification of the province, the provincial government offers a corporate tax rate of 11 per cent, and there are indications that a reduction to five percent for small businesses may be forthcoming. This rate would be the lowest in Canada.

The provincial government maintains a posture of restraint in public spending, while budgetary surpluses from resource revenues continue to flow into the provincial treasury. Some of these funds have been channelled into investments in Pacific Western Airlines, Steel Alberta, the Alberta Energy Company, and others as well as the Alberta Heritage Savings Trust Fund from which re-investment may take place. In general, the government's investment decisions have been based on the criteria of economic significance to the province as well as on business viability and return on investment rather than on a desire to gain public control.

The provincial government has stated that trust fund monies will not be used to lure business to the province; the Fund is to be used as a base for diversification. However, there can be no doubt that the presence of this vast investment portfolio does encourage the development of a "financial industry" in Alberta which in turn continues to attract companies to the province.

The assets of the Alberta Heritage Savings Trust Fund were \$3.9 billion in September 1978 and reached \$4.7 billion by March 31, 1979, growing at the rate of 30 per cent of non-renewable resource royalties (excluding the investment income of the fund). At present, over 50 per cent of the fund is committed to marketable securities, although a minimum of 65 per cent of the total can be considered to be discretionary funds available to the province for investment to stimulate industrial projects.

In addition, the Provincial Treasurer has announced that trust fund monies may be forthcoming for resource development, including projects outside the petroleum field. While no specific commitments have been made in this regard, speculation exists concerning provincial investment in the Alsands oil sands plant near Fort McKay, coal and timber developments and the Alaska Highway natural gas pipeline from Alaska.

Other significant trust fund investments or proposals to September 30, 1978, include:

- (a) loans to other provinces, namely Newfoundland, New Brunswick, Manitoba and Nova Scotia;
- (b) a pledge of up to \$100 million to build a new major grain terminal at Prince Rupert, B.C.;
- (c) research funding for cancer and heart disease;
- (d) the Southern Alberta Children's Hospital;
- (e) irrigation and land reclamation;
- (f) support for the forest sector, including a reforestation nursery and forest maintenance;

- (g) the development of grazing reserves;
- (h) recreation and land development;
- (i) the Alberta Oil Sands Technology and Research Authority; and
- (j) funding for research to improve agriculture technology and productivity.

The financial strength provided by this fund, together with the general economic well-being of the province, its energy resources and the mandate enjoyed by the governing party, tend to provide Alberta with enhanced leverage in its dealings with other governments. Aside from the question of ownership and control of resources, Alberta is vitally concerned with access to world markets for its products. The amelioration of provincial concerns, such as freight rates, interprovincial and international transportation and the tariff structure, require input from the federal government under whose jurisdiction they fall.

Recently, Alberta underlined the prominence of these and other concerns of the provincial economy when it established a new Department of Economic Development after the provincial election. Headed by the Deputy Premier, this department (along with two supportive ministries, Tourism and Small Business, and International Trade) plans a more comprehensive approach to economic development. The main areas of effort will be diversification, transportation and international trade.

National policies - which must be applicable across the country - often lack the flexibility necessary to respond to provincial differences. The development of the General Development Agreement (GDA) process has been a means by which the federal government has addressed this problem and this is recognized by Alberta. The process has become the most flexible instrument available to coordinate the province's emphasis on diversification, decentralization and balanced growth with the federal objective of improving the number, quality and accessibility of long-term employment opportunities in Alberta.

The Canada-Alberta GDA signed on March 6, 1974 had the following objectives:

- (a) to improve opportunities for productive employment and access to those opportunities in areas or economic sectors of Alberta which require special measures to realize development potential in relation to other areas of sector in Alberta;
- (b) to promote balanced development among areas of Alberta and to encourage the equitable distribution of the benefits of such development; and
- (c) to reinforce provincial priorities on initiatives for socio-economic development.

Strategies to be employed for meeting these objectives include:

- (a) the identification of development opportunities and assistance in their realization through coordinated application of relevant federal and provincial policies and programs, including the provision of specialized measures required for such realization; and
- (b) analysis and review of the economic and social circumstances of Alberta and Alberta's relationship to the regional and national economy, as these may be relevant to achieving the objectives.

Under the mechanism of the GDA, the federal government through DREE, in cooperation with the Province of Alberta, encourages economic and socioeconomic development measures through Subsidiary Agreements to the GDA, of which the following are examples:

- (a) Nutritive Processing, with the objective of strengthening the economic viability of small rural communities, and further processing, in Alberta, of nutritive products which may achieve a competitive position on national or export markets;
- (b) Alberta North, with the objective of improving incomes and employment opportunities, living standards and community facilities in northern Alberta;

- (c) Transportation (expired on March 31, 1979), whose objective was to assist with improvements to the transportation system in support of industrial and socioeconomic development in northern Alberta. This was a commitment arising from the Western Economic Opportunities Conference (WEOC) of 1973.

As conditions change, or new opportunities are identified within the province, these sub-agreements can be changed or new ones developed so that the GDA process reflects current conditions and requirements. Such initiatives would bring into focus the significant changes that have taken place in Alberta's relative economic and fiscal circumstances and prospects since the introduction of the GDA.

During the 1970s Alberta, like Saskatchewan and British Columbia, has shown growing economic strength in relation to other regions of Canada. Indices of fiscal capacity (which measure per capita revenue generation potential if national average tax rates are applied) increased steadily in Alberta and Saskatchewan, while showing both fluctuation and strength in British Columbia. Because provincial revenues are directed into the Alberta Heritage Savings Trust Fund as a hedge against an uncertain future, a simple measure of fiscal capacity does not serve adequately for interprovincial comparisons and for all the decisions, including federal program decisions, which may result from these comparisons. It is also important to understand the fact that Alberta's relatively recent prosperity is based on the exhaustion of non-renewable resources, a situation of which Albertans are acutely conscious.

Given therefore, the political and economic environment of Alberta, the GDA process can serve as the basis for the federal and provincial governments to recognize changing economic circumstances, development priorities and needs. Discussion may well focus on the ongoing effort which will be required to continue improvement of the circumstances of northern, rural and native residents.

3. DEVELOPMENT CONSTRAINTS AND ISSUES

3.1 Crow's Nest Pass Rates

Alberta farmers and food processors are increasingly aware of the impact of the Crow's Nest freight rates. The present situation in which the revenues from the statutory Crow's Nest rates do not cover the railways' cost of shipping grain has inhibited re-investment in rolling stock and resulted in poor shipping performance.

Grain farmers are not happy because the rail transportation system is not organized or maintained at a level which allows grain producers optimum volume marketings. There are an increasing number of claims of lost export sales as a result of transportation bottlenecks. Cattle producers are unhappy because the low statutory freight rates lead to higher feed costs for them as compared to U.S. cattlemen. Since feed prices are high, many farmers produce grain instead of beef and this leaves meat processing plants short of supply.

Despite the benefits enjoyed by grain producers under the Crow's Nest rates, many are now prepared to accept a change provided they receive adequate compensation. Many Alberta cattlemen argue that the benefits from increased cattle production and agricultural processing under compensatory rates would more than offset any losses incurred by grain producers, and thereby provide a net overall gain to the Alberta economy.

Support for removal of the Crow's Nest rates among Alberta farmers is increasing. The Alberta government has recently advocated compensatory freight rates under which grain producers would be subsidized for any extra rail transportation costs over and above present Crow's Nest rate levels. Pressure to resolve this issue will likely increase because of the high grain prices and continuing transportation bottlenecks.

3.2 Grain Handling

The Alberta government supports many of the recommendations put forward by the Hall Commission, in particular the upgrading of the grain-handling facilities at the Port of Prince Rupert and the establishment of the Prairie Rail Authority. Alberta would like to see positive steps taken to implement these recommendations. To underline this, it has offered a \$100 million loan for the upgrading of facilities at the Port of Prince Rupert, has bid successfully for the purchase of the three Canadian Government elevators in Alberta and has shown interest in purchasing or renting additional rolling stock.

While a majority of Alberta farmers still give general support to the Canadian Wheat Board, there is a growing minority who have expressed dissatisfaction with Board policies on barley

marketing, saying that the board has focused on selling wheat at the expense of feed barley, and that malting barley growers are not receiving fair returns for their product in relation to other producers.

3.3 Domestic Market

A long-standing constraint to the growth and diversification of Alberta's manufacturing sector has been the small population base in western Canada. The population of the prairie provinces currently totals less than 45 per cent of Ontario's population; indeed, the west reaches only 74 per cent of that province's total - even if British Columbia is included. Such a limited and dispersed local market inhibits the manufacture of most consumer durables and many other consumer products. Manufacturing activity in the prairies therefore is concentrated in food and beverage products or in the production of industrial products for the resource and agricultural industries. This constraint will likely continue to handicap Alberta's attempt to diversify its economy through the manufacturing sector.

On occasion, the operation of national agricultural marketing boards has been viewed as a constraint to the orderly growth of the commodities involved in Alberta. Currently there are two: turkeys and eggs. Under marketing boards, the supply management of a commodity requires the setting of a national quota with a periodic revision to reflect market conditions. A provincial quota is then allocated to each province, where a provincial marketing board makes appropriate allocations to local producers.

Although it is not clear that population shares are an appropriate criterion, Alberta has complained that while it has been experiencing faster population growth than the rest of Canada, it has not received a corresponding increase in its quota share. After a temporary withdrawal from the Canadian Turkey Marketing Agency (CTMA) by Alberta producers in January 1979, it appears that the CTMA is now willing to grant Alberta a larger share of the national turkey quota.

3.4 Distance to Markets

Distance to major markets (domestic, overseas or American) is a constraint to Alberta's economy, especially the in manufacturing sector. The small provincial market for most manufactured goods, coupled with lower freight costs for outgoing materials, has generally meant that Alberta has sent its raw materials elsewhere to be processed. It has also meant that manufacturing industries in which transportation costs would be a significant proportion of the total cost of their goods have been unlikely to locate in Alberta.

3.5 Trade Arrangements

Traditionally Alberta's exports have consisted of largely unprocessed natural resources. In line with provincial development objectives to maximize the value-added content of its resources, Alberta is attempting to influence trade arrangements in favor of processed or semi-processed resources so as to stimulate more processing activity in the province. Its emphasis on trade liberalization in tariff negotiations was an attempt to gain tariff concessions for processed resources from the U.S. and Pacific Rim countries.

3.6 Skilled Labour

Alberta's construction boom of 1974-1978 resulted in shortages in many skilled occupations, which were felt (although to a lesser degree) throughout western Canada. Many industries lost workers to the higher paying major projects, and many smaller commercial and industrial projects were postponed or shelved because of the shortages and rising labour costs. This is especially true in smaller communities. The major projects therefore to some degree thwart the objective of balanced growth in the province.

During this boom period, the relative attractiveness of Alberta as a source of good employment opportunities precipitated a record level of migration to the province. However, the level of skill required and that possessed by migrants was not always balanced. In addition, once the peak of the boom passed, the unemployed migrants were joined by more skilled workers whose services were no longer required. This resulted in an increased unemployment rate.

A repeat of these difficulties appears imminent for the 1980s as the Alaska Highway Pipeline, the Esso Resources Cold Lake project, the Alsands project and various other major projects demand skilled workers in excess of those available. Training programs will need to be carefully planned to meet the projected needs of Alberta developments, both large and small. A number of development opportunities may be missed if the major projects again force postponements and cancellations of smaller scale investments in manufacturing and commercial enterprises.

3.7 Alberta Heritage Savings Trust Fund

The size and rapid growth of the Heritage Savings Trust Fund together with the discretionary fiscal power which it places in the hands of one provincial government, has captured the

attention of Canadians. By March 31, 1979 total assets had reached \$4.7 billion and the fund was growing at a rate of more than one billion dollars per year. Alberta views the fund as being for the primary benefit of Albertans, but has also used it for loans to other provinces and to establish medical, energy and agricultural research facilities which will benefit all Canadians. In addition, the fund has been used to encourage specific projects which the province feels are important to western Canada, such as, the Prince Rupert terminal.

3.8 Resource Ownership and Control

Alberta and the federal government are undertaking ongoing discussions on the application of resource taxation and royalties to major energy-related projects. The federal government has suggested that Alberta reduce its royalties as a means of ensuring that the projects proceed. Alberta has countered by saying that its royalties on major projects are flexible and will be tailored to individual situations. The two firms presently proposing major developments have expressed concern that another federal-provincial resource taxation dispute will delay commencement of these projects.

Alberta is concerned about the new federal bill giving Canada the power to regulate energy resources during a state of emergency: it feels the bill should spell out the conditions under which such an emergency may be declared more clearly.

3.9 Water Development and Management

The availability of an sure supply of water to meet growing demands for municipal, agricultural, industrial, recreational and power generation needs is of major concern to Alberta, as well as the other prairie provinces. Over the years, the Prairie Farm Rehabilitation Administration has contributed significantly to the planning, designing and construction of major water storage and diversion works in Alberta. Since 1965, the province has continued to develop water policy and engineering expertise to assure the effective utilization of its valuable water resource.

However, the near-drought in early 1977 sharply focused on the need for closer federal/provincial co-ordination and cooperation in developing a comprehensive long-term water management strategy for the prairie provinces. Development of such strategy is predicted on the fact that approximately 90 per cent of the Canadian Prairie streamflow originates on the eastern slopes of the Rocky Mountains in Alberta. Increased water-storage capacity, interbasin transfers of water and regional water pipelines will thus be critical components for sustained long-term economic growth on the prairies.

4. ECONOMIC PROSPECTS AND OPPORTUNITIES

Over the short term, the stimulus for the Alberta economy will be based on its energy sector and the related construction activity. Agriculture, and to a lesser extent forestry and tourism, are expected to play a more strategic role from the standpoint of diversification and viability of the provincial economy over the longer term.

4.1 Energy Prospects and Opportunities

4.1.1 Oil

The demand for crude oil in Canada is expected to grow steadily through 1985 and beyond. Given the current declining producibility from Alberta's conventional oil fields, an ever increasing amount of the required production will have to come from oil sands and heavy oil extraction plants if Canada is to attain its goal of energy self-sufficiency. In addition, new techniques for enhanced recovery and new discoveries of oil in an arctic and offshore east coast may help Canada achieve this goal.

4.1.2 Heavy Oil

Vast quantities of heavy oils underlie both Saskatchewan and Alberta from north of Cold Lake south to the Suffield Reserve near Medicine Hat. As their name implies, these oils are heavy because of a high carbon content which makes them unsuitable for many refineries and costly to transport. They can be converted to acceptable medium crude by either hydro-cracking (adding hydrogen) or removing carbon. These operations necessitate processing at a relatively high capital cost, which is associated with higher-than-normal production costs incurred in extracting the crude from the field either through conventional or non-conventional means.

Esso Resources Limited has currently received approval from the Alberta Energy Resources Conservation Board to build an in situ heavy oil extraction and upgrading facility near Cold Lake, Alberta. The total project cost is estimated at \$6 to 7 billion. The capital cost of the plant is estimated at \$3.5 to 4 billion with the remaining capital cost allocated to well drilling. Approximately 1 400 wells will be drilled initially with 320 added per year for the life of the plant. The company anticipates that construction will start in 1981, with plant production beginning in 1986-87.

The plant will be designed to produce 23 million litres per day of heavy oil which will be upgraded to 22 million litres of light crude. The extraction process involves steam injection through numerous wells. Initially three options for boiler fuel

were being considered, coal, upgraded light crude and natural gas. The coal would come from a mine which would be developed by Esso near Whitecourt, while the light crude would come from plant production. Natural gas has been chosen as the best option in view of surpluses and its greater environmental acceptability.

Esso Resources would employ nearly 10 000 construction workers during the peak year (1983) and over the construction period 1981 to 1986 generate a total of nearly 32 000 person-years of employment. The operating phase would initially generate 2 000 permanent jobs, then drop off to 1 500 as the number of new wells drilled declines to 320 per year. The coal mine would have a permanent employment of 130 people.

The overall impact (direct plus indirect) of the plant construction (1981 to 1985) would mean between 113,000 and 165 000 person-years of employment generated in Canada during the construction phase. Roughly one-third of this total would occur outside Alberta, mostly in Ontario. The operating phase would generate between 14 000 and 22 000 total person-years of employment nationally.

It is estimated the impact of construction would also result in the generation of \$2 billion in personal income and \$3.6 billion in value-added in Canada (1976 dollars). Again, roughly 30 per cent of this impact would occur outside Alberta, mostly in Ontario. The annual financial impact of the plant operation would result in between \$2.5 and \$3.0 million in personal income and between \$700 and \$800 million in value-added in Canada (1976 dollars). Roughly 15 to 20 per cent of this would occur outside Alberta, mostly in Ontario.

Approximately 75 per cent of the total project cost is expected to be raised in Canada. The remaining 25 per cent will come from foreign sources and add to the balance of payments deficit. However, if as little as 20 per cent of the plant's production is exported over its first seven years of operation, the entire \$3.5 to 4 billion construction cost would be offset by the generation of export dollars. The positive impact of the synthetic oil, either as an import replacement or as a direct export, would add as much as \$30 billion to the credit side of the balance of payments account over the first ten years of operation assuming the domestic pricing policy is a 2.5¢ per litre per year increase starting in 1980.

In addition, Pacific Petroleum is heading a ten-company consortium investigating a heavy oil upgrading plant near Hardisty, Alberta. The consortium has not chosen which technology they would employ but does anticipate a plant capable of producing 16 million litres per day of medium crude oil. The plant is expected to cost between \$750 million and \$1 billion.

The commercial viability of these and future extraction and upgrading plants depends to a significant extent on royalty and tax arrangements with both the federal and provincial governments, and on the pricing policies adopted for upgraded crude given world prices. Satisfactory settlement of these points is considered essential to enable the plants to proceed.

Heavy oil producers are currently investing heavily in research into new technologies which will enhance recovery rates above the current 10 per cent. A number of pilot plants are in operation in Alberta testing in situ recovery methods. Many of these projects are receiving financial support through the Alberta Oil Sands Technology and Research Authority (AOSTRA). Enhanced recovery would result in the need for fewer supply wells per upgrading plant and a significant cost saving.

4.1.3 Oil Sands

The oil sands possibly represent Alberta's most important energy resource potential. In total, the oil sands underlie an area of 60 000 square kilometres from which approximately 4.3 million cubic metres billion barrels of synthetic crude are estimated to be recoverable using conventional strip mining techniques. In situ mining methods which are currently under development could increase the recoverable reserves to as much as 27 million cubic metres when they become economically and technically feasible. While the ultimate development of this resource depends largely on economics because of the massive capital costs, the steadily rising demand and crude oil prices are gradually improving investment prospects for the future.

At present two oil sands extraction and processing plants, using conventional strip mining techniques, have been built near Fort McMurray. The first of these, the Great Canadian Oil Sands Corporation (GCOS), completed in 1967 at a cost of \$300 million, has a capacity of 7 million litres of synthetic crude a day. The second plant, Syncrude Canada Limited, was completed in 1978; a much larger plant, it has a capacity of 25 million litres per day and cost roughly \$2.4 billion.

The future development of this resource will depend on Canada's degree of energy self-sufficiency, the growth of demand, and the rate of return on investment - which is dictated to a large extent by pricing and taxation policies and royalty rates. Another factor involved in the rate of development of the oil sands is the availability of construction factors, particularly labour. Concern has been expressed by some of Alberta's business and labour leaders that overheating of the economy might occur with simultaneous construction of the Alsands and Cold Lake projects. Alberta's resources would certainly not be able to permit several projects to be built concurrently. The rate of development will have to reflect, to some extent, the capacity of Alberta to erect recovery plants.

Both Syncrude and the Great Canadian Oil sands have declared their intention to expand production. GCOS is planning to increase its capacity to 9 million litres per day at a cost of \$185 million. The project, which will employ 650 during the construction phase and create 175 permanent jobs, is expected to be completed in 1981. The Syncrude expansion, while not as firm at this time, may involve \$1 billion, beginning in 1982.

A consortium of nine companies, the Alsands Project Group, headed by Shell Canada Resources, has recently received permission from the Alberta Energy Resources Conservation board (ERCB) to build an oil sands extraction (mining) and upgrading plant roughly 50 miles northeast of Fort McMurray. The capital costs are estimated at \$4.9 billion in spent dollars to start up the plant, with an additional \$200 million requirement to reach full production of 22 million litres per day of light crude. The ultimate capital cost of the project is expected to top \$5.9 billion. The facilities would include an open-pit mine with four drag lines and four bucketwheel reclaimers, an extraction and upgrading plant, a utility to produce steam and electricity, a new bridge over the Athabasca River, an air strip and a town site for 12 000 people.

Detailed engineering for the plant will begin in 1980 with plant start-up expected in 1986. The construction labour force is projected to reach 8 800 at its peak in 1983. Construction at the town site would add an additional 1 500 workers over the peak years 1982 to 1984. Permanent employment at the plant would average 2 800 after 1985.

Canadian participation in the plant and townsite development is projected at 75 per cent. The overall impact of construction is expected to result in over 100 000 person-years of employment generated as well as between \$3 and \$4 billion in value-added (1976 dollars). The impact of the operating phase will likely result in a minimum of 6 500 permanent jobs and generate around \$260 million in personal income and \$700 million in value added (1976 dollars) each year. Roughly one-quarter of this impact would occur outside Alberta, mostly in Ontario.

The major concern of the consortium is the commercial terms under which Alsands will operate, in particular, the effects of the extreme front-end loading of investment spending. Specifically, the consortium desires a royalty and tax structure which would ease the early burdens on Alsands. Such terms would involve a coordinated effort from the federal and provincial governments. This project was shelved following approval in 1974 because Shell Canada felt both governments were not providing adequate incentives through tax and royalty breaks.

As with heavy oil production, many millions of dollars are being spent on research into in situ oil sands extraction technology. A number of pilot plants are in operation throughout the oil sands areas of Athabasca, Wabasca and Peace River. A successful, economically feasible technology would not only open up the deeper oil sands deposits, but could reduce the massive capital and operating costs associated with conventional strip mining techniques.

4.1.4 Natural Gas

As a result of high prices and a favourable taxation climate, natural gas exploration activity has continued at a very high level. The province now has a recognized gas surplus which will allow increased production given new or expanded markets. The markets identified are in eastern Canada and the United States. Canadian markets currently being examined are in Ontario, Quebec, and the Maritimes.

The approach inherent in converting these areas to natural gas is to gain security of supply and to provide some protection against escalating world prices. From the standpoint of the industry, this new market would, in time, generate a greater cash flow to allow producers in Alberta to undertake ongoing exploration. In a Canadian context, this energy import replacement would have a significant positive impact on balance of payments.

Two competing projects have filed applications with the National Energy Board to service this market: Trans-Canada Pipeline Limited for a pipeline from Montreal to Quebec City, and Q&M Pipeline Limited for a pipeline from Montreal to Halifax. After these applications were filed, Trans-Canada and Q&M announced their intention of joining forces in future applications.

4.1.5 Coal

As an energy source, Alberta coal can be characterized as either metallurgical or thermal, each with varying prospects and potential. Metallurgical coal is primarily used in the production of steel: the Japanese steel industry is the major market for Alberta production. While the province contains abundant reserves, they are usually found in difficult terrain along the eastern slopes of the Rocky Mountains. Exploration and development costs of mines are high and access often difficult. The terrain usually encountered, plus transportation to tidewater, add to the total cost per ton produced.

The future of the industry depends largely on Japanese import decisions and the health of their steel industry. Whether their industry will recover to the output levels of the early 1970s is still in question. This recovery is not expected until 1980 at the earliest.

Coal mining is closely associated with single-industry communities; in Alberta's case, Crow's Nest Pass and Grande Cache. Crow's Nest Pass has had a long history of economic instability based on coal, while Grande Cache has had a relatively shorter history of instability. Mines in both towns depend on Japanese purchases for their continued operation. McIntyre Mines in Grande Cache recently signed orders for shipment of 1.6 million tons of metallurgical coal to Japan over a two-year period.

While the short-term future of Grande Cache is assured, the position of the industry in the Crow's Nest Pass is less certain. Future major developments by Consolidated Coal and Gregg River Resources have been shelved pending a more favourable outlook; this has cast a shadow over medium-term prospects. These prospects have shown some signs of improvement for the Alberta industry as McIntyre has been successful in diversifying its sales of metallurgical coal to other countries, and there appears to be new interest in the Gregg River project.

Much brighter prospects are evident for the thermal coal part of the industry, especially for power generation. Alberta's demand for electric power is now increasing at the rate of about 10 per cent per year. Currently, about 70 per cent of the electricity used in the province is generated in coal-burning power plants and the province wants all new plants to use coal rather than natural gas. To meet the growing demand for electricity in the province will require the installation of one 375-megawatt generating unit on-stream each year during the early 1980s. A typical plant with two such units will use 3 to 3.5 million tons of coal per year; the coal will be strip-mined locally. This alone will boost the demand for Alberta coal by about 10 million tons by 1985. (Alberta's total production of coal in 1978 was about 16 million tons). Shipments to Ontario Hydro via rail to Thunder Bay and hence by the Great Lakes to power plants in eastern Canada is also raising the demand for Alberta thermal coal. This allows Ontario to partially substitute Canadian coal for U.S. imports and has a positive effect on Canada's balance of payments. There is also potential for the use of thermal coal to generate steam for in situ bitumen extraction by the mid-1980s.

The Electric Utility Planning Council (EUPC) expects the electrical energy requirements for the province to rise an average of 6.8 per cent per year over the 30-year period of 1976-2006. This very rapid rate of expansion would result in electricity use in the year 2006 of 117.3 billion kilowatt hours, as compared with 16.4 billion in 1976 and would require generating capacity of about 22 000 megawatts versus the present 4 258 megawatts. These estimates assume very high electrical energy usage in oil sands plants, petrochemical developments and transportation. As nuclear generation requires about a 15-year planning horizon and hydroelectricity has comparatively fewer possibilities in Alberta, the impact of thermal power plants on the coal industry of the province is likely to be very significant. Estimates show that over a billion tonnes of coal may be needed by Alberta power plants in the next 25 years.

Construction is already well underway on units at Sundance and Battle River, which will commence production in the 1980-1982 period. Calgary Power is now starting construction on a \$600 million two-unit thermal power plant at Keephills, 60 kilometres west of Edmonton. This development, including the plant, cooling pond and the Highvale coal mine expansion will require an average work force of 350 from now to 1984, with a peak labour force of 700 in about 1982. An operating staff of 300 including mine workers will be needed thereafter.

Meanwhile, Alberta Power has received ERCB approval to build and operate a \$750 million two-unit plant at Sheerness, 160 kilometres northeast of Calgary. Construction will begin in 1981, with its first 375 MW unit scheduled to start production in 1985 and the second in 1986. The peak construction labour force is expected to be 600 in 1984, with an additional 60 to 140 workers to develop the associated coal mines (operated by Manalta Coal and Forestburg Collieries) during 1983-1988. In the operational phase there will be 80 jobs in the plant and 130 in the mining operation.

While these plants will together assure Alberta of sufficient electricity-generating capacity at least through 1986, some adverse effects of the developments will be felt. About 40 farms, the small community of Keephills and ten ranches may be displaced by coal mine expansions and cooling ponds. However, the coal mining and utility companies are investing in research into new reclamation techniques for strip-mined lands.

4.2 Opportunities Related to Energy

4.2.1 Alaska Highway Pipeline

The construction of the Alaska Highway pipeline by the Foothills Pipeline consortia is closely linked to the rise in volume of natural gas deliveries to the United States. Running from Alaska through the Yukon, British Columbia, Alberta and Saskatchewan, this pipeline would carry natural gas from Alaska south to the U.S. (see Chart 4.1). Originally scheduled to begin construction in 1979 and operation in January, 1983, the project has encountered problems in the United States, which have resulted in a delay of 22 months. Capital costs originally estimated at \$10 billion, have accordingly risen to \$14 billion.

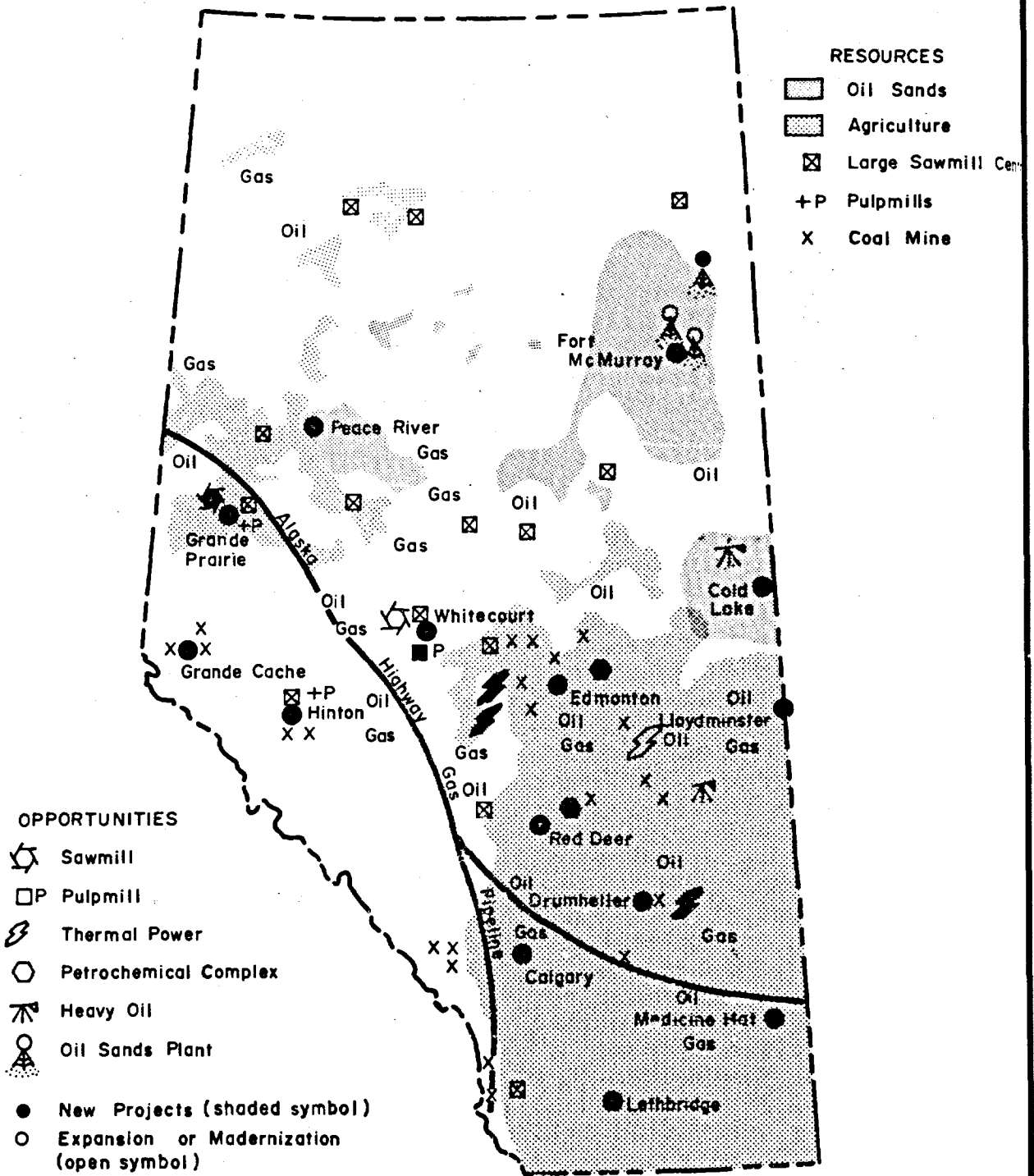
Foothills has proposed that the southern portion of this line be prebuilt and used to export surplus Canadian natural gas into the U.S. while the northern portion is under construction. Several factors support this option:

- because of the pipeline's rising cost, its financial viability seems tied more closely to export sales of surplus Canadian natural gas;
- according to National Energy Board estimates, Canada's exportable reserves of natural gas amount to 56 billion cubic meters, and could be exported over a 4 to 5 year period;
- these exports would make a significant contribution to Canada's balance of payments; and
- timing of natural gas delivery to the U.S. would be moved forward and help to alleviate their energy problems, precipitated by the Iranian production cutbacks.

Foothills has, however, proposed the export of between 112 and 140 billion cubic meters through the prebuilt section - more than double the NEB reserve estimate - over a 12-year period in order to financially justify the investment. The NEB export schedule of four to five years would mean that a portion of the prebuilt costs would have to be financed by later Alaska natural gas deliveries.

The Canadian portion of the pipeline is expected to cost in excess of \$6 billion, over 90 per cent of which will be Canadian. The sheer size of the project suggests broad national direct and indirect impacts.

CHART 4.1
ALBERTA



MAJOR RESOURCE AND OPPORTUNITY AREAS

Approximately \$1.1 billion of the Canadian investment will come from Alberta. From a secondary industry standpoint, the major Canadian purchases will be for pipe, turbine compressor assemblies and prefabricated buildings. Total person-years generated in the manufacturing sector will be in excess of 30 000. While the majority of these jobs will occur in central Canada, approximately 4 500 are proposed for Alberta. Total employment generated by the pipeline across Canada is estimated at 70 400 person-years over a five- to seven-year period.

4.2.2. Petrochemicals

The petrochemical industry in Alberta, which is still in its infancy, has been showing strong growth since the early 1970s. Two main factors have contributed to this growth: the energy crisis of 1973 and the Alberta government's expressed intention to develop the industry as a means of increasing value-added activity in the province. The prospect of assured natural gas feedstock in a receptive investment climate stimulated a surge in petrochemical construction activity.

The assured feedstock was considered sufficient to offset the extra costs associated with the transportation of the petrochemicals to eastern markets. Because the plants must be world-scale in order to enjoy the associated economies, eastern Canadian and U.S. markets are considered important to the viability of the complex being built. While access to these markets is largely a function of distances, transportation costs and tariffs, in the case of the U.S., eastern Canada has been in effect eliminated as a market because of the decision to build Petrosar's ethylene plant in Sarnia. This plant is the major constraint to the growth of Alberta's petrochemical industry.

The Alberta industry must therefore look to world markets, and in so doing must face world competition. The province's land-locked position necessitates rail or pipeline transportation which is more costly than water transportation: labour rates are generally higher, and construction costs are greater. The province's only advantages in this competitive situation, therefore, become the assured supply of its feedstock and the determination of the Alberta government to support the establishment of the industry.

Alberta government leaders are reasonably satisfied with negotiating gains made in the recent Multilateral Trade Negotiations round in Geneva in agriculture and forestry products, but are concerned that petrochemical products did not receive approval for easier access to the United States.

A petrochemical industry is a series of linked and interdependent firms producing complementary as well as competitive products. The key building block is ethylene, the first derivative upon which the rest of the industry depends. In Alberta this key component will be supplied by the \$360 million Alberta Gas Ethylene plant at Joffre. This world-scale plant will produce 1.2 billion pounds of ethylene annually. Seven hundred million pounds of the ethylene will be upgraded by plants near Fort Saskatchewan. The remainder will be sent to eastern and U.S. markets. In addition to providing export revenue, the plant will help to reduce imports of ethylene into Canada which run about \$630 million annually.

The production labour force will total 130. The construction work force peaked at 1 000 and 80 per cent of the goods and services were purchased from Alberta and Canadian firms. Following the opening this September of the Joffre plant this company announced its intention to file an application with the Alberta Energy Resources Conservation Board to double the plant capacity.

The Joffre plant is but one component in an ethylene-based petrochemical complex which will eventually cost \$1.5 billion. One other major component is a \$400 million expansion of DOW Chemicals operations at Fort Saskatchewan. The four integrated world-scale plants under construction will upgrade the ethylene into vinyl chloride monomer, chloralkali, ethylene dichloride, vinyl acetate monomer, and ethylene glycols.

Upon completion, these plants will require 350 employees with an annual payroll of \$16 million. About 88 per cent of the construction work is going to Alberta firms, with the remainder split between the rest of Canada and foreign sources. Potentially many more jobs may be created, directly and indirectly, in Alberta and the rest of Canada, in downstream manufacturing, distribution and sales. The plants will replace imports and some of the products may be exported to the U.S. if the necessary tariff concessions can be obtained. The plants will be coming on-stream between late 1979 and late 1980.

A related project to produce polyvinyl chloride (PVC) pellets using vinyl chloride monomer from DOW is being built by Diamond Shamrock Alberta Gas Limited. Located six miles east of Fort Saskatchewan, this plant will cost \$90 million. Start-up is scheduled for the fall of 1979, with 100 employed in the operation. PVC pellets are used to make a wide variety of plastic products, including those used in building construction. Downstream manufacturing opportunities should be a strong possibility in Alberta and western Canada as prospects for the domestic market improve.

Celanese Canada Limited has begun the construction of a \$23 million plant to produce vinyl acetate monomer, the only one of its kind in Canada. Domestic demand for this product, used as a base for paint and adhesives, is expected to equal the plant's capacity by the mid-1980s. In the beginning, 40 per cent of the product will be exported. Start-up is anticipated in the fall of 1979. The main feedstocks are acetic acid and ethylene, with the latter coming from Alberta Gas Ethylene.

Late in 1979, Union Carbide expects to open a \$23 million air separation plant, also at Fort Saskatchewan. The plant, which will employ 15, will supply gaseous oxygen to the nearby DOW plant as well as gaseous nitrogen for DOW and other customers in the region. In addition, it will produce liquid oxygen and nitrogen for markets in western Canada.

Despite an anti-dumping suit brought against it by E.I. Dupont de Nemours, Alberta Gas Chemicals Ltd., in Medicine Hat has decided to proceed with construction of two additional methanol units which will double the output of the plant. New markets have been found for the methanol in Asia. Construction will take four years at a cost of \$130 million. Three hundred construction and 50 permanent jobs will be created.

Canadian Industries Limited is planning to apply for an industrial development permit from the ERCB to double its low-density polyethylene plant capacity in Edmonton. The project will cost about \$45 million, with start-up contemplated for late 1981. The expansion will use ethylene feedstock from the Alberta Gas Ethylene plant. Seventy per cent of CIL's current production is shipped to central Canada. However, domestic markets, especially in the west, are expected to absorb the new supply.

Petalta, a consortium led by the Alberta Energy Company has received a favourable ruling from the Energy Resources Conservation Board for the construction of a \$250 million benzene plant near Bruderheim. This plant would commence production in 1983 after a 28 month construction period.

The consortium has obtained similar approval for a synthetic natural gas plant which would use hydrogen from natural gas to reform by-products from the benzene plant into a synthetic product. This SNG would then be exported to the United States. Approval for these exports must come from the National Energy Board and U.S. regulatory agencies. Cost of this plant is placed at \$175 million. Officials of the consortium claim the SNG production is vital to the viability of the benzene operation.

Benzene, along with ethylene, is a key building block in petrochemical and plastics production. The proposed plant will add significantly to the upgrading of non-renewable crude, and given favourable markets and economics, provide a component for possible future petrochemical processes. Exports of SNG to the United States, if approved by the National Energy Board, would have a beneficial impact on Canada's balance of payment in trade. The recent findings of the NEB that exportable gas is available in Canada might hasten a decision on such SNG exports.

Peak labour force of the plant is estimated at 600. Since the construction period proposed coincides with that of a number of other major projects, in particular with the heavy oil plant of Esso Resources this will add to the skilled labour demand generated by the Cold Lake plant with resulting shortages and upward pressures on wages.

The medium-term prospects for Alberta's petrochemical industry are still clouded by uncertain markets, feedstock prices, world competition and high capital and operating costs. Of the numerous projects identified, only four, valued at \$600 million, are in the planning stages. Several have been temporarily shelved pending more favourable economics, decisions from U.S. tariff agencies, the ERCB and the National Energy Board as well as a more favourable overall world economic situation. These problems are being felt not only in Alberta, but in Sarnia and in Montreal.

4.2.3 Financial Intermediaries

Alberta's fast-paced economy and increasingly valuable energy resources are attracting keen interest from the world's largest financial institutions. Other factors enhancing the environment for international banks to locate here are the province's private-enterprise minded government, proposed new Federal Bank Act legislation and the vast investment portfolio of the Heritage Savings Trust Fund.

In Calgary alone, newcomers include subsidiaries or representative offices of: Chase Manhattan Bank of New York; Société Générale of Paris; Swiss Bank Corporation; Crédit Suisse of Zurich and the National Westminster Bank Ltd., of London. Edmonton, meanwhile, has subsidiaries or representatives of the other two of the world's top three, Bankamerica Corporation, a subsidiary of the Bank of America, and Banque Nationale de Paris, plus Barclay's Bank. Civic officials predict that seven or more international banks will open offices in Calgary after the current shortage of office space eases and that approximately thirty other foreign banks are considering locating in the city by 1985.

The key roles of both the commercial and the mercantile banks are to help fund Alberta's expansion and participate in the worldwide oil supply, service and exploration work carried on by Alberta firms. Moreover, they look forward to handling part of the Heritage Trust Fund. Projections indicate (assuming the conservative domestic pricing policy of only 1.2¢ per litre per year increase continues) that the fund will have a total cumulative value of \$25.1 billion by 1985 -- it is just over \$5 billion at present. Canada's domestic money market is considered to be too small to absorb all of the Heritage Trust Fund.

Meanwhile, Canadian banks have also moved to expand their Alberta operations by such methods as setting up special petroleum-financing offices. In a move that was hailed as due recognition of Alberta's growing financial importance, The Royal Bank of Canada set up a western headquarters last year in Calgary. As of September, the office of the Chairman of the Bank of Montreal, Fred H. McNeil, is located in Calgary. Others have moved dataprocessing and other typical headquarters facilities to this province in recent months.

This influx of major banking institutions, both Canadian and foreign, bears witness to the growing importance of Alberta, and particularly of Calgary, as a major financial centre not only for Western Canada but as an important world centre for oil-related service industries.

Growth of the financial intermediary industry in Alberta, and particularly in Calgary, is an indication of the rapid growth of office white collar jobs. Development of 790 500 square metres of prime office space in the Calgary city core is in progress with 75 per cent of this space already leased. At about 19 square metres per employee this suggests space for 42 500 jobs. Queues for office space exist and are likely to get longer.

4.3 Forestry

Forestry, like agriculture, will not be as dynamic as energy in contributing to the economy of Alberta by 1985. The province possesses considerable timber resources, estimated at 940 million cubic metres of coniferous (softwood) and 590 million cubic metres of deciduous (hardwood). These renewable resources could assume strategic importance at some future date, perhaps before the end of this century. At present, from an annual allowable cut of about 26 million cubic metres, split into approximately 55 per cent softwood and 45 per cent hardwood, about 60 per cent of the softwood and 99 per cent of the hardwood goes unused. In spite of this, annual production far exceeds provincial needs. Exports in 1976 exceeded \$165 million, mostly in the form of lumber and pulp to the United States.

Two blocks of timber rights, covering 3.5 million acres between Grande Cache and Fox Creek, were offered for industry proposals in November 1978. By May 1979 17 submissions had been received. The Alberta government has stated that preference will be given to proposals offering the fullest utilization of the resources and the provision of significant employment opportunities in the Grande Cache area. A primary objective is the diversification of the present single (coal) industry status of this region. The Alberta Forest Service held public hearings in the communities of Fox Creek and Grande Cache during July, 1979 for the purpose of airing the proposals and to provide a forum for public participation prior to allocation of the timber. The recommendations of the Alberta Forest Service are to be submitted to their Minister shortly, with a decision by the government on the successful applicant expected before the end of the year. Start of construction will likely be in the spring of 1980 and the total capital investment probably will exceed \$300 million.

The provincial government wants to recover more revenues or rent from their timber resources and is considering the introduction of a flexible royalty, to replace the current royalty of \$3 per thousand board feet. The flexible or sliding-scale stumpage charge would give the government increased revenues during industry upturns, but would decline during periods of poor markets. Discussions are presently in progress between government and industry with respect to new royalty rates and new policy, both of which are designed to be a stimulant to the industry.

Procter and Gamble Cellulose Limited of Grande Prairie has announced plans for a \$15 million sawmill and planer mill which will be fully integrated with their adjacent pulpmill. The mill will produce year-round and its start-up will enable Procter and Gamble to utilize the remaining 175 000 cords a year of its

500 000 cords per year annual cut. The product will be standard sizes of finished kiln-dried softwood lumber destined principally (85 per cent) for the U.S. market, with the remainder for domestic consumption. The plant is expected to come on stream in 1980, creating 154 on-site and 133 woodlands jobs.

Simpson Timber Company (Alberta) Limited, may, under its present Forest Management Agreement with the Provincial Government, announce plans this year for two major capital additions to its plant in Whitecourt. Simpson's present \$20 million plant went into operation in 1976 at Blue Ridge, 12 miles east of Whitecourt. The mill has an annual production capacity of 100 million board feet of lumber, employs 145 people, and creates an additional 30 to 40 jobs in logging and trucking operations.

This is the first step in a three-phase forest products manufacturing complex. Information regarding plans for the future are sketchy at present. However, by April an announcement will have to be made on phase two of the Simpson project, originally projected as a possible laminated beam mill. By March 1, 1981, construction must be under way on phase three (the final phase) which will be a wood fibre processing facility which could be anything from a chipboard mill to a pulp mill. Should the decision favour a pulp mill, as is the present indication, planning requirements will dictate a commitment sometime this year, on an investment which will be over \$250 million and should result in the creation of around 1 500 new jobs, with production tentatively scheduled to commence in 1982.

Simpson Timber has made application for the new timber berths and proposes two new sawmills and possible a new pulp mill.

4.4 Agriculture

Prior to the discovery of large crude oil reserves in Alberta in 1947, agriculture dominated the provincial economy. Since that time, and principally in the last six years, agriculture's relative contribution has declined to roughly five per cent of the provincial real domestic product. The industry, however, has grown in absolute terms and continues to play a significant role in Alberta's economic growth and its future.

The outlook for Alberta's principal agricultural products is good. Production of Canadian grain and oilseeds through 1985 calls for an increase of between 25 and 50 per cent to meet projected requirements of domestic and export markets. Wheat requirements in 1985 may increase by one-third over the average of the past five years. Coarse grains, much more weighted towards domestic markets and the livestock industry, may

go up by 25-50 per cent and oilseeds requirements may double. To meet these projected opportunities will require that improvements continue to be made in grain handling and transportation; that Canada at least maintain its share of the growing international grain trade; and that producers receive the necessary market signals to increase production.

In Canada, beef breeding herds have declined by one-fifth since 1975. The result is a major herd building program which will likely require until 1982 to restore herd levels. Lower heifer and cow slaughter, as herds are being rebuilt, means that a continued decline in beef slaughter is anticipated through 1982 when production may be 20-25 per cent below the peak levels of 1977. In the short term this is contributing to the difficulties being felt in the slaughtering industry, but in the long run the industry's future looks bright. Meanwhile changes in consumer buying preferences are resulting in changing demands for different classes of meats, particularly hamburger beef.

Industrial milk producers in Alberta have been given an open quota to produce all that they are able. The demand for pork and poultry products remains strong, although proposals for new hog facilities are at an all-time high, which could lead to over-production and a downswing in the hog cycle.

Agriculture was a top priority of Alberta in the recently concluded multilateral trade negotiations. The province is pleased with the resulting liberalization of trade with the United States for live animals, meat, dairy products, seeds, grains, oil seeds and oil seed products. The province may also benefit from lower trade barriers on meat, cheese and forage seeds in the European Community. Especially welcome are the tariff reductions on pork and certain oil seeds into the Japanese market plus the binding of many of Japan's low existing tariffs. However, Alberta is disappointed that the variable import levies of the European Community, particularly affecting wheat and barley, will not be changed as a result of the negotiations.

4.5 Tourism

Tourism around the world is generally growing and the industry has recovered well from the 1973-74 recession. Alberta is no exception, with an overall average growth per year of 13.5 per cent between 1971 and 1978. However, in relation to the rapid increase in growth of the petroleum industry, tourism's share of the GDP has declined from 5 per cent in 1971 to 3.3 per cent in 1978.

The growth potential of Alberta's tourism industry is evident through its recent performance; revenues grew from \$375

million to \$900 million between 1971 and 1978 and projections indicate that this trend will continue. This factor certainly demonstrates the viability of the tourism industry.

Alberta's natural endowments are striking both in their diversity and in their scenic beauty: they also have the potential for far better use by the tourism industry. However, the development of a long-term tourism industry centred around demonstrated growth potential and the province's natural resources, will depend very much upon environmentally-sensitive planning, which uses yet preserves nature's beauty, and on the provision of better facilities in key destination areas.

5. SUMMARY OF ECONOMIC OPPORTUNITIES AND CONSTRAINTS IN ALBERTA

Although Alberta is well endowed with both renewable and non-renewable resources, its economy displays vulnerability in the long run because of too great a dependence on depleting non-renewable resources. Opportunities exist for diversification, particularly towards greater utilization of renewable resources, but some constraints to development must be resolved if the province is to realize its potential.

Alberta's continued growth in the medium term will be tied to efforts to keep the major energy developments such as the Alsands project, the Alaska Highway Natural Gas Pipeline and the ESSO Resources Cold Lake Project, on stream and on schedule. Because major energy-related developments have such a marked effect on the overall performance of the Alberta economy, any delays or postponements of these projects will have serious implications. However, with correct pacing these developments will result in rapid growth, with maximum benefits to Alberta as well as to the rest of Canada. Moreover, the expansion of the Alberta petrochemical industry and other activities associated with primary production will increase value-added through the further processing of raw materials, while providing employment and other benefits to the province.

The realization of Alberta's future growth potential is highly dependent on the resolution of the current development constraints and issues. In particular, the province needs adequate transportation systems and improved access to markets for its products. Good transportation systems are needed because of the distances that bulk commodities must be moved to market. While the current focus is on grain handling and the Crow's Nest Pass rates, the problem extends to many other commodities including oil, gas, coal, other minerals, forest products and manufactured goods. Access to foreign and domestic markets is vital to the Alberta company which faces a small local market. This is true not only for its traditional primary resources, but also for the growth of its manufacturing industry, especially food and beverages and petrochemicals. Tariffs and favourable trade arrangements are therefore of great importance to Alberta as was demonstrated by the province's keen interest in the recent Multilateral Trade Negotiations (MTN).

The very rapid rate of growth which the province is likely to experience throughout the 1980's due to developments in the energy field is also producing some concern for Alberta. In particular, shortages of skilled labour may develop and small projects may suffer as a consequence. The geographic concentration of activity in the Edmonton-Calgary corridor and special localized areas such as Fort McMurray to the virtual exclusion of other regions of the province is also of concern.

