Canada's Export Development Plan for KOREA

Government of Canada
Gouvernement du Canada

Industry, Trade and Commerce
Industrie et Commerce

CANADA'S

EXPORT DEVELOPMENT PLAN

FOR KOREA

Government of Canada
Department of Industry, Trade and Commerce

March 1982

FOREWORD

Canada's Market Development Plan for Korea has been prepared to assist those in the public and private sectors interested in expanding business in Korea. The assessments and proposals it contains are the basis for the Department of Industry, Trade and Commerce marketing activities in Korea over the next two to three years. The provincial governments, which play an integral role in the trade process, as well as federal departments with an international focus, have been consulted in preparation of the plan. The plan does not attempt to exhaustively cover Canadian interests or Korean opportunities. Rather, it highlights significant sector opportunities that are consistent with Canadian supply capabilities. As the document is updated, additional sectors may be analyzed and included as warranted in the revised editions.

The material presented is divided into specific sections that may interest different audiences. The Executive Summary is provided as an overview of Canadian/Korean trade relations and summarizes the separate sector strategies in a detailed action plan. Sections of a general nature concerning bilateral Canada-Korea relationships and socio-economic and political conditions in Korea may be particularly useful to the reader seeking a broad introduction to the Canada-Korea trade environment. The detailed analysis of the priority sectors will be of particular interest to the private sector.

EXPORT DEVELOPMENT PLAN - KOREA

TABLE OF CONTENTS

EXPORT DEVELOPMENT PLAN

I. EXECUTIVE SUMMARY

1. Purpose

The major theme of a Canadian Export Strategy for the 1980s as approved by the Cabinet Committee on Economic Development is the selectivity of markets coupled with a greater focus and co-ordination of Canada's export marketing efforts. In so doing, the government recognizes the critical role of the private sector and invites its participation and that of the provinces in pursuing those activities which will contribute to the objective of expanding Canada's share of the Korean market.

2. Introduction

Korea's striking transition from an agriculture based economy in the 1960s to one of a well diversified high technology society, with growing demands for both raw materials and sophisticated equipment, offers unique prospects for enhanced Canadian and Korean trade. Indeed, in 1980 two-way trade more than doubled its level of five years ago to $918 million (M). Furthermore, Canadian exports to Korea grew more than four times since 1976 to $504M in 1980. With this impetus, the challenge facing Canada is to capitalize on this momentum. To be successful, the Canadian marketing effort will need to be focussed, co-ordinated and concentrated. In order to meet this objective, this paper reviews and analyzes the past Canadian export market development performance, identifies the opportunities and impediments that future marketing efforts must address, and outlines an export development plan taking these factors into account. As such this document and the accompanying action plan are intended:

i) to guide the action and resource allocation of the federal government in providing an effective program of assistance to exporters and in fostering an environment conducive to Canadian export development in Korea;

ii) to set out a marketing plan designed to take advantage of the market potential and to overcome the constraints facing Canadian exports to Korea;

iii) to identify opportunities for export concentration and to stimulate and assist the private sector in pursuing them; and,

iv) to provide a focal point for co-ordinating the marketing efforts of the federal and provincial governments and the private sector.

3. Characteristics of the Korean Market

Like many countries, the oil crisis of 1973 dealt Korea a severe blow. Yet, unlike many, Korea bounced back with a remarkable display of resilience and determination. Energy diversification with particular emphasis on undertaking new export oriented investments in the early 1970s were the prime ingredients for a manageable trade deficit of $4.8 billion (B) in 1980, where imports totalled $22.0B and exports totalled $17.2B.

The Fifth Five-Year Economic and Social Development Plan 1982-86 outlines the Korean government's objectives: 1) to provide stability to the economy that is, to attain a growth rate of 7-8 per cent so that increases in the labour force may be absorbed in the market while raising income to an appropriate level; 2) to strengthen industrial competitiveness through the establishment and revision of competition policies; and, 3) to improve the balance of payments. Exports will continue to play a major role. With the Korean government's emphasis on import liberalization, Canadian companies may expect to witness greater competition in the Korean market as programs and policies are implemented to augment the trend towards a true market economy.

A notable thrust in the plan is the prominent role of the private sector. In contrast to the past, present and future investment choices will be left to the private sector as government will focus greater undertakings in social and manpower development. However, Canadian companies will continue to see government involvement in large-scale projects. See Table 21 for a list of major projects to be implemented in the next Five-Year Plan.

Although inflation is of concern to the Korean government, imports of resources and the transfer of technology would enhance the opportunity for trade with Canadian companies. The most promising prospects occur in the following sectors:

- Nuclear Power
- Energy Products
- Telecommunications
- Grains
- Aircraft
- Pulp

Notwithstanding the priority emphasis being proposed for these sectors, the Canadian government will continue to give support through its regular programs to activities in any sector which will contribute to the prescribed objectives.

In an attempt to increase Canadian exports to Korea, Canadian companies will need to take into consideration a number of distinctive features of the Korean market. These include: the recognition of the need to involve local companies through joint ventures or participation by Korean firms in the production process; willingness and ability to provide high technology; the establishment of close contacts with both Korean private and public sector officials; the extensive use of import controls and duties; the role of national government planning and co-ordination; the presence of American, Japanese and Australian suppliers as strong competitors; and the regime of regulations governing foreign investment and technology transfers.

4. Canada-Korea Trade and the Canadian Trade Development Effort

Canada's major ties with Korea revolve around trade and Canada's participation in the growth of the Korean economy. In 1980, two-way trade reached C$918M, more than double the total of five years ago. Canadian exports amounted to C$504M of which 15 per cent was composed of fully manufactured items. In 1980, for the first time in a decade, Canada enjoyed a trade surplus with Korea.

Canadian coal fuels the furnaces of the Pohang Iron and Steel Complex and will soon generate power for the Korea Electric Company; Canadian potash and sulphur are used in the manufacture of fertilizers to allow Korean agriculture to be more productive; Korean Air Lines pilots will soon learn to fly B747s on a simulator built in Montreal by CAE; and the Korean telecommunications system is in the process of installing the latest communications technology developed by Northern Telecom. Perhaps the most outstanding example of Canadian involvement in Korean development is the construction of the CANDU nuclear power station near the small town of Wolsung on the southeast coast of the country. This showpiece of Canadian technology will begin commercial operations next year and will become an important component of Korea's ambitious nuclear program.

Opportunities for Canadian firms wishing to enter the Korean market are diverse, as Korea, a developing country well on the road to full industrialization, needs both the high technology goods Canada can offer and our resources.

Agriculture has recently become an important area of Canada-Korea trade as ranchers have made large sales of beef cattle. In addition, Korea is dependent on foreign sources for such staple grains as wheat. The termination of the U.S.PL480 law (provision of concessional financing for the purchase of U.S. grain) should open up what to date has been a closed market to other countries, including Canada. Korea has imported in the past considerable amounts of Canadian rapeseed and the prospects for this and increased sales of other agricultural products such as alfalfa and soybeans are good.

As a nation with almost no mineral resources of its own, Korea provides a booming market for the products of Canadian mines. Coal, potash, and non-ferrous metals are currently the major import items but the rapid expansion of Korean industry will require an ever-increasing variety of minerals. However, the rising costs of energy are forcing many of Korea's smelting companies to reassess the viability of being a primary metal producer in a country which sees no end in sight to the constantly increasing oil prices. As such, opportunities could very likely open up for Canada to supply manufactured metals rather than concentrates.

Korea also imports large quantities of semi-manufactured goods such as aluminum ingots, wood pulp and petrochemicals. The market is large and growing.

Precision machinery is of course required for the continual upgrading of Korean industry. Japanese manufacturers have traditionally held the lion's share of the market, but Korea is seeking to diversify its suppliers and local firms are looking farther afield. Environmental equipment may become the biggest opportunity of the eighties as Korea prepares to undertake a massive cleanup of the environment. The rapid industrial growth of the last 20 years was achieved at great cost to the quality of life. Now that the country has achieved a degree of prosperity, steps are being taken to reverse the environmental damage that has occurred.

Korea's massive buildup of power generating capacity offers tremendous opportunities for Canada. Korea plans to put an additional 12 nuclear power stations in operation by 1991 (only one is currently in operation) along with eight coal fired plants, four pumped storage plants, six small hydro dams and a tidal power plant. This program offers opportunities both for manufacturers of equipment and for consultants as tremendous improvements in transmission facilities, ports and other infrastructure must be made to accommodate this ambitious program.

As Korea has been identified as an important market for Canada, bilateral trade relations are being intensified in order to maximize trade and to capitalize on the current momentum. Furthermore, both Korean and Canadian public and private sectors are seeking closer co-operation through such means as the Canada-Korea Business Council which held its first meeting in September 1981. Visits by the Honourable Suh, Suk Joon, Minister of Commerce and Industry, by the Honourable Edward Lumley, Minister of State for Trade and most recently by Prime Minister Trudeau have reinforced Canadian and Korean trade expectations. While embarking on this strategy, it is hoped to foster growth in exports and to provide a framework in which each other's aspirations may be taken into account.

5. The Overall Strategy

The market development plan for Korea consists of an inventory of new and existing instruments which will be used by the Federal government to assist Canadian exporters in increasing their penetration of the Korean import market. The inventory results from an assessment of needs in export development and the intention to capitalize on opportunities and overcome constraints deemed to exist in that market from the Canadian perspective. An Action Plan for Korea follows this Executive Summary.

Continued use of the Fairs and Missions Program is planned. Considerable importance will be attached to maintaining the appropriate frequency of ministerial and other high level government to government visits. The PEMD program will be promoted more intensively. This applies particularly to Section F which can help a company sustain the ongoing analysis and market development activities necessary to succeed in the Korean market and to Section C which assists companies to participate in foreign trade fairs.

Every effort will be made to expand the use of the Industrial Co-operation program of CIDA and to have this program become more responsive to Canada's export market development activities in Korea. To fully capitalize on existing opportunities and to overcome constraints to trade, new instruments must be developed within the context of the Korean market. Steps will also be taken to make Korean buyers more aware of Canadian expertise and products by the use of seminars, speeches by Ministers, publicity and press releases, pamphlets, and other promotional materials. To meet information needs, new studies will be undertaken. For example, Canada's competitive position in the Korean market, Korea's industrial capabilities in some priority sectors, and impediments in Korean law or Canadian government policy to technological transfer or industrial co-operation may be reviewed.

While the primary agents of facilitation of the export marketing plan will be the Asia Division of the Bureau of Pacific, Asian, African and Middle Eastern Affairs and the Embassy, and in sector-specific areas, selected Industry Sector Branches of IT&C, the degree of success in meeting the objectives of the plan is reliant on the co-ordination and co-operation of all federal departments and provincial governments and active involvement by business and industry. Consultation in the formulation of the strategy with the provinces, and with other federal government departments has therefore taken place. Ongoing consultations by IT&C officials with businessmen have ensured that private sector views have been incorporated into the plan. Given this concentration of effort and dedication of purpose, there is every reason to expect that Canada's share of the Korean market can be significantly expanded.

SUMMARIZED ACTION PLAN FOR KOREA

Ongoing	Activities/Events	Prime Responsibility Centre
	Arrange visit of leading Korean political figures to Canada	EA/PAM/Post
	Support Canada/Korea Business Council initiatives to foster better understanding of both Korean and Canadian commercial relations and encourage Canadian companies to joint ventures	
	Prepare follow-up articles in Canada Commerce on trade potential in Korea (1st article September 1981)	Post/PAM/IFS
	Telecommunications, computer peripherals and defence equipment companies to attend annual Korea Electronics show	Post/ELE/PAM/DPB
	Train Korean industrial representatives in Canadian International Grains Institute (CIGI) programs regarding Canadian grain standards and testing procedures	GMO/Post/PAM
	Identify means to provide increased access to Korean wheat market	Post/GMO
	Prepare report on Korean market for Liquefied Natural Gas (LNG) and the Korean petrochemical industry.	Post
	Report on the Korean lumber trade and its distribution channels.	Post
	Make representation on access for agricultural products, particularly Canola rapeseed	GMO/PAM/FPB
	Report on future activities of KECO and general trading companies in their role in uranium imports	Post
	Prepare coal market surveys on Korean demands for coal	Post
	Identify Korean pulp companies as investment partners for Canadian pulp exporters	Post/RIC
	Promote timberframe housing construction methods	PAM/Post/RIC

Ongoing	Activities/Events	Prime Responsibility Centre
	Contact Korean Airlines and Hapdong Corp. regarding requirements for STOL aircraft and corporate jets	Post
	Advise Canadair of new developments regarding the CL-215 water bomber potential	Post
1981*	Annual meeting of Canada/Korea Business Council	Post/PAM/Business community
	Analyze Korea's Fifth Five-Year Plan (1981-1986) to determine opportunities for Canadian sales	Post/PAM
	Follow up with technical representatives who attended Telecommunications Seminar in Korea on Rural Switching Program with emphasis on DMS-100 and other members of DMS family	ELE/PAM/Post
1982**	Review Korean taxation and foreign investment control	Post
	Report on proposed Korean membership in international patent protection institutes with emphasis on effects vis-à-vis technology transfer agreements	Post
	Study on competition in Korea	Post
	Promote CIDA Industrial Co-operation and PEMD Sections F and C to Canadian companies	IFS/CIDA/PEMD/ISBs/ PAM
	Seminar on Canadian policies on resources investment	Post/ESA/RIC/EMR/PAM
	Incoming visits by representatives from Korean Ministry of Energy and Resources (MER), Korea Electric Company (KECO), General Trading Companies (GTCs) and cement companies in order to further sales or uranium and coal	RIC/PAM/Post/ESA
	Home Builders Mission to promote Canadian timber-frame housing	RIC/PAM/Post
1983**	Incoming buyers from Ministry of Communications (MOC) to promote the Canadian automated postal systems	ELE/PAM/Post

* planned and budgeted
** proposed

EXPORT DEVELOPMENT PLAN

II. A. PURPOSE

The introduction of greater focus and co-ordination to Canada's marketing efforts is the major theme of a "Canadian Export Strategy for the 1980s" approved by the Cabinet Committee on Economic Development. The elaboration of 2-3 year marketing plans for Canada's priority markets is a central element of the strategy. This paper sets out an export development plan for Korea through:

i) creating a strategy framework to guide the actions and resources of the federal government in providing an effective program of assistance to and an environment for Canadian export development in Korea;

ii) elaborating a marketing plan to take advantage of the opportunities and to overcome the constraints facing Canadian exports to Korea;

iii) providing a working document to use as the basis for discussions aimed at co-ordinating the marketing efforts of the federal government in co-operation with provincial governments and the private sector.

The following plan for Korea includes:

i) an identification of the opportunities and constraints for Canadian export market development in Korea;

ii) a review of past efforts of the federal government to promote Canadian exports to Korea and the bilateral framework in which these exports occur;

iii) an identification of the marketing segments where the Canadian share of Korean imports may be improved or expanded;

iv) marketing plans for key priority sectors of the Korean market based on an analysis of the specific opportunities and constraints in these sectors;

v) an overall market development plan for Korea outlining methods of capitalizing on opportunities and overcoming constraints found to affect Canadian exports to that market, and recommending appropriate changes to present promotional techniques and possible new techniques to facilitate export growth.

B. THE CANADA/KOREA EXPERIENCE

As the last few years have demonstrated, Korean market demands for raw materials and high technology services and equipment have generated an exciting challenge for Canadian companies. Given Korea's stated interest to diversify its trade and reduce its dependence on Japan and the United States, Canada with its wealth in raw materials and foodstuffs is a desirable trade partner. Indeed, Canadian expertise in the high technology industries of telecommunications, aircraft and nuclear power can contribute to Korea's development as a strong member of the Western World.

In April 1981 the Korean Minister of Commerce and Industry, the Honourable Suh, Suk Joon, visited Canada with a view to strengthening the bilateral relationship. The Canada Korea Business Council was established by the private sector and held its first annual meeting in Korea this fall. These greater ties with private and public sectors of both countries will serve to augment joint marketing activities. To further reinforce Canada's interest in this relationship, the Honourable Edward Lumley, Minister of State for Trade undertook a follow-up mission to Korea in June 1981. Most recently, Prime Minister Trudeau visited Korea, the first visit by a Canadian Prime Minister to that country, and raised interests and concerns of Canadian businessmen with Korean officials.

Both countries have taken up the challenge to increase trade and the momentum now underway offers an opportunity for Canadians to capitalize on this relationship.

C. CHARACTERISTICS OF THE KOREAN MARKET

1. Demographic and Socio-Economic

The Republic of Korea, with a land mass of 98,758 square kilometres and a 1981 population of 40.1 million, is one of the most densely populated areas in the world. It is also one of the least endowed with natural resources. With the exception of tungsten, limestone, gravel and anthracite coal, Korea must import almost all its basic raw materials. Food imports are vital, as barely 20 per cent of the nation's land is arable. Notwithstanding the scarcity of land, Korea has, in other than poor harvest years, become largely self-sufficient in rice and barley.

Since 1962, the year after Park Chung Hee assumed power, Korea's GNP has grown at an average real rate of 9.8 per cent per annum. This economic success has been predicated upon the creation of a large manufacturing and export-oriented industry, an orientation that continues as the government's primary objective under the present administration of President Chun Doo Hwan. The key ingredient is Korea's low-cost, exceptionally hard-working and well-educated labour force.

This transition from predominantly rural to a largely industrial society has resulted in drastic shifts in the economy. The share of the agricultural, forest and fish sector in GNP has declined steadily to 16.9 per cent in 1980 from 36.6 per cent in 1962. On the other hand, mining and manufacturing have almost doubled their share of GNP and today account for 30.7 per cent of Korea's annual output. Since the mining industry is small, it is readily apparent that Korea's economic success story has been based on manufacturing. The services sector covering banking, telecommunications, transportation, etc. has held a fairly steady share of GNP, as illustrated by Table 1.

The rapid drive toward industrialization is readily apparent in the changing composition of the work force (Table 2), especially in the last five years. A steady movement, at the rate of 2 to 3 per cent a year, from the rural sector and into the manufacturing and service industries continues to take place. This in turn is creating major new demands for urban infrastructure - housing, water supply, sewage treatment and mass transportation. Significantly, a high 34.0 per cent of the work force is still employed in the country.

Despite the heavy rural composition of the work force, illiteracy in Korea is almost non-existent. Furthermore, the predominance of small owner-operated farms has, together with

the government's rural support program and labour intensive development policies, meant that by the mid 1980s the majority of Koreans had benefited significantly from the country's growth. The same factors have also prevented the migration into Korea's cities and has thus minimized a rural-urban income imbalance. Notwithstanding the reduction of the population growth rate to a manageable 1.6 per cent annually, Korea's work force is one of the youngest and fastest growing in the world. Unemployment has been reduced from more than 8 per cent in the early 1960s to 4.1 per cent in 1975 and 3.2 per cent in 1978. However, it rose to about 4 per cent in 1979 and 5.2 per cent in 1980. The demands on Korea's job creation capacity are extensive. It has been estimated that GNP must grow by 7 per cent per annum just to prevent unemployment from rising. Reducing unemployment and extensive under-employment remains an important Korean challenge.

2. GNP Performance

The political stability and strong leadership that characterized the 19-year regime (1962-1979) of President Park Chung Hee has fostered unprecedented economic growth. The last five years of the Park administration were no exception. Despite generally unimpressive growth in the world at large, Korea's GNP from 1975 to 1979 (Table 3) grew at an annual average rate in excess of 10 per cent. As a result, GNP per capita hit new heights of U.S.$1,597 in 1979 compared to U.S.$87 in 1962.

While this new found prosperity has been welcomed by all Koreans, it has not been achieved without a certain price. Indeed, it is now recognized that the Korean economy in the latter half of the 1970s was distinctly overheated. The domestic inflationary pressures created in the 1976 and 1978 period, together with the doubling of oil prices in 1979 and political uncertainties following President Park Chung Hee's assassination have created economic difficulties. In turning the economy around after a 5.7 per cent decline in 1980, the present administration of President Chun Doo Hwan is very much aware that new economic policies will be required. Indeed, the 1982-86 Five-Year Plan projects an annual GNP growth rate of 7.6 per cent. This will be achieved through reduction of government budget deficits, elimination of non-essential expenditures, improvement in managerial efficiency of public enterprises, increases in tax revenues, and changes in policies to move towards an open market economy.

3. Price, Wage and Productivity Performance

Through hard work, high growth has become a hallmark of Korean economic performance. Unfortunately the same growth rate is parallelled by double digit inflation and hefty wage increases

(see Table 4). From 1975 and 1979, Korea's consumer price index has increased by an annual average of 16.8 per cent, with wholesale prices increasing by about the same amount. A combination of excessive monetary expansion and the rising cost of imported raw materials, most notably oil, have variously contributed to this development. The sudden rise in per capita income of more than $1,000 generated a buying spree. As more housing, meat and household appliances were demanded, prices of these products and other more basic necessities soared. Consumer demand was for the first time becoming a factor to be reckoned with by Korea's economic planners. By 1979, however, restrictive economic policies were cooling off the economy and beginning to get domestic sources of inflation under control. Just as the economy was cooling down, oil prices doubled and stoked the fires of inflation anew. It is estimated that 1980 wholesale prices increased a disconcerting 40 to 43 per cent, greatly assisted by a 30 per cent devaluation of the Won during the year. On the positive side Korea's planners estimate that for both 1979 and 1980 roughly 65 per cent of Korea's inflation was due to the high cost of imports. Since 1979 Korean wages have increased with the result that, by December 1979, the average wage in manufacturing including overtime and bonuses was Won 139,430. In 1980, the average manufacturing wage was Won 165,900 representing U.S.$248 and an 18.9 per cent increase. Unless the Won is routinely devalued, Korea's days as a producer of cheap labour products are clearly numbered. From 1975 to 1979 Korean labour productivity, or the average output per manhour worked, has increased by about 23.2 per cent per year. While that is an impressive performance by any standard, real wages for each of 1975, 1976 and 1977 increased at an even faster rate, a fact which clearly contributed to the 3 per cent decline (in real terms) of Korean exports in 1979. The real wage/labour productivity situation reversed itself during the course of 1979 and taken together with the Won devaluation has restored real export growth. Strenuous efforts are being undertaken to limit wage increases (10 per cent is the 1981 target) and reduce the rate of inflation to the 10 to 11 per cent range.

4. Financing the Growth

Korea's economic growth has been dependent on substantial inflows of development assistance and even larger amounts of foreign commercial borrowings (Table 5). Labour intensive development policies and ingenuity in getting by with a carefully planned minimum of infrastructure have meant that foreign investment has not been a major contributing factor. From 1962 to 1980, foreign investment has totalled just over $1 billion. Perhaps most importantly, Koreans have dipped heavily into their own pockets as indicated by the steady climb of the domestic savings ratio from 18.6 per cent in 1975

to 27.2 per cent in 1978 (Table 6). At the same time the nation's printing presses have also been active as the broadly defined money supply has, over the last five years, grown by an annual average in excess of 32 per cent. Excess liquidity, particularly in 1977, has been a major contributor to Korea's high rates of inflation. Decreasing the growth in money supply will not be easy and Korea faces the age-old dilemma of establishing trade-offs between employment and inflation. Resolution of the excess liquidity problem is rendered more difficult by the high debt structure of most Korean corporations. However, Korea's projections in the 1982-86 Five-Year Plan are for a reduced annual increase in the money supply to 22 per cent and an increased domestic savings ratio to 29.6 per cent.

5. Balance of Payments

Like all non-oil producing nations, Korea was dealt a severe shock by the drastic increase in oil prices in 1973/74. Unlike many, Korea bounced back in a remarkable display of resilience and determination. A similarly determined response to the second oil crisis of 1979 would also appear to be yielding the desired results.

In the mid-1970s, Korea's answer to the oil crisis was to closely manage its imports while simultaneously undertaking major new export oriented investments. The strategy paid off handsomely. From 1975 to 1979 Korean exports almost tripled to reach $14.7 billion (see Table 5). Imports of agricultural products, capital goods, raw materials and intermediate industrial products also grew at an average annual rate of 24.7 per cent. The trade deficit was thus held at a manageable level. Even 1979's $4.4 billion deficit was not by itself an undue cause for worry. The challenge imposed by 1979's doubling of oil prices was met by a 30 per cent devaluation of the Won which resulted in export growth of more than 17 per cent to $17.2 billion in 1980. The rapid cooling of the Korean economy during 1980 held the import increase to an historically low 14.2 per cent. The result - a tolerable trade deficit of the same magnitude as that of the previous year.

The Korean solution to improving the services side of its balance of payments ledger has been unique. Korea embarked on one of the world's most unusual emigration programs. One hundred thousand plus Korean construction workers are currently involved in the Middle East building roads, ports, housing and telecommunications systems. From 1966 to 1979 Korean construction companies signed more than $22.8 billion of overseas construction contracts. Indeed, the country's overseas service receipts leaped from $881 million in 1975 to $4.8 billion in 1979. Earnings from overseas construction and

remittances at home by Korean workers have thus played a major role in first eliminating, by 1977, Korea's current account deficit and then keeping it at acceptable levels.

From 1975 to the present, Korea has fully financed its current account deficits and steadily increased its foreign exchange reserves. A program of foreign borrowing contributed to a net inflow of long-term capital which averaged $1.7 billion from 1975 to 1979. Although the terms and conditions at which the monies were raised were not as favourable as was the case in the halcyon days of 1978 and early 1979, the program has been sustained through 1980. Nevertheless, the cost of servicing the increased debt burden has been kept in a manageable range not exceeding 14 per cent of the total debt.

6. Korean Trade Policy

The Korean government exerts strong influence on the domestic economy not only through national planning mechanisms but also through the tendency for interchange of personnel between government and private sector. It is therefore important to establish contacts not only with private companies but also with the Korean government, its agencies, research institutes and industry associations.

Korea has surpassed the level of a typical less developed country (LDC) with per capita income levels and economic growth high enough to place the country in the middle income country (MIC) grouping. For that reason, the traditional methods of import penetration using International Financial Institutions (I.F.I.) and trade-aid mechanisms are not as important in the Korean context as for countries having lower levels of development.

Although Korea still restricts foreign investment, the best approach to secure a foothold in this market is a joint venture with a Korean firm and/or technology transfer agreement. This is particularly important in those industry sector areas which Korea is attempting to develop. In all areas, it is essential to use a Korean agent.

Another approach to securing contracts is to encourage Korean investment and/or joint ventures in Canadian operations, particularly in the area of resources. Korea has been following a policy of "resource diplomacy" i.e. actively promoting closer relations with the resource rich nations, the purpose of which is to ensure stable and secure supply. The importance of development/import projects is reflected in the Korean government's provision of extensive financial and administrative supports through the Overseas Resources Development Promotion Act, passed in December 1978 and the

Forest Act for investments in foreign lumber projects. Preference is given in purchasing of resources from foreign operations having Korean investment; this is encouraged through a system of tax and customs duty exemptions.

Foreign investment in Korea has been limited by government policy. As of June 1980, the total amount was just over $1 billion invested in 874 projects. Japan accounted for the bulk of investments with 52.9 per cent of the total, the U.S. provided another 21 per cent and European countries accounted for 23.8 per cent led by The Netherlands (8.9 per cent). In September 1980, the Korean government took steps to liberalize the policies on foreign investment. The major changes include a) permission for foreign investors to operate wholly owned subsidiaries in certain industries which were previously subject to the rule of 50/50 joint ventures, b) extension of the types of business eligible for foreign participation to include the services sector c) reduction of minimum foreign capital required per project from U.S.$500,000 to U.S.$100,000 d) abolition of all regulations regarding withdrawals of foreign invested funds which formerly required a minimum two-year period prior to repatriation e) more flexible application of regulations on land acquisition by foreigners and simplification of procedures to obtain permission f) establishment of a consultative centre in the Korean Chamber of Commerce and Industry to provide information, respond to queries and introduce suitable local partners to foreign investors. Details of foreign investment policy are governed by the Foreign Capital Inducement Act and applications are considered by the Foreign Capital Inducement Deliberation Committee for projects involving investment amounts exceeding U.S.$10 million and by the Foreign Investment Deliberation Committee for amounts up to U.S.$10 million.

Korea has traditionally used tariff and import licence restrictions to protect its domestic industries. Korea acceded to the General Agreement on Tariffs & Trade (GATT) in 1966, but to date only a limited percentage of tariffs are subject to GATT bindings (i.e. a tariff cannot be increased beyond the level agreed in GATT negotiations). On the remaining items, therefore, tariffs can be increased at any time. Import substitution is encouraged by high tariff rates in the consumer goods sector (50-60 per cent), particularly those in the luxury goods category (including alcohol) where tariffs range from 80-150 per cent. In general, where items are either produced in Korea or considered non-essential, tariffs range from 20-40 per cent; tariffs for other items are in the range of 0-15 per cent.

In addition, Korea operates a tariff quota system for some items, whereby a low rate is charged up to a certain quantitative limit above which further imports are subject to a higher

tariff rate of duty. Tariff quotas apply to 64 items including raw materials for foodstuffs, chemicals, pulp and steel products.

Nevertheless, the Korean government is committed to a policy of gradual tariff reduction; the last major reduction occurred in 1979 when the average unweighted level of tariff rates was reduced from 36 to 25 per cent.

In conjunction with tariff measures, the Korean government operates a system of import licensing both for information and control purposes. The requirements for import licences are governed by the Ministry of Commerce and Industry; however, industry associations are provided with an opportunity to comment on revisions, which are made and published on an annual basis applicable from the period July 1 - June 30. The requirements for import licences are classified by 8-digit CCCN code (Customs Co-operation Council Nomenclature) and fall into four major categories:

a) Import - Restricted: items for which importation requires prior recommendation by specified ministries/industry associations or subject to regulations separately announced by the Ministry of Commerce and Industry,

b) Automatic Approval (surveillance): items (mainly luxury goods) which can be imported as automatic approval items until such time as the imports of the item tend to be excessive and likely to cause adverse effect to the nation's economy. If so, the government issues an instruction to the import licence approving authorities to withhold approval,

c) Automatic Approval (diversification): items for which imports are restricted from designated regions (currently applicable only to Japan),

d) Automatic Approval: items for which import licences are automatically approved by foreign exchange banks.

The Korean government has been following a gradual liberalization policy with respect to import licence requirements. Major improvements carried out to date include the elimination of import-prohibited items, revision of notices on an annual rather than the previously semi-annual basis, and adoption of an 8-digit CCCN code rather than the previous 4-digit system. In addition, the number of automatic approval items versus import-restricted has been increased from 69.4 per cent to 74.7 per cent of total tariff items as shown below.

IMPORT LICENCE LIBERALIZATION

	1.7/1980 30.6/1981	1.7/1981 30.6/1982
Automatic Approval items (A)	5,182	5,579
Restricted Items (B)	2,282	1,886
TOTAL No. of Tariff Items (C)	7,465	7,465
Rate of Liberalization (A/C)	69.4%	74.7%

Although the Korean government is determined to further liberalize imports, it is expected that it will continue to place certain liberalized items on the surveillance item list and increase tariffs on certain liberalized items wherever the market situation warrants.

The government has recently drawn up a list of priority items for import liberalization that will be carried out in three stages over the next five years, starting in 1982. The liberalization rate will be raised up to 90 per cent in 1986 from the present 74.7 per cent.

To be included in the first stage of liberalization will be non-competitive raw materials that virtually don't need to be placed under import restrictions, textiles and some other major products which are now exported from Korea with a competitive edge and require further improvement through exposure to foreign competition, and those items which are absolutely without comparative advantage. In the second stage, the domestic market will be opened completely to imports of machinery, electric and electronic products, petrochemical products and metal products which are all expected to lose their comparative advantage in the future and those consumer goods which need to be imported for reasons linked to the stability of the national economic life. Other industrial and manufactured products and luxury consumer goods will be set free from import restrictions in the third stage. These liberalization measures will be offset by flexible adjustment of tariff rates where necessary to protect those industries that still need to be protected from foreign competition.

An additional instrument used by the Korean government to direct the flow of trade is the advance import deposit scheme by which a Korean importer is required to deposit a stipulated amount in the bank in order to obtain foreign exchange guarantees. As with tariffs and import licences, gradual liberalization of this policy is being undertaken. Advance import

deposits are now no longer required for imports on an at-sight payment basis. For imports on a deferred payment basis, import deposits are required as follows: 5 per cent for raw materials imported for purposes of deferred payment exports, crude oil and wheat; 10 per cent for other grains, milk cows and raw materials for export; 20 per cent for general use imports.

The policies and regulations outlined above with respect to tariffs, import licences and advance import deposits should not discourage a prospective exporter from investigating opportunities in the Korean market. Rather, the exporter should be aware of the types of regulations that potential Korean clients must follow, since contract conditions and timing are necessarily affected.

For further information, contact the Asia Division, Bureau of Pacific, Asian, African and Middle Eastern Affairs (613) 996-9195.

7. Export Composition

Given Korea's rapidly rising wage levels, the success of its export drive has to a large degree been based on product diversification (Table 7). From 29.9 per cent in 1967, the share of primary products in Korea's export mix was steadily reduced to 9.1 per cent in 1980. Light industrial products (textiles, shoes, sporting goods, hand bags, toys, bicycles, etc.), for which Korea is best known, remain an important 47.6 percent of total exports, well below the 68.8 percent share of 1971. These are projected to be decreased even further by 1986 to 5.5 per cent for primary products and 39.5 per cent for light industrial products.

Significantly, and most important insofar as the future is concerned, substantial progress has been made in increasing exports of the more capital and technology intensive products (cement, steel, ships, fertilizer, automobiles, electronic products, etc.) which are included in the Heavy and Chemical product category. These products accounted for more than 40 per cent of Korea's 1980 exports, and are projected to increase to 55 per cent in 1986. Mindful that the Korean economy is in transition, it should be pointed out that about $1.5 billion (roughly 10 per cent of 1980's exports) of electronic products are included in the Heavy and Chemical product category. Many of those products would be predominantly labour intensive in nature. That notwithstanding, a significant beginning at product diversification has been made and continues to take place. The speed with which this shift is accomplished will be constrained by Korea's capability to absorb new technology and is an important determinant of the

country's economic future. Failure to progress further in this direction could produce a vicious cycle of downward pressure on wages, regular Won devaluations and more inflation.

8. Korean Exports

Korea's product diversification efforts have been coupled with some concerted initiatives to reduce its dependence on the American and, to a lesser extent, the Japanese markets. These initiatives have yielded results (Table 8). From more than 47 per cent in 1970, U.S. purchases today account for less than 30 per cent of Korean exports. By the same token, the Japanese market has seen its share of Korea's annual exports shrink from a high 38.5 per cent in 1973 to 17.4 per cent in 1980.

New outlets for Korean products were successfully developed in Europe, which now accounts for 19 per cent of Korea's overseas sales - more than double what it was in 1970. Due primarily to substantial inroads in the Middle East, the "Other Asia" grouping now absorbs a full 20 per cent of Korean commodity exports.

Korea has clearly developed a wide geographic export market base. Further diversification remains a priority but, as evidenced by the pattern of the last three years, will be harder to achieve. Since greater than 25 per cent of Korea's GNP is derived from exports, it remains vulnerable to abrupt changes in the world economic and trading environments, much more so than other countries.

9. Import Composition

While Korea has become self-sufficient in barley production and has vastly increased its rice production, it remains a major importer of agricultural products, principally wheat, corn and soybean. Imports of basic agricultural and food products (imports of almost all processed foods are restricted) account for about 7 to 12 per cent of the nation's imports (Table 9).

Reflecting the very high investment levels that have characterized Korea's industrialization efforts, capital goods have consistently taken up about 23 to 31 per cent of Korea's foreign commodity purchases since 1967. In 1980 Korea imported more than $3 billion in foreign machinery and equipment. Indeed, Korea is an interesting market for Canadians. Major contracts for nuclear reactors and telecommunications equipment have shown that Canadian companies are competitive in this market.

The bulk of Korean imports fall into the category of raw materials and intermediate industrial goods, which have over the years provided the main impetus to growing Canadian sales of such products as coal, pulp, potash, tallow, asbestos and aluminum ingot.

The major import change in recent years has been oil prices and increased oil consumption. From 6 per cent of imports in 1967, oil in 1980 accounted for 25.3 per cent of Korea's import bill amounting to $5.5 billion. Oil imports absorbed over 10 per cent of Korea's entire GNP in 1980.

Energy management and procurement is a Korean priority. An embargo on the construction of all oil fired power plants has been in effect for more than two years - a significant step as 50 per cent of Korea's oil consumption goes towards power generation. A major nuclear program, one of the world's largest, is already well under way and continues to expand. Korea's large cement industry is being forced to convert to coal fired operations. The Ministry of Energy and Resources recently estimated that by 1991, despite these measures, 18 per cent of Korea's energy needs (versus 74 per cent in 1979) will still come from oil.

10. Korean Imports by Area

The pattern of Korean purchases from the world has also shifted steadily over the last decade (Table 10). The main shift in Korea's import mix by country is attributable to rising oil prices and consumption. This has resulted in the share of the nation's imports from Asia and the Middle East rising by about 7.5 percentage points since 1973, while the share of the country's largest trading partners, Japan and the U.S., has declined a full 21 points over the same timeframe. The rise in Europe's share to 12.5 per cent of total imports, together with the drop in Japan's share which was greater than that of the U.S., indicates that Americans and Europeans are eating away at Japan's hold of the Korean capital goods market. This process is being assisted by Korean government measures designed to reduce its $3.3 billion trade deficit with Japan.

11. Looking Ahead

From 1962 to 1979 a hard working, well educated people with 18 years of stable government and a strong sense of national purpose fashioned one of the world's greatest economic success stories. As the decade of the 1980s opened, however, Korea was entering a period of greater economic uncertainty occasioned by political transition, higher oil prices and

world economic downturn. While Koreans could look to the past with satisfaction and a sense of real achievement they face the future with some apprehension.

The basic problems of food and shelter have been solved and a middle class created. Rural and urban income disparities have been largely eliminated. Koreans are nevertheless clearly dissatisfied with the high and rapidly increasing cost of living. The baby boom is also placing strains on the country's job creation capacity. This comes at a time when the need to control domestic sources of inflation suggests a restrictive economic policy. At the same time, oil price increases are placing a great strain, thus requiring greater energy diversification. What's more, the demands of an economy are also creating the realization that, if economic performance is to be sustained, a reduction of government controls and a greater reliance on the market mechanism will be necessary. Major reform, if not privatization, of the banking/financial system is being proposed by some planners as an essential means of allowing the market, and not government dictates, to efficiently allocate investment flows and to bring about necessary industrial rationalization. Making Korea's heavily debt burdened companies less dependent on government controlled financing and a host of regulatory decisions are also seen as important means of inducing greater corporate self discipline.

High food costs point to the need for land reform and agricultural mechanization. The ongoing transition to a more technological society also requires major new investments in education and training. Korea's headlong rush towards industrialization has left little time for basic structural changes which are now perceived as necessary to continued progress. It has also ushered in rapid, even traumatic, social changes.

Since coming to power the Chun government has attempted to maintain the general economic thrusts of the Park administration while modifying three of the perceived shortcomings of that administration. As far as the general policy is concerned the new government remains deeply committed to export led growth and a market economy. However it is trying to reverse the trend towards less equitable distribution of income that has been evident since 1975. It is also attempting to rationalize the allocation of government funds for economic development by ending "political" allocation of preferential loans and grants. While continuing to pick winners and losers, the government is now allocating investment funds across a wider spectrum of industrial activity. The third aspect of the Chun government's policy is the liberalization of the country's financial structure and import

oriented industry and the effort to expose these sectors, like its export industrial counterpart, to market forces. None of these policy directions are clearcut as they are often in conflict with each other or with immediate policy aims. Their manifestations can only be expected to emerge gradually.

The challenge facing Korea will be to bring inflation under control, create hundreds of thousands of new jobs, and prevent the balance of payments from deteriorating without overlooking the need for more basic reforms. Strong leadership and political stability will be key ingredients of success. All in all, the next few years promise to be difficult, but Koreans are a tough and resilient people. They have not only survived centuries of foreign domination, but have gone on to build a highly sophisticated industrial economy. The people's ability to learn, their entrepreneurial drive, and above all, their tremendous capacity for hard work, will serve them well in confronting the future.

D. CHARACTERISTICS OF CANADA/KOREA TRADE

1. Trends in Canada-Korea Trade

A key feature of Canada-Korea trade since 1976 has been high growth. At $918 million in 1980, two-way trade has more than doubled its level of five years ago (see Table 11). Since 1977, most of the impetus for this growth was provided by the rapid and sustained expansion of Canadian exports to Korea, led by nuclear materials, reactor equipment, fuel and heavy water, and a blend of other semi-manufactured goods and raw materials, most notably coal, pulp, asbestos, aluminium and potash (see Table 12). Canadian shipments to Korea grew by an impressive annual average of 45.6 per cent over the period. While significant year to year fluctuations have taken place, the composition of Canada's trade with Korea is well structured and largely reflective of Canadian trade with its overseas trading partners. However, Canada's agricultural trade with Korea is unusually low. Most significant in the trends of Canadian exports to Korea is that fully-manufactured goods consistently account for about 15 per cent of total exports and that semi-manufactured goods have largely displaced raw materials exports (57.1 and 26.4 per cent respectively of total exports in 1980).

Korean sales to Canada, which jumped a remarkable 82.5 per cent in 1976 (textile and clothing shipments more than doubled that year), have subsequently grown at a slower annual rate of about 9 per cent (see Table 13). In 1980, for the first time, the value of Korean exports to Canada (aided by a 30 per cent devaluation of the Won) actually declined by 10.5 per cent. By volume, Korean clothing shipments have declined steadily from their 1976 peak level. In the last two years those shipments have been substantially below bilaterally established restraint levels. The growth of Korean exports has therefore been in less labour-intensive textile products (yarn and thread, fabrics) together with "other apparel and apparel accessories (hosiery, hand-bags, etc.)" accounting for about 24 per cent of the growth of Korean exports since 1976. A wide range of non-textile products, which have increased at an annual rate of 16.3 per cent since 1977 (25.6 per cent if 1976 is taken into consideration) have spearheaded the expansion of Korea's sales. Many of these products could be considered as being moderately high in technology content and capital intensity. As a result, Korean sales to Canada are much more balanced in their composition than was the case five years ago. Nevertheless, the Canadian textile market remains one of Korea's largest on a per capita basis, with textiles and clothing still accounting for 37.6 per cent of Canada's purchases from Korea. Fully and semi-manufactured goods are responsible for more than 95 per cent of Korean sales to Canada.

2. Trade Policy Considerations

Canada's interest in Korea stems from our desire to ensure continued stability on the Korean peninsula and to develop our growing commercial and other bilateral interests. A significant theme in Canada-Korea relations, dating back to Canada's participation in the Korean War, has been support for the political and territorial integrity of the Korean government against the North's claims of being the sole legitimate government.

Although Canada recognized the Republic of Korea in 1949, and a Canadian Ambassador was accredited to Seoul in 1964, the Canadian Embassy in Seoul was not established until 1973. Since that time bilateral relations have grown rapidly. Trade relations between Canada and Korea are governed by a bilateral Trade Agreement signed in December 1966 and by mutual membership in the GATT. As a result, Canada and Korea extend to each other the benefits of Most-Favoured-Nation (MFN) treatment. In addition, Korea is accorded the General Preferential Tariff (GPT) treatment.

Other bilateral agreements signed between Canada and Korea include the Nuclear Co-operation Agreement (January 1976), the Bilateral Textile Agreement (January 1979) and the Double Taxation Agreement (December 1980). Exchanges of parliamentary delegation visits over several years culminated in the establishment in December 1979 of a Canada-Korea Parliamentary Association.

The importance of the bilateral relationship has resulted in an increasing number of visits by ministerial and senior level officials. In addition, businessmen of both countries have recognized the growing importance of bilateral trade and, in order to further enhance this relationship, formed the Canada-Korea Business Council in January 1981. The first annual meeting of the Council was held in Seoul in September 1981.

The bilateral relationship, developed first on the basis of mutual political support, has been strengthened through the complementarity of trade interests. Due to Korea's total dependence on imported resources, Korea has developed a policy of resource diplomacy which consists of actively promoting closer relations with the resource-rich nations. Within this policy, Canada is encouraged to provide stable sources of energy and raw materials and is seen as an excellent market for Korean investment in resource development. Canada is also an important market for Korea's light industrial goods. In addition to resources, Canada can provide expertise in management, engineering and high technology, areas in which

Korea is still lacking. Finally, the combination of Canadian engineering and Korean construction capabilities can lead to excellent opportunities in both Korea and third countries.

The strength of the bilateral relationship between Canada and Korea should provide further opportunities for trade. Government national planning mechanisms, a trend towards import liberalization while at the same time a preference for partial Koreanization, a growing economy, government-supported initiatives to diversify from heavy and labour-intensive industries towards technology-intensive industries, and a wish to expand trade with Canada make Korea an important market for export development.

E. CANADIAN TRADE DEVELOPMENT ACTIVITIES AND INSTRUMENTS

1. General

In 1980, two-way trade with Korea exceeded $900 million, making this country one of Canada's most important trading partners in the Asian and Pacific areas. The growth of Canadian trade has been dramatic, parallelling the tremendous growth of Korea itself. In 1976, Canadian exports totalled $116 million. By 1980, this level had reached $504 million of which 14.6 per cent is fully manufactured goods and 57.1 per cent semi-manufactured items.

As Korea has been identified as an important market, bilateral relations are being intensified. This is designed to focus more attention on that market and begin to encourage Canadian manufacturers, who have not already thought of this country as an export market, to review the potential which exists. At the same time there is a concerted effort on the part of both Korean business and government to diversify their current sources of supply away from the traditional trading partners, namely the U.S. and Japan. This policy has benefited Canada and will likely continue to do so. As well, as part of Korea's recently evolved "resource diplomacy" policy, Canada has been identified as a country with which Korea intends to improve relations, in order to establish an atmosphere more conducive to obtaining long-term contracts for raw and semi-fabricated materials. In addition to the trade potential, new opportunities will open up for greater Korean investment in Canada in the resource sector, due to the lack of resources in Korea and the fact that long-term contracts often require customers to take an equity position in new resource development ventures. Koreans are prepared to enter such arrangements and Canada should be aggressively promoting investment opportunities in this market.

In recent months there has been an increased level of activity; several missions have visited Korea from Canada; the installation of the Canada/Korea Business Council; the signing of Wolsung Candu reactor; and Northern Telecom signed a $60 million deal with the Ministry of Communications.

The heightened level of activity was reinforced by the Minister of Commerce and Industry for Korea visiting Canada in April 1981. During the visit, the Korean minister pressed for greater access to the Canadian market for Korean products. Nevertheless, he urged Canadians to look more closely at penetrating the Korean market through exchanges of technology as well as joint ventures. To follow up this event, the Honourable Edward Lumley, Minister of State for Trade visited

Korea in June 1981. While in Korea, Mr. Lumley promoted special projects, including an additional sale of a Candu reactor, Northern Telecom's interest in expanding its telecommunications market share, the sales of STOL aircraft, and key trade access problems (e.g. wheat). An invitation extended by Minister Lumley for the visit to Canada by the Korean Minister of Agriculture and Fisheries, the Honourable Ko Kun, has since been accepted and is scheduled to take place in the Spring of 1982. These activities provided an excellent lead into the inaugural meeting of the Canada/Korea Business Council in September 1981 at which the private sector began to explore in detail some of the items outlined above.

The importance of trade in the bilateral relationship was also emphasized during the visit of Prime Minister Trudeau to Korea in September 1981. The Prime Minister held a round-table discussion with Canadian businessmen prior to his official meetings and brought forward each company's individual interests and/or concerns during his discussions with Korean officials. In addition, during his meeting with the Korean President and Ministers, the Prime Minister expressed Canada's strong interest in further sales of Candu's and enhanced co-operation in the nuclear field. He raised the question of access to Korea for wheat and other agricultural products and stated Canada would welcome Korean investment in Canadian resources within FIRA guidelines. The Prime Minister underlined Canadian interest in selling telecommunications equipment and STOL aircraft to Korea and pointed out the advantages of Canadian lumber construction methods. He also visited the site of the Candu reactor currently being constructed in Korea.

The visit resulted in an increased awareness of the possibilities of the relationship between Canada and Korea and provided additional evidence of Canada's awareness of commercial opportunities for both countries.

Trade promotional activities are centred on nuclear reactors, telecommunications, aircraft, energy products and grains. Wheat has the potential to become one of Canada's leading exports to Korea. In addition, Table 14 illustrates past and proposed federally sponsored Trade Fairs and Missions.

Provincial governments have also been active in this market. In the past, there have been several missions from B.C., Ontario, and Alberta which have proved to be successful in uncovering sales and investment opportunities. Alberta has been among the most active, having a sister province relationship with Gangweon. Through this association, Alberta invested considerable time and money in assisting this province to establish and develop its beef cattle industry.

This investment has begun to reap dividends as Alberta companies have received consulting contracts and orders for large quantities of cattle.

2. Financing

Competitive export financing is important for the sale of capital goods to Korea. EDC's activities in the Korean market have been limited in terms of number of loan agreements signed, though not in amount due to the financing of the sale of one Candu nuclear reactor. Since 1971, EDC has signed eight loan agreements in Korea, totalling $606.8 million. Apart from the nuclear reactor sale to the Korea Electric Company, the majority of the loan agreements were signed with the Korean Ministry of Communications for transmission and telecommunications equipment.

During 1980, EDC signed a $68.9 million loan agreement for the sale of switching equipment to the Ministry of Communications. Most recently, in 1981, EDC has signed a $6.8 million loan for the sale of a Boeing 747 flight simulator to Korean Airlines Co. Ltd.

EDC currently has a pipeline of projects under consideration at various stages of development totalling more than $100 million (exclusive of the potential AECL nuclear project). EDC maintains a positive outlook for Korea and has noticed over the past few years that Canadian exporters have become increasingly involved in pursuing business in this marketplace.

As a middle income country, Korea looks to International Financial Institutions (I.F.I.'s) as well as to its trading partners and own financial system to fund its ambitious national development plans. Both the World Bank and the Asian Development Bank have active programs in Korea. Concentration has been in sectors such as water supply, irrigation and sewage, infrastructure, particularly railways and highways, power, and multipurpose loans for development of small and medium industries. For the multipurpose loans, allocation is fully administered by Korean agencies. In general, Korean firms are aided in winning contracts for IFI-financed projects by the preference margins given to suppliers from the recipient country. Therefore, IFI-financed projects have not been a major factor in the Canadian export development effort, although Canadian companies have been successful in gaining contracts.

Tables 15 and 16 list current projects in Korea financed by the World Bank and Asian Development Banks. In order to determine IFI financing plans for the next five-year period, reviews of the Korean economy and 1982-86 Fifth Five-Year Development Plan are to be undertaken during 1981-82.

3. Other Instruments

CIDA Industrial Co-operation Program

Although Korea has reached the status of a newly industrialized nation, it is still eligible for assistance under the Industrial Co-operation program of CIDA. This program has not been widely used in Korea but it does offer the possibility of broadening the degree of co-operation between the two countries. Specifically, the program could be used to: -

i) explore the potential for Canadian firms to establish manufacturing facilities in Korea particularly in one of the duty free areas;

ii) identify suitable joint venture partners for those Canadian companies wishing to establish a presence in this market;

iii) provide experts in various areas of industrial development to the government or the Korea Technology and Productivity Centre and;

iv) supply technical and professional journals to Korean Association organization, etc.

Canadian Executive Service Overseas (CESO)

Several years ago, CESO entered into an agreement with the Federation of Korean Industries, (FKI), which would act as the conduit for locating technical and production executives in Canada. The program proved quite successful, as a number of retired Canadians were placed in local factories. However, the program is not being used as extensively as it might, mainly as a result of Korea's changing industrial needs.

It will be incumbent on the post to identify, with FKI, those areas which will require development assistance in the years to come. Having determined this information, recommendation can be made to reactivate this program.

The Engineer Program at Canadian College of Advanced Engineering Practice (CANCOL)

Working with the Overseas Construction Association of Korea (OCAK) the post was instrumental in placing two Korean engineers in the Canadian College of Advanced Engineering Practices (CANCOL) in Montreal. It is hoped that this program, in spite of some initial problems, will expand in the years ahead.

Association internationale des étudiants de Science économique et commerciales/AIESEC

AIESEC is a student organization that arranges exchanges for summer jobs to expose university students in commerce and economic disciplines to international business. Though this program is not active in Korea, it might be useful to pursuade AIESEC to review the possibility of establishing such a program with Korean universities, as similar programs in other countries have been extremely successful.

Cost Recoverable Technical Assistance (CRTA)

CRTA is a unique program where public sector expertise may be provided a) to foreign countries on a government-to-government and b) to Canadian companies involved in export marketing of capital projects on a cost recoverable basis. In order to improve Canada's performance in marketing Canadian goods and services, the program's two main objectives are 1) to increase market penetration of foreign markets by Canadian firms and 2) to enable developing countries to improve certain sectors of their economies.

F. PRIORITY SECTOR IDENTIFICATION AND SECTOR MARKETING PLANS

The analysis of the Korean market and Canadian trade patterns in that market has identified a number of sectors. These sectors, when matched with Canadian supply capability, demonstrated the greatest potential for growth of Canadian exports. The six product groupings, nuclear reactors, energy products, grains, telecommunications, aircraft, and pulp are the focal points of specific marketing plans which follow. Major capital projects, also high in the priority listing, cross many sectoral boundaries and are, to a large degree, dealt with in addressing the opportunities in the nuclear power and telecommunications sectors.

The above priority sectors, by no means represent the only areas of opportunity for Canadian exports to Korea. As in the past, many of Canada's more traditional exports will continue to grow without the need for government assistance. Exports of potash, aluminum, engines, turbines and parts, industrial machinery and copper ore will continue as a basis of our trade with Korea. On the strength of private sector initiatives, inroads will undoubtedly be made in non-traditional areas as well.

1. Nuclear Reactors

Leadership responsibility for reactor export marketing rests with Atomic Energy Canada Ltd. (AECL). This section therefore attempts to depict the Korean market environment and the current Canadian marketing effort in recognition of the over-riding impact that further reactor sales will have on our commercial and trade relations with Korea.

a) The Opportunity

Since the early 1960s, Korea has emphasized the necessity of increasing electrical generating capacity. Thus, the total capacity has increased by more than 21 times in the period 1961 to 1980 from 360 megawatts (MW) to 9,391 MW. In 1980, the composition of generating capacity was 81.4 per cent thermal, 12.4 per cent hydro and 6.2 per cent nuclear.

The long range electric power program to 1991 calls for a total of 28,163 MW generating capacity, a threefold increase over the 1980 level. Of this, 45.2 per cent will derive from thermal power plants, 13.9 per cent from hydro, 35.9 per cent from nuclear and the remaining 5 per cent from other sources.

The large increased contribution of nuclear power to Korea's total requirements, initiated to reduce its dependence on imported oil, equates to 10,000 MW of nuclear generating capacity by 1991. Of the 13 reactors this figure represents, Korea has one in operation (Westinghouse of the U.S.), six in various stages of construction (1 AECL CANDU, 5 Westinghouse of the U.S.), and two on order (Framatome of France). All of these are light water reactors except for the heavy water CANDU reactor now under construction at Wolsung and all are in the 900 MW class except for the initial three 600 MW size reactors (including CANDU). Orders for the remaining four reactors (roughly 3,600 MW) would be placed within the next two to three years.

By the year 2000, construction of about 40 reactors is forecast which would then fulfill about 75 per cent of Korea's power requirements. Although this program may have to be moderated in the future for economic reasons, any reductions would probably be aimed at the post-1991 program. Even with such potential reductions, Korea will continue to be one of the world's largest competitive markets for nuclear reactors.

b) The Canadian Industry

Canada was one of the first countries in the world to embark on a program of nuclear power generation. The product of more than 30 years of research, the CANDU system has proved its worth with 11 commercial power reactors in operation (nine in Ontario, one in India and one in Pakistan) providing 6,000 MW of installed capacity. The CANDU's record of reliability is outstanding. In 1979 four Canadian reactors ranked in the world's top ten in terms of capacity availability. Insofar as lifetime performance of the world's reactors is concerned, six CANDUs placed in the top ten, with the Pickering #2 unit ranked number one. Studies done by Ontario Hydro have demonstrated that the CANDU, in terms of unit energy cost, is competitive with the pressurized light water reactors (PWRs) which dominate the world market. The CANDU's on-power fuelling system and its use of heavy water moderator and natural uranium fuel offer unique advantages in terms of high reliability, low fuel costs and flexibility in fuel sourcing. The system's safety record is excellent and compares favourably with that of other reactor types. Canada's large uranium reserves, established expertise in the exploration, development and processing of uranium, and the relative simplicity of CANDU fuel fabrication are such that, in selling reactors, Canada is in a more advantageous position than its principal competitors to offer CANDU buyers security of fuel supply and/or self-sufficiency in the entire fuel cycle. Doing so requires a co-ordinated effort from AECL and a combination of uranium mining companies and private sector fuel fabricators.

Some part of the manufacturing and construction cycle is currently underway for 14 Canadian reactors and three export reactors (one in Korea, one in Argentina and one in Romania) with a combined capacity of more than 11,000 MW. By 1983, work will be completed on all but eight of the Canadian reactors.

With the exception of the now undersized Indian and Pakistani reactors, all CANDU export orders have been for the 600 MW product. Economies of scale are such that Canada's principal competitors are increasingly exporting and/or building reactors of 900 MW and 1,200 MW. That notwithstanding, the smaller 600 MW unit does offer greater flexibility. It is more readily married into the moderate size power grids of many countries and when outages occur their relative impact on power generation systems of limited capacity is less severe than for the 900 MW unit.

Atomic Energy Canada Limited (AECL) has spearheaded Canada's research and design effort in nuclear power. The size and importance of Ontario Hydro's nuclear program (which sees roughly one third of its power generated from CANDU reactors) has resulted in that organization also developing its own design for reactors capable of generating 750 MW or 850 MW. Four 750 MW units are in operation (the Bruce A units) and have been performing very well. A further four 750 MW units (Bruce B) and four 850 MW units (Darlington) are under construction - all in Ontario. Hydro's design for the 750 MW and 850 MW reactors is based on their being built in clusters of four units (also true for the smaller 540 MW Pickering units) with the four units sharing common facilities (vacuum building, fuel handling and storage systems, turbine building, intake and outlet structures for cooling water, control centre). This feature and the phased but uninterrupted construction of four units at a time have resulted in economies of scale benefits.

Ontario Hydro (which until 1981 will remain Canada's only operator of CANDUs) has done all its own project management which has meant that AECL and Canadian industry has had to play a sub-contracting role and to rely on export orders and other domestic business (from Hydro Quebec and New Brunswick Power) to build up their project management capabilities for CANDU reactors. A substantial and stepped up CANDU export program will require the effective utilization of all the expertise available from AECL, provincial utilities and the private sector. The smooth progress of construction at the Wolsung CANDU site in Korea is demonstrating that a co-operative Canadian effort works.

The design of the CANDU system permits maximum participation of the Canadian capital goods industry as it does not require the total range of capabilities that only a large fully integrated producer of power generation equipment can offer. This feature of the CANDU design has minimized capital investment requirements and greatly facilitated domestic manufacture (Canadian equipment content of CANDU is roughly 80 per cent), a situation which is attractive to foreign customers interested in technology transfer. It has also perpetuated a fragmentation of the Canadian nuclear manufacturing industry. Together with the dispersion of Canada's nuclear reactor design and project management capability, this poses unique problems and challenges in terms of risk assumption and project management in pursuing export business. Efforts to confront the challenge include the creation of the Organization of CANDU Industries or OCI

(representing the private sector) in June 1979 and the formation of a joint export marketing committee consisting of representatives from AECL, OCI, public utilities and Industry, Trade and Commerce.

There are currently about 60 major Canadian suppliers of equipment to the CANDU system including one or two manufacturers of each of the major components of the system. The companies range in size from 15 to 3,000 employees with approximately two thirds of the firms being located in Ontario and most of the remainder in Quebec. Many are foreign owned but all are free, subject only to government export licences, to export CANDU equipment. With very few exceptions, none of the companies rely exclusively on nuclear business as they are manufacturers and suppliers to a range of machinery user industries. The industry estimates that it is capable of producing the equivalent of 5 to 6 reactors per year. Its current capacity utilization is about 33 per cent.

c) Recent Canadian Marketing Activity and Successes

Under the terms of an agreement signed in 1975 between AECL and the buyer, the Korean Electric Company (KECO), a 600 MW CANDU reactor is under construction at Wolsung with start-up scheduled for 1982. At the request of the borrower, the Economic Planning Board (EPB), EDC arranged financing for Wolsung 1 in two tranches, one signed in January 1976 and the second in May 1979. Construction of Wolsung 1 is proceeding well and all deliveries of equipment and heavy water for the initial reactor load have been made.

Ratification by Korea of the Non-Proliferation Treaty in April 1979 and conclusion of a nuclear co-operation agreement with Canada in January 1979 opened the door for potential sales of further CANDU reactors. During 1980 and the early part of 1981, AECL attempted to capitalize on the substantial advantages to be gained by "twinning" Wolsung 1 and a second CANDU reactor, Wolsung 2. Through retention of the Wolsung 1 team of experienced engineers, managers and workers, it was estimated that Wolsung 2 could be completed in 15 to 18 months less time than the 1,000 MW units purchased from France in 1980. The resulting earlier power generation would reduce Korean dependency on oil imports by an amount equivalent to $1 million/day. A commercial proposal and financing package for Wolsung 2 as a "twin" of Wolsung 1 were therefore presented to KECO in May 1981.

Prior to the presentation of these proposals, the Korean Minister of Commerce and Industry, the Honourable SUH, Suk Joon visited Canada at the invitation of Minister Lumley.

During his visit, Minister Suh met with AECL and toured the Ontario Hydro Pickering nuclear station. The advantage of "twinning" and the excellent safety, operating and reliability record of the CANDU system were emphasized.

As a follow-up to Minister Suh's visit to Canada, Minister Lumley travelled to Korea in June 1981. In his meetings with the Korean Prime Minister, Deputy Prime Minister, Minister of Energy and Resources and the President of KECO, Minister Lumley reiterated the advantage to be gained from the "twinning" of Wolsung 1 and 2. Several factors became clear during the course of this visit.

First, with regard to Wolsung 1, Koreans are generally satisfied with progress achieved and emphasized that on-time completion is important. Second, the commitment to construction of additional reactor units at the Wolsung site was reconfirmed. Third, competitiveness of commercial and financing terms is essential. Fourth, rather than contracting for one 600 MW unit, KECO wants a proposal for a 1,800 MW package with increasing Koreanization. Fifth, the Korean Heavy Industry Company (KHIC) now under the direction of KECO, is currently seeking joint venture partners for the manufacture of turbine-generators in Korea. Finally, Korea remains committed to diversifying sources of supply and type of reactor units to be purchased.

d) Market Impediments and Advantages

The sale of the Wolsung 1 reactor to Korea presents a major advantage as an indication of KECO's knowledge of the merits of the CANDU system. Resolution of some remaining issues and on-time completion of the unit will be crucial factors in sales of further CANDUs. In terms of operation, KECO and Ontario Hydro have signed an agreement for exchange of technological and managerial expertise, which will assist in resolution of any problems that might arise once Wolsung 1 is commissioned.

Other factors which present advantages are as follows. Korea's stated desire for diversification of supply and type of reactors to be purchased gives only limited advantage to Canada in that competitor activity in the market is very strong. Most important in diversification is that the CANDU reactor does not require enriched uranium.

Potential impediments for the Canadian marketing effort are varied. First, the fragmentation of the Canadian nuclear manufacturing industry will make the process of Koreanization and determination of suitable joint venture

partners on both sides challenging to accomplish. Second, Korea has increasingly moved towards purchases of reactor units in the 900 MW size category. At the present time, AECL is prepared to market only 600 MW size reactors. This may affect Canada's ability to sell further CANDUs in the short term, although once AECL's design for the larger units are finalized, Korea still represents a large future market. Third, the large ongoing nuclear construction program in Korea will significantly strain Korean managerial and technical resources and will therefore create substantial competition amongst suppliers for these scarce resources. Fourth, the decision reached on selection of a joint venture partner in the Korean manufacture of turbine generators will affect decisions on future suppliers of the nuclear steam supply system in that adjustment of interfaces may be required.

e) The Competition and Competitor Activity

Competition for nuclear sales in the Korean market is intense. Of the nine reactors purchased to date, six have been awarded to Westinghouse Electric of the U.S., one to AECL and the two most recent to Framatome of France. Conventional equipment, e.g. turbine generators, have been supplied by the British (GEC) and the Americans (Westinghouse). British turbine generators are also being supplied for the CANDU Wolsung 1.

In addition to the above companies, other U.S. companies and Kraftwerkunion (KWU) of Germany have been active bidders for nuclear steam supply systems and suppliers from Britain, Japan and Switzerland for conventional portions.

Diversification of supply and type as well as competitive financing appear to be prominent in the selection of suppliers. It is expected that competition will intensify as the nuclear manufacturing industries of all countries are suffering from excess capacity.

f) The Action Plan

As a result of the clarification of Korean expectations received during Minister Lumley's visit to Korea in June 1981, the task ahead for the Canadian marketing effort lies in completion of competitive commercial and financing proposals for a 1,800 MW package with increasing Korean content. The task will of course continue to be spearheaded by AECL, with assistance provided by the private sector, public utilities and EDC as appropriate. The importance of understanding the climate in Korea cannot be

over-emphasized and in this regard the identification of, and agreement between, suitable partners in both countries will ultimately determine the success of the Canadian effort. In addition, such factors as the timing and extent of technology transfer in the manufacture of CANDU components and training programs for a wide variety of personnel must be taken into account.

Assistance by the government to the Canadian marketing effort will include:

i) Ministerial and senior-level officials visits as appropriate;

ii) Government approvals as necessary in support of commercial and financing proposals;

iii) Monitoring of ongoing developments in the Korean nuclear program and representations to Korean officials, as required, by the post;

iv) Assistance by the post in identification of suitable joint venture partners in Korea for eventual manufacture of CANDU components;

v) Monitoring by the post of competitor activity, particularly as related to joint venture agreements reached, and reports to Canadian industry of potential implications.

2. Energy Products

Korea's rapid economic growth in the latter half of the 1970s was led largely by the development of energy-intensive industries. In 1979 the total energy demand of Korea was the equivalent of 38 million metric tons of oil, of which 29.8 per cent was supplied from domestic energy resources (basically anthracite coal). Of the 70.2 per cent of imported energy resources, oil made up 64.4 per cent, with the remaining 5.8 per cent composed of coal, uranium and others. This heavy reliance on imported oil places Korea in an uncomfortable position, and will undoubtedly continue to place constraints on economic growth. Korea's economic planners have therefore initiated a program to aggressively diversify energy imports away from oil.

On the assumption that Korea's economic growth will be about 8 per cent per annum through the 1980s, the government is projecting that in 1981 the country's energy requirements, even allowing for conservation measures, will reach 83 million metric tons of oil equivalent, an increase of 118 per cent over 1979 levels. As Korea's coal production has peaked (at roughly 18 million metric tons per year) and its reserves are declining, fully 85 per cent of the nation's energy needs will have to be imported. The share of petroleum in the overall energy plan is projected to decline to 41.6 per cent, while other energy products will, by 1991, account for close to 60 per cent of energy consumption. Of most immediate interest to Canada, coal and uranium are slated to take up to 24.9 per cent and 17.6 per cent respectively of Korea's 1991 supply of energy resources. In that time, Canada may thus see itself supplying Korea with about 8 per cent of its imported energy needs. The export opportunities for these sectors are discussed in greater detail below. Korean firms have also shown some preliminary interest in exploring participation in Canada's tar sand projects and in buying Canadian liquefied natural gas.

Coal

a) The Opportunity

The prospects for increased sales of Canadian coal to Korea are tied to the health of the Korean steel industry, the power plant construction program of the Korea Electric Company (KECO) and the efforts of Korean industry, most notably the cement industry, to convert their existing operations to coal generated energy use.

i) Coking Coal

Pohang Iron and Steel (POSCO) has, to date, been the only recipient of Canadian coal shipments to Korea. Canadian producers currently supply more than 25 per cent of POSCO's annual 6.1 million metric tons (MT) coal requirements, with Australia and the U.S., respectively, supplying 50 per cent and 25 per cent. Additional contracts, for which terms have been negotiated but shipments have yet to commence, will raise Canadian sales of coal to 2.1 million MT per year by 1983 or 30 per cent of the company's needs. With the opening of the fourth stage expansion of POSCO's Pohang mill on February 18, 1981, iron and steel production will reach 8.5 million MT. However, the Pohang site has been developed close to its maximum capacity. Prospects for incremental coal sales to the company will be relatively limited until construction of Korea's second steel mill complex receives approval from the government. POSCO will, however, begin immediately a further "mini" expansion of the Pohang mill in an effort to wring another 1.1 million MT capacity out of the plant. This expansion, due to be completed at the end of 1983, will increase production to 9.6 million MTPY and require just under a million extra tons of coal per annum. Should Canada obtain another one quarter of that business, its coal sales to Korea would increase by more than $15 million per year. Other opportunities for supplying the Pohang mill will be limited to possible cancellation of existing contracts with other countries when they expire. As POSCO's experience with Australian suppliers has not been good, there is a real chance that certain contracts may not be renewed and new supply agreements entered into with Canadian firms.

Nonetheless, the second steel mill complex (to be built in four stages of 3 million tons each) offers the most significant prospect for substantial increase in metallurgical coal exports. However, the starting date for construction remains undecided and possibly further away than ever given the recent announcement that the site may be moved from Asan Bay in the northwest to Kwangyong in the extreme south. Another indication of further delay in the second mill is the above-mentioned decision by POSCO to squeeze a further 1.1 million tons capacity out of the existing mill. This extra new capacity could be used to meet increasing demand and still allow for further delay in the second mill. The best

estimate of a construction start for the second mill now stands at 1987, with completion of the first stage in 1990.

PROJECTED COAL DEMAND, POHANG IRON AND STEEL

(000's MTPY)

	1980	1981	1983	1985	1987	1989	1991
Pohang Mill	4,300	6,100	6,100	7,000	7,000	7,000	7,000
Asan Bay and Kwangyong Mill	-	-	-	-	-	-	1,950
Total	4,300	6,100	6,100	7,000	7,000	7,000	8,950

ii) Thermal Coal - Korea Electric Company (KECO)

In the late 1970s Korea Electric, the nation's only utility, embarked on a program of power plant construction designed to meet the spiralling demand for electricity and to diversify away from petroleum as a primary fuel source. This program called for the construction of 13 nuclear, 12 coal-fired, and 12 pumped storage power plants by 1991. In light of the deep and lingering recession of 1980-81, however, this program is being re-evaluated and a number of units may be delayed or dropped. As the contracts for nine of the nuclear plants have already been let, the most likely targets for cutbacks are the coal-fired plants. While KECO's revised plans will not be finally approved until late in 1981, they will probably include cancelling three coal-fired units and delay construction of the remaining coal-fired plants to come on stream in 1988, 1989, 1990 and 1991. Four plants are scheduled to be completed in 1983-84.

KECO has signed contracts for 80 per cent of the coal required to power its initial four plants at Samcheonpo and Gojeong with Canadian firms supplying about 25 per cent of the total. The utility requires an additional 1.1 million tons per year for the Gojeong plants and is currently having difficulty finding suppliers. Since KECO started negotiating for its coal requirements in the late seventies, the market has swung to the advantage of the seller. KECO is having trouble adjusting to this swing and finding it difficult to negotiate

contracts for that final million tons. This requirement therefore provides an immediate market for Canadian companies able to supply coal by 1984.

In addition to the above requirements for the new plants, KECO commissioned a study on the feasibility of converting some of its oil-fired plants to coal. A favourable interim report has been tabled, which, should its findings be confirmed by the final report due in October 1981, would mean requirements of an additional 1.5 million tons per year of coal by late 1983 for these converted facilities.

The figures below are based on the above assumptions dealing with projected power plant construction and go-ahead on conversion of oil-fired stations.

IMPORTED THERMAL COAL REQUIREMENTS,
KOREA ELECTRIC COMPANY

(000's MTPY)

	1982	1984	1986	1988	1990
Coal Requirement	1,125	6,000	6,600	7,200	9,600
Percentage of Requirement Already under Contract	100	66.6	60.6	55.5	41.7

iii) Thermal Coal - The Cement Companies

In the wake of the 1979 oil shock, the Korean government directed the nation's seven cement producers to switch from oil to 80 per cent coal-fired kilns. Initial government projections indicated that the cement industry would grow to an annual production rate of 65 million tons per annum by 1990 and that 8.5 million MTPY of thermal coal would be required to fuel the industry.

However, the recession of 1980 cut domestic cement demand by 16 per cent in one year and left the industry with an inventory of 4.3 million tons, or about 20 per cent of 1980 production. This has resulted in lowering growth projections and hence

potential coal consumption. An increase in capacity and coal demand should not be expected before 1985.

A lack of adequate infrastructure and coal handling facilities is a barrier to a rapid changeover to coal use. Only the two largest companies, Ssangyong and Tongyang, have plants located on the coast. Ground transportation in Korea is both crowded and expensive and the economies of coal use may not be there for those firms located inland. Nevertheless three firms, Hyundai, Asia, and Hanil began experimenting with coal in 1981. Moreover, despite the transportation problems, all seven cement companies should be converted by the end of 1983.

PROJECTED COAL DEMAND, KOREAN CEMENT COMPANIES

(000'S MTPY)

Company	1981	1982	1983
Ssangyong	500	1,100	1,500
Tongyang	480	480	500
Hanil	200	320	390
Hyundai	130	150	150
Asia	190	250	250
Sungshin	170	255	340
Koryo	25	50	85
Total	1,695	2,605	3,215

Tongyang to date has restricted itself to buying on the spot market (mainly from the PRC) while looking for long-term contracts. Only the largest firm, Ssangyong, has to date signed long-term contracts. In fact, the company has already contracted for large tonnage to supply its own needs with American (550,000 MTPY), Australian (250,000 MTPY) and Canadian (750,000 MTPY) suppliers.

iv) Thermal Coal - The Industrial Boiler Market

In a further effort to cut oil consumption the Korean government and at least two of the general trading companies have been studying the possibility of establishing coal distribution centres to serve the industrial boiler market. Between 80 and 90 firms have been identified as being large

enough oil users to benefit from the rather expensive changeover. Interim government documents predict demand will be as follows, assuming conversion starts in 1983.

PROJECTED COAL DEMAND - INDUSTRIAL BOILER MARKET

(000'S MTPY)

1984	1985	1986	1991
570	800	2,520	5,040

The government will probably choose private firms to operate the distribution centres. Early identification of those firms with a serious chance of being selected will be a Post priority.

v) Conclusion

In approaching the Korean market for coal (and to some degree uranium as well), Canadian producers have had, and continue, to face the impact on purchasing decisions of the Korean government's policy (adopted in 1978) to foster Korean offshore investment in resources of vital import interest to the country by providing tax relief, insurance against risk and limited project financing. Allied to that policy is a government effort to involve Korea's large integrated trading companies in resource trade. In approaching the negotiation of traditional long-term supply contracts with the customer, Canadian producers must also address the question of taking on a Korean equity partner and/or availing themselves of the services of a trading company. Through administrative guidance, firms with Korean partners could receive preferential treatment in the market. KECO for example is anxious to invest offshore and has sent letters to about 20 firms in Canada alone requesting whether they have any interesting projects on the drawing board. Further, KECO has limited the contracts for the Samcheonpo and Gojeong power plants to five years so that it will be in a position to switch its coal purchases to mines in which it has an investment in the late 1980s.

The Korean market for thermal coal will continue to remain buoyant in the near future. Korea Electric, the cement industry and possible sales for

industrial boiler use will provide both a short and long-term market and Canadian firms should remain in close contact with these end users. Although the metallurgical coal market is not as promising in the short and medium term as thermal coal, suppliers should keep in touch with POSCO and be prepared to take advantage of the opportunities as they develop.

b) The Canadian Industry

Until 1972 the record of production for all types of coal in Canada was in 1942 when it peaked at 16.2 million MT. This level was maintained until 1950 when production began to decline steadily to the 9 million ton per year level of 1969. During this period a vast change in mining, transportation and marketing for the various types of coal took place. Industrial and domestic heating with oil and gas, plus complete conversion of railways to diesel, had a major influence in the transition.

However, commencing in 1970, the total production turned sharply upward because of coking coal developments in western Canada on the basis of Japanese contracts. In 1980, production for all types of coal was approximately 37 million MT, and estimates for the 1980s are in the range of 60 to 70 million tons per year.

Coking Coal markets are steady at present. Demand has leapt forward in large units. Major expansions are planned based on export contracts for western coking coal.

The economic range for thermal coal is improving with the technical advances in production and transportation as well as the cost of competitive fuels. Several new thermal mines are being developed for the export market. In international trade, thermal coal has great momentum at present. Countries and utilities are diversifying by type of fuel and source of supply. Efficiency and location are major factors in the sourcing of supply.

Over time, Canadian suppliers will play a major role in world thermal coal trade, particularly by companies in western Canada. Delivered BTU value is still the price basis for thermal coals which in Canada can range from lignite in Saskatchewan at 6,500 BTU/pound up to sub-bituminous of 10,500 BTU/pound and bituminous coals of 12-14,000 BTU/pound.

In 1980, Canadian coal was shipped to 18 countries in the Far East, Latin America and Europe as indicated below:

CANADIAN COAL EXPORTS

Country	1980 Million Metric Tonnes	1979 Million Metric Tonnes
Belgium/Luxembourg	-	0.112
Denmark	0.252	0.134
France	-	0.072
Federal Republic of Germany	0.596	0.513
Greece	0.312	0.055
Italy	0.047	0.132
Netherlands	0.032	-
Spain	0.047	0.229
Sweden	0.192	0.163
India	0.234	0.279
Pakistan	0.024	-
Japan	10.450	10.562
Republic of Korea	1.131	0.928
Taiwan	0.156	0.057
Argentina	0.044	0.026
Brazil	0.606	0.424
Chile	0.131	0.049
Mexico	0.028	0.081
St. Pierre and Miquelon	0.007	0.002
United States	0.022	0.033
	14.300	13.800

All shipments were made to the above countries from Vancouver, with the exception of about 600,000 tons of coal which was exported from Nova Scotia. The possibilities for marketing western thermal coal abroad are improving rapidly; however, success still depends largely on transportation costs, both rail and ocean rates. Canadian companies will be continuing to actively seek diversification into new markets in Latin America, Asia, Europe and elsewhere for both coking and thermal coals.

c) Recent Canadian Marketing Activity

Canada's efforts to market coal to Korea date back to the early 1970s when the Pohang steel mill was still under construction. Characterized by private sector initiatives with government support, this activity stepped up considerably when it became apparent that POSCO was a great success. When combined in 1977/78 with Korea Electric's entry into the market for steaming coal, a regular flow of coal company visits to Korea persisted. Coal was beginning to assume considerable importance in Canada-Korea

relations (1980 coal accounted for close to 14 per cent of Canadian exports to Korea). To simultaneously reinforce development and to ensure that Korean buyers and energy policy makers are fully aware of Canada's resource base and are knowledgeable about the coal industry, Canadian coal policies and the supporting infrastructure were outlined through a series of missions. These included an ITC sponsored KECO mission to Canada in early 1978, a mission of Canadian coal companies to Korea later in the year, two visits to Korea (in 1978 and 1979) of the B.C. Minister of Economic Development and one by Premier Bennett in 1979. In rapid succession, 1979 also saw two missions to Korea of B.C. officials to explain B.C.'s coal development policies and infrastructure support programs and a mission to British Columbia, at B.C. government expense, of eight Korean government officials, coal buyers, and trading company representatives. In March 1980, the government of Alberta (where most of Canada's steaming coal reserves are located) also sent a team of officials to Korea to explain that province's coal policies.

d) Recent Canadian Success Stories

Since the mid-1970s, four Canadian coal producers have succeeded in establishing themselves in the Korean market. Kaiser Resources (now B.C. Coal) and Luscar Limited led the way with metallurgical coal contracts. Then, in 1979 and 1980, Shell Canada Resources, B.C. Coal and Fording Coal signed contracts worth more than $450 million to supply KECO with about 25 per cent of the coal that it needs for the Samcheonpo and Gojeong power plants.

B.C. Coal was the first Canadian company to make a statement of faith in the future of the Pohang Iron and Steel Company. Negotiations on a long-term supply contract were begun before POSCO had established itself as a steel company of any significance. Aggressive pursuit of opportunities and a carefully nurtured relationship with the client based on mutual trust, and the recognition that a sale was the beginning of a long-term partnership, have been key ingredients to success. A record of reliable delivery was established and, as POSCO grew, so did the company's sales of metallurgical coal which now account for the vast bulk of Canadian coal deliveries to Korea. B.C. Coal was also quick to recognize the potential impact of the Korean government's 1978 decision to encourage resource development investments abroad. By the fall of 1980, it had concluded an agreement with POSCO to jointly develop the Greenhills mine in southeastern British Columbia.

The agreement specifies that the Greenhills joint venture will be owned 80 per cent by B.C. Coal and 20 per cent by POSCO with pro-rata contributions of capital and operating costs. B.C. Coal will build and operate the mine and will receive appropriate compensation for these services. Estimated capital cost of the mine (which will have an initial rated capacity of 1.8 million metric tons per year) and coal preparation plant is $200 million. The agreement also provides for delivery to POSCO of 500,000 metric tons of coal per year for 20 years.

Another Canadian company, Fording Coal Limited, has also been successful in penetrating the Korean market for both metallurgical and steaming coal. Fording's first sale into Korea occurred in October 1979 when a contract was concluded to supply Korea Electric with 200,000 metric tons per year of steaming coal starting in 1982. This contract occurred after more than a year of arduous negotiations and many trips to Korea. Price competitiveness and a reputation as a reliable supplier of metallurgical coal to Japan helped win this contract. Other factors to which Fording attributes its success include the patience and persistence spent in developing a friendly working relationship with KECO personnel, the selection of a Korean partner who helped Fording develop an understanding of the Korean way of doing business and of the functioning of KECO and the Ministry of Energy and Resources to which it reports. In early 1981, Fording also achieved its first breakthrough in the market for metallurgical coal. In the mid-1970s, POSCO had contracted for all its coal requirements taking into account its projected expansions through to 1982/83. Despite this, Fording visited POSCO personnel regularly and established a friendly relationship with POSCO thus developing credibility as a potentially good supplier. When, in 1980, labour problems in Australia were causing concern at POSCO, Fording (at some risk to its inventory position) was able to help POSCO out of a supply problem. This "spot" shipment proved the quality acceptability of Fording's coal. Fording subsequently concluded a 15 month contract for 250,000 MT of high volatile coal and has most recently successfully concluded negotiations for a long-term supply contract for both high volatile and Fording standard coal.

e) Market Impediments and Advantages

The principal impediments that Canada faces in the Korean market relate to the location of Canada's coal deposits and the relatively narrow range of metallurgical coal types found in Canada. Western Canadian coal mines are

generally located 600 to 800 miles from the coast. Thus, while competitive at the mine site and facing no disadvantage in ocean freight, the cost of inland freight makes Canadian coal more expensive than that of the principal competition.

The cost disadvantage is strongest for steaming coal which fetches a lower price than metallurgical coal and hence carries a proportionately larger freight burden. Rising Australian coal prices and a better Canadian record of supply, at a time when diversifying energy sources makes sense, are helping to reduce this disadvantage.

While some Canadian steaming coals do not meet KECO's specifications, the impact of a lower than preferred specification requirement is strongest in metallurgical coal. Most Canadian metallurgical coals are of the medium and to a lesser extent low volatile variety. This has limited our ability to compete in the attractive market for high volatile coal. In January 1981, Fording Coal made the first breakthrough in this sector of the Korean market and should be able to build on that success.

f) The Competition and Competitor Activity

Competition in the Korean metallurgical market comes mainly from the Australians and the Americans whose respective market shares are about 54 per cent and 20 per cent. The KECO steaming coal market to date has been split 75-25 between Australia and Canada whereas the cement companies have purchased from China, Australia and the United States and most recently, Canada.

In the last year, Korean end-users have expressed growing disenchantment with American and Australian sources of supply. The Australians are seen to be strike-prone and unreliable. POSCO was nearly forced to shut down last year because of late deliveries of Australian coal. Furthermore, shipping delays from the United States are also causing concern. Canada, which once had the image of being a very high cost supplier, is now seen to be very competitive and reliable in light of Australia's rapidly increasing prices.

The cement companies, Tongyang in particular, have explored mainland China as a supplier, and Tongyang purchased all of its 1980 requirements from that source through the spot market. Although China is offering excellent quality coal at a very competitive price, supplies are becoming very difficult to acquire as the Japanese are pursuing this source vigorously. In addi-

tion, Korean management is attempting to restrain trade with China. Tongyang's parent trading company, for example, offers the firm 180 day financing on coal shipments which require more than 10 days sail to Korea (i.e. North America and Australia) and only 90 days for shipments taking less than 10 days (i.e. China).

Competitors are also taking Korean equity partners (POSCO has invested in American and Australian coal mines) and engaging in much the same kind of promotional activity.

g) The Action Plan

Canada's coal companies are among the most aggressive and active of Canadian exporters in Korea. For these reasons, the assistance that government can usefully provide to them is limited. The evolutionary state of Korean offshore investment policies and purchasing practices, the speed with which new Korean policies can be implemented, the entry into the coal market of Korea's cement companies, the growing importance of coal in Canada-Korea trade and the increasingly political nature of the world's energy trade, suggest that there is room for a useful government role. It is therefore proposed that:

i) the embassy in Seoul provide up-to-date reports to Canadian coal companies and the government on changing Korean coal demand, investment policies and buying practices;

ii) ITC support Canada's coal export efforts by continually updating its coal market surveys;

iii) a delegation of buyers and traders from Korea's cement companies and general trading companies visit Canada.

Uranium

a) The Opportunity

The large nuclear power construction program outlined in the previous section will create good opportunities for sales of uranium. It is estimated that by the beginning of 1986 this program will create an annual uranium oxide (U_3O_8) requirement of about 1,361 metric tons, a figure which rises to 1,978 metric tons by 1991. At today's low Nuclear Exchange Company (Nuexco) prices of U.S.$25 per pound, there is an annual market (before further processing of the uranium oxide) of about U.S.$75 million by 1986 and U.S.$108 million by 1991.

As is the case with coal, Korea Electric and Korea's general trading companies (GTCs) have, with government encouragement, shown interest in offshore uranium exploration and development activities. The GTCs have also indicated a desire to be involved in uranium imports. KECO has to date entered into uranium exploration joint venture agreements in Paraguay and Gabon. Its principal interest is not in grass roots exploration, but in participating in the development of already discovered deposits. Canadian companies wishing to sustain a long-term position in the Korean uranium market would be wise to keep close track of this interest and of the Korean government's policies to encourage Korean offshore uranium investment. There is little doubt that mines with Korean development capital will receive priority treatment in the Korean market.

With respect to the processing of uranium oxide into fuel bundles for CANDU operation, the Korean government in 1979 established the Korea Nuclear Fuel Development Institute (KNFDI) and charged it with acquiring this technology. The KNFDI has in turn contacted the relevant Canadian manufacturers.

b) The Canadian Industry

As shown in Table A, 1980 output of uranium in concentrate totalled 6,368 tonnes valued at about $683 million. All but a small portion of this output came from mines operated by six companies - Agnew Lake Mines Limited, Denison Mines Limited, Madawaska Mines Limited and Rio Algom Limited which operate mines in Ontario and Eldorado Nuclear Limited and Gulf Minerals Canada Limited which operate mines in Saskatchewan. A by-product operation at Calgary, Alberta, owned by ESI Resources Limited, recovered a small amount of uranium from phosphoric acid production and some uranium was produced by AMOK Limited, which commenced mining its Saskatchewan Cluff Lake orebody late in the year. Of the producing mines, the most important are the mines operated at Elliot Lake, Ontario by Denison and Rio Algom and at Rabbit Lake and Uranium City, both in Saskatchewan, respectively by Gulf Minerals and Eldorado Nuclear. The product sold by the mines is concentrate, often referred to as "yellow cake". This product can be sold directly to overseas customers or it can go through a refining stage at Canada's only refinery at Port Hope, Ontario, operated by Eldorado Nuclear and sold as uranium hexafluoride (UF_6) or as a natural ceramic-grade uranium dioxide (UO_2). Consideration is being given to the construction of a second refinery in Saskatchewan.

Currently, output at the Elliot Lake mines of Denison and Rio Algom is being expanded. A portion of this increased output will be available for export as will some of the production by AMOK Limited and by Saskatchewan Mining Development Corporation which is bringing the Key Lake, Saskatchewan property into production in 1983.

TABLE A

URANIUM OUTPUT IN CANADA BY PROVINCE, 1979 AND 1980[1]

	1979		1980P	
	(Tonnes) U	$	(Tonnes) U	$
Ontario	4,005	375,793,251	4,275	413,481,000
Saskatchewan	2,525	240,375,133	2,093	224,236,000
Total Canada	6,530	616,168,384	6,368	637,717,000

Source: Energy, Mines and Resources

[1] Shipments of uranium (U) in concentrate from ore processing plants; one metric ton of elemental uranium (tonne U) is equivalent to 1.2999 short tons of uranium oxide (U_3O_8).

P Preliminary

Canadian uranium reserves are large, and Canadian production levels, under optimum conditions, could increase to some 13,000 and 15,300 tonnes a year by 1985 and 1990, respectively. Canada would thus appear to be in a good position to take advantage of increased demands abroad, as annual domestic requirements are estimated at about 1,500 and 2,000 tonnes a year in 1985 and 1990, respectively.

Table B provides an indication of the importance of various countries as importers of Canadian uranium. It indicates that uranium under export contracts to Korea totals 1,910 tonnes. Of this amount, 1,603 tonnes are accounted for by an agreement concluded in May 1980 between Rio Algom and KECO for delivery over the period 1981 to 1990.

TABLE B

URANIUM UNDER EXPORT CONTRACTS
REVIEWED SINCE SEPTEMBER 5, 1974[1]

(As of December 1980)

Country	Short Tons U_3O_8	Tonnes U
Belgium	1,220	938
Finland	2,300	1,769
France	2,000	1,538
Italy	1,800	1,385
Japan	25,358	19,507
Republic of Korea	2,483	1,910
Spain	6,250	4,808
Sweden	1,178	906
Switzerland	200	154
United Kingdom	10,000	7,693
United States	15,640	12,032
West Germany	8,299	6,384
Total[2]	76,728	59,024

Source: Energy, Mines and Resources

[1] Reviewed and found to be consistent with Canadian uranium export policy.

[2] Totals have been adjusted to reflect new contracts and reported changes in quantities and delivery schedules.

c) Recent Canadian Marketing Activity

Until about mid-1978, Canadian uranium producers were either fully committed elsewhere for the output from their existing production facilities or were too early in the development stages of new discoveries to entertain anything other than spot sales to Korea. One such sale for the initial fuel load for the CANDU under construction at Wolsung was realized in 1977. Towards mid-1978, drastically reduced demand conditions in the U.S. and progress in developing new Canadian discoveries were such that several Canadian companies (the Norcen Energy Resources/E and B/Lacana Group, Eldorado Nuclear and Rio Algom) responded to information on KECO's uranium requirements.

As contact was established with KECO, discussion with all three groups on long-term contracts began. This was immediately preceded by the visit to Canada in the summer

of 1978 of two officials from KECO's Fuel Department. Their program in Canada was devoted exclusively to meeting with uranium producers and allowed them to obtain an initial understanding of the Canadian uranium scene. Korea Electric was also made aware of the longer term supply contracts that could be made available to it should it purchase additional CANDUs.

d) Canadian Success Stories

By mid-1980 Rio Algom and Eldorado Nuclear both concluded 10-year supply agreements with KECO that will see Canadian uranium supplied to Korea from 1981 through 1993. During that time period these contracts will see Canada's share of the Korean market fluctuate between 14 and 30 per cent. Allowing for price and currency movements, the uranium oxide to be delivered to Korea should exceed $250 million. Further processing would increase that amount substantially.

Canada's established position as a major exporter of uranium and the proven international track record of both Rio Algom and Eldorado Nuclear played important roles in securing the above contracts. Price considerations were paramount, however, and both companies demonstrated that they could compete, even in a declining world market.

Recent events indicate that KECO is not the only purchaser of uranium. The Korean Energy Research Institute has begun to contract for uranium for experimental purposes. The volume could reach as much as 30 million tonnes annually. Eldorado has quoted on this requirement.

e) Market Impediments and Advantages

Korea has insignificant uranium reserves, eventual mining of which would be more justified by national security than by economic considerations. There are no impediments facing Canadian uranium exporters in the Korean market place. While well recognized as a major uranium exporter, strong competition in the Korean market does not permit Canada any particular advantages in selling to KECO.

f) The Competition and Competitor Activity

KECO is deliberately pursuing a country diversified uranium procurement strategy concentrated on American, Australian and Canadian suppliers. Based on contracts signed to date, it would appear that, with some year to year fluctuations, each country will obtain roughly one

third of KECO's requirements. Price competitiveness and a reliable delivery record will determine whether one country gains advantage over another.

g) The Action Plan

The private sector will continue to lead the way in increasing Canadian uranium oxide sales to Korea. Price competitiveness and keeping on top of market developments in Korea will be the key ingredients of success. This applies particularly to eventual Korean initiatives to substantially increase their offshore investment activity. The emerging role of Korea's general trading companies in resource imports will also bear watching. The Canadian nuclear reactor marketing effort in Korea can also be positively supported by Canadian actions in the areas of longer than average uranium supply contracts and the transfer of CANDU fuel fabrication technology to Korea. The growing magnitude of Canadian uranium exports to Korea, together with the inevitable and increasingly political nature of energy trade, also suggests that Canada would be wise to ensure that the relevant Korean authorities have a full appreciation of federal and provincial rules and regulations governing the exploration for and mining and export of uranium. With these considerations in mind, it is therefore proposed that:

i) the Post prepare a report on what action (and within what time frame) can be expected from KECO and the general trading companies in terms of offshore exploration and development activity. This report would also focus on the future role of Korea's GTCs in uranium imports;

ii) representatives from the Korean Ministry of Energy and Resources, KECO, the Korea Nuclear Fuel Development Institute and the GTCs visit Canada to be briefed on Canadian uranium policies. The mission would include visits to the uranium producing areas and would involve briefings with the relevant provincial governments;

iii) the Post to monitor KECO's uranium needs and advise Canadian producers of any new supply opportunities.

For further information contact the Resource Industries Branch (613) 992-0088.

3. Telecommunications

a) The Opportunity

Apart from Pusan and Taegu, virtually all Korea's telecommunications facilities were destroyed during the Korean War. Initial refurbishment in the post-war era relied almost totally on imports but growth of domestic manufacturers of electronics in the early 1970s enabled local supply to play an increasingly important role. The Five-Year Telecommunication Development Plan, formulated in conjunction with the Fourth Five-Year Economic Development Plan (1977-1981), encouraged domestic firms in the manufacture of telephones, switching systems and transmission equipment through joint ventures or technical licensing agreements with leading foreign manufacturers.

Telephones in service have increased at an average annual rate of 15-20 per cent since 1967 but reached only 2.5 million units or 6.4 per 100 population by the end of 1978. The chronic and growing backlog of waiting subscribers - officially 598,000 applicants as of September 1980 - coupled with a need to rationalize both domestic production and the induction of foreign technology have led the government to embark on a massive telecommunications network expansion. Ministry of Communications (MOC) estimates that call transmission technology will play a key role in achieving the target of 9 million lines in service by that date. Imports of telecommunications apparatus (SITC Code 724) averaged $175.8 million between 1975 and 1979 and reached $164.1 million in the first six months of 1980.

Korea's domestic manufacturing base in telecommunications is reasonably well-developed in the older technologies (e.g. Strowger and EMD) and is growing rapidly. In mid-1980, the government decreed a restructuring of the industry designed to avoid duplication of investment, particularly with respect to technology transfers from offshore. The MOC is emphasizing digital technology in switching and transmission systems and will therefore rely heavily upon imported equipment in the early phases of the expansion program. However, over the medium term, only those foreign suppliers committed to "localization of production" will be able to sustain a position in the Korean market.

A major element of the telecommunications expansion program will be to bring adequate telephone service to the rural sector. A rural switching program, involving as many as 600,000 lines by 1986, is currently in the

advanced planning stage. Two technologies - one Canadian - are under evaluation, and a Korean firm, Oriental Precision Co., has been designated as the domestic manufacturer. MOC's decision on this program is expected by the end of 1981, though funding shortfalls may force some delays in implementation.

Long haul transmission has been dominated by wire and coaxial FDM cable carrier systems (domestically produced) and microwave radio carrier systems. The pulse control modulation (PCM) approach is now recognized as the most cost effective for the future and the MOC plans to install more than 400,000 channels by 1985. PCM is also scheduled to be the principal carrier system in the inter-office trunk networks.

Korea has two fixed communication satellite stations and one portable backup unit. While no further installations are planned until 1983/84, the MOC may undertake a feed antenna retrofit to raise one unit to Intelsat V specifications.

The explosive demand for the telecommunications services in Korea has also led the government to encourage indigenous capabilities, especially in digital systems, by means of a major R&D program under the Korea Telecommunications Research Institute (KTRI). Current KTRI projects include: TDM local electronic switching, D-4 channel banks, microwave PCM radio, optical fibre communication and data transmission networks. Considerable opportunities exist for leading offshore suppliers to become involved in these fields at an early stage by working with the KTRI.

b) The Canadian Industry

Canada is well recognized as a leader in advanced telecommunications. Responding to the demands of an affluent society and the world's second largest country in territory, telecommunication companies have made Canada self-sufficient in telecommunications. Currently there are three major microwave networks using many interconnecting spur microwave links across Canada. This system also includes more than 100 satellite earth stations, which play a crucial role in joining many communities through the country. In 1980, an 8 GHz digital radio system was incorporated to over build on the existing Trans Canada Telephone System's 4 GHz analogue system between Toronto and Calgary.

With the launching of the ANIK A series of satellites in 1972, Canada established the western world's first geostationary domestic satellite communications system. Three satellites of this version have provided communication services to 10 million square kilometres in Canada. Since ANIK A, a second, third and fourth series of satellites have either been built or are under development in collaboration with U.S. and European industry. Most of the world's commercial communication satellites carry some form of Canadian mechanical and electronic sub-systems. In co-operation with the U.S. National Aeronautics and Space Agency, Canada is developing and manufacturing the vital Remote Manipulation System (RMS) for the space shuttle transportation system.

Canada has had its own national digital data networks since 1973 when DATROUTE was introduced into the Trans Canada Telephone System (TCTS). Introduction of the Inforswitch and Datapac packet followed in 1977. These in turn linked into U.S. systems and should in time, form part of an integrated network for voice, data and visual services across Canada and into the United States. Today, Canadian manufacturers and system companies are involved in the design and development of some of the most sophisticated information processing services.

Many high frequency (HF, VHF and UHF) mobile radio systems are manufactured in Canada and provide an ever-increasing number of commercial and public services. These systems involve mobile stations, base stations and portables. There is a growing demand for mobile radio telephone systems that interface into telephone networks which provide access from coast to coast. In Alberta, Alberta Government Telephone (AGT) operates the world's largest integrated mobile radio telephone service consisting of 24,000 mobile units hooked up to some 400 base stations. The Alberta private sector also has more than 30,000 mobile units in service.

There are numerous fibre optic field trials and experimentations underway in Canada involving industry, governments and numerous carriers of which Bell, AGT, B.C. Telephone and Manitoba Telephone provide consulting services. Alberta Government Telephone, for example, has already begun installing a fibre optic network that will carry some 30,000 voice circuits over 50 kilometres. When in operation, it will be one of the largest high capability fibre optic links in the world with a life expectancy of 30 years. A similar program being undertaken by Saskatchewan Telephone will provide about 32,000 kilometres of fibre optic communications.

c) Recent Canadian Marketing Activity and Successes

From 1969, Canada supplied more than $30 million in EDC loans to Korea for the procurement of microwave equipment. In 1978, a Canadian company signed a co-production agreement valued at $15.5 million for a microwave network. Additional orders have been placed and the company should continue as the pre-eminent supplier in this field over the medium-term.

More recently, in December 1979, Northern Telecom became the successful bidder for a PCM carrier equipment contract valued at $81 million. Close co-operation between the firm, the embassy and the Export Development Corporation enabled Northern to stave off its leading international rivals in a competition contested at the highest government levels. This is Northern's largest offshore contract ever. Contract negotiations have been long and difficult due to numerous system architecture changes requested by the MOC. Initial procurement is worth about $60 million. Concurrently, Northern is actively pursuing the rural switching business and is about to deliver a pilot DMS-10 system, possibly a DMS-100 system, to the MOC for comparative evaluation with a Stromberg-Carlson unit. If selected for this program, Northern will be poised to capture the lion's share of a rural switching market estimated at several hundred million dollars. Of longer-term potential is Korea's data communications network, a project under study by KTRI for implementation in the 1982-84 period. Northern has made a submission based on its SL-10 technology and Gandalf Data visited Korea recently to discuss opportunities for data transmission modems.

As Korean telecommunications equipment manufacturers develop their capabilities in the latest technologies, a growing market is emerging for sophisticated components. Mitel and Erie Technological are making good, steady sales in Korea and have considerable room to grow.

d) Market Impediments

Government protection of Korean telecommunications equipment manufacturers is the largest single market impediment. Import restrictions range from a virtual ban on elements of PABX systems (due to domestic manufacture) to administrative guidance which ensures a substantial and expanding role for Korean firms in the telecommunications expansion program. In most cases, future business prospects for Canadian firms will be a function of their ability to form sound working relationships with Korean manufacturers.

The entrenchment of other suppliers - notably Siemens, ITT/BTM, NEC and Jujitsu - creates additional barriers apart from the competition element. First, Korea's network is a hodgepodge of competing technologies which create enormous interface and system architecture problems. Second, Canadian telecommunications firms and capabilities are less well known and therefore more effort is required simply to establish supplier credibility.

Korea's massive market size and subscriber habits may also impede Canadian suppliers. For example, the rural market may require a switch with minimum capacity of 25,000 lines while usage patterns boost this figure closer to 100,000 lines. This is unusually large by North American standards and special equipment adaptations will be necessary. Similarly, space problems in urban centres will likely call for special transmission media, e.g. optical fibre, and firms unable to commercialize such new products rapidly may be excluded from the market.

For the major products, financing becomes a critical factor in successful bidding. Given the 30 per cent devaluation of the Won, coupled with Korea's balance of payments problem, competitive financing has taken on even more significance especially since other financing institutions show signs of becoming more aggressive.

e) The Competition and Competitor Activity

On the switching side, two technical tie-ups have until recently dominated the domestic market: a 1962 agreement between Oriental Precision and Nippon Electric for the manufacture of Stowger switching equipment, and a 1964 agreement between Gold Star Tele-Electric and Siemens for the importation and gradual localization of EMD automatic switching systems. (Production of these systems is given in Table D). However, predatory pricing practices, new technology developments, slow localization for EMD and explosive growth in network demand induced the Korean government to consider new measures to cope with the increasingly critical shortage of telephone supply. Thus, measures were implemented to introduce stored program controlled switching systems, D-4PCM carrier equipment and related peripherals.

After lengthy and fierce competition carried to the highest political levels, the Metaconta 10CN of ITT/BTM was selected in October 1977 to be manufactured and supplied in Korea. Local production was undertaken by the Korea Telecommunications Company (KTC), then a Crown

corporation, and the first 20,000 line units were installed in Seoul by November 1979. Projections for supply of this type of switching system to 1986 are contained in Table E. It must be noted, however, that relations between ITT/BTM, KTC and MOC have not been smooth and the transfer of technology has taken longer and cost more than expected. Considering the continuously soaring demand for telephones in Korea, MOC therefore decided to introduce the so-called second type for ESS.

Once again, the bidding was hotly contested up to and including the level of heads of state. Western Electric emerged the victor and has recently signed a contract for 40,000 lines in the Seoul area. As noted in Table E, estimated potential for this system is in the neighbourhood of 2.7 million lines. However, MOC is redesigning system architecture as it goes and therefore the final allocation of the switching business to ITT/BTM and Western Electric cannot be accurately predicted. A more recent estimation is as follows:

TABLE C

PROJECTIONS OF AUTOMATIC SWITCHING SYSTEM SUPPLY

(1981-1985)

Year	System Type Total (1000's of lines)	Strowger	ESSIA	MIOCN	Rural
1981	800	300	250	240	-
1982	1,100	200	400	400	100
1983	1,100	100	450	450	100
1984	1,150	50	500	450	150
1985	1,300	-	650	450	200

Source: MOC & private estimate

Stromberg Carlson is actively pursuing the rural switching program in direct competition with Northern Telecom. The firm's longstanding relationship with the Korea military gives it some sway with the present regime but product and present corporate difficulties may mitigate against Stromberg Carlson's selection. More important is the question of switch size: the first firm to demonstrate a proven, fully digital switch with the appropriate capacity will hold the pole position in this competition.

Speaking generally, Western Electric, ITT/BTM and Northern Telecom are the favoured foreign suppliers. It appears the Japanese, Siemens, Ericsson and GTE will be virtually shut out of participation in new projects in Korea. Apart from specific contract related activities, Western and ITT maintain large technical and sales staff in Korea and participate with PR-type presences in Korean exhibitions such as the Korea Electronics Show and Enkor '80. ITT/BTM has also been actively supported by the Belgian government although all competitors have relied on government representations at one time or another.

f) The Action Plan

i) A co-ordinated government - Northern Telecom program should be implemented as soon as possible in support of the DMS-100 or the DMS-10 for the rural switching program. The program should include: further detailed investigation of how the DMS-10 and the DMS-100 can best be applied to meet Korean requirements; a follow-up by technical representations to the technical seminar in Korea on the DMS-100 and other member of the DMS family; early development of EDC's financial support package; strong government representations to MOC, MCI, EPB and other government agencies at senior levels; encouragement of a Korea telecommunications mission to Canada;

ii) ITC support for a comprehensive seminar on data communications involving Canadian manufacturers;

iii) ITC support for a Spar Aerospace seminar on earth satellite station technology focussing on feed antenna retrofit;

iv) Issue an invitation to the Korean officials to visit Canada to reinforce the marketing activities of Canadian firms with products applicable to the military telecommunication market.

For further information contact the Electrical and Electronics Branch at (613) 593-4481.

TABLE D

PRODUCTION OF AUTOMATIC TELEPHONE SWITCHING EQUIPMENT

(Unit: 1,000 lines)

Year / System	1962	1967	1972	1977	1979	G. Total (accum.)
GSTE (EMD)	-	43.5	40.1	167.4	210.8	1,246.0
OPC (Strg)	1.3	18.5	16.7	110.0	150.0	751.3
Sub-Total	1.3	62.0	56.8	277.4	360.8	1,997.3

TABLE E

SUPPLY PROGRAM OF AUTOMATIC SWITCHING SYSTEM

(Unit: 1,000 lines)

Year / System	1979	1980	1981	1982	1983	1984	1985	1986
1) ESS								
ESS-1	20	360	350	400	500	660	660	660
ESS-2	-	40	300	400	500	500	500	500
ESS-3	-	-	-	-	10	60	190	340
1) EMS	360	360	340	301	150	30	0	0
TOTAL	380	760	990	1,101	1,160	1,250	1,350	1,500

4. Cereal Grains, Oilseeds and Products

a) The Opportunity

Traditionally seen as an agricultural country, Korea has undergone rapid industrialization over the past two decades. However, government policy remains oriented to strengthening agricultural production through such measures as price supports for end products, rural development programs, subsidized fertilizer prices, and introduction of new seed varieties. These government programs have resulted in relative self-sufficiency in rice and barley, but at some cost to the Korean economy. Production of wheat and rapeseed continues to fall short of demand. Korea, therefore, continues to be a major importer of grains and oilseeds with 1980 imports of rice, wheat, corn, soybeans, sorghum, rapeseed and flaxseed exceeding $650 million. Except for flaxseed, all imports are subject to strict import licensing control by the Ministry of Agriculture and Fisheries (MOAF).

Wheat and rice are substituted to a certain degree in some Korean dietary uses, and wheat imports tend to fluctuate inversely with the domestic supply of rice. Wheat imports in 1979 totalled 1.07 million tonnes, making Korea the third largest wheat market in Asia after China and Japan. The majority of wheat imports are supplied by the U.S., some on concessional terms, with a small quantity provided through the World Food Program. The sole organization authorized to import wheat for human consumption is the Korean Flour Mills Industrial Association.

The prospects for Canadian sales of barley to Korea hinge on the adoption of barley as a feed grain. All feed grain is imported by the National Livestock Co-operative Federation. Through its buying and reselling operations to the members of the Korean Feed Association (KFA), the Federation aims to stabilize the price to feed millers. The permissible level of feed grain imports is established annually by the MOAF on the basis of expected supply and demand conditions. Barley as a feed grain is not currently on the list of permissible feed grains, and therefore the Korean import market for feed grain is exclusively corn. Korean imports of corn in 1980 totalled 2.3 million metric tonnes which were used mainly for feed. Substantial economic gains of the last 19 years have been reflected in an annual average growth in meat consumption of approximately 10 per cent. From 1975 to 1980, per capita meat consumption increased by more than 86 per cent to about 11.2 kilograms. Given the Korean

policy to promote self-sufficiency in meat production, demand for feed grains can be expected to grow steadily. Nonetheless, the current economic slowdown has stabilized formulated feed production at the 3.5 to 4.0 million tonne range.

In recent years, Korean beer consumption has increased at a substantial rate, reaching about 17 litres per capita in 1979 (as compared to 39 litres per capita for Japan in 1978). Despite a 10 per cent drop in beer consumption in 1980, the longer term trend is upward probably in excess of 15 per cent per annum. Until 1978 Korea was essentially self-sufficient in malt production although it generally relied on imported malting barley for more than 35 per cent of its malting barley requirements. Although 1978 malting barley and malt production fell short of demand, by 1979 Korean domestic production of malting barley had increased and only 2,976 tonnes of malting barley were imported in that year. Malting capacity has also expanded from 35,000 tonnes to 54,000 tonnes in 1979 and to 83,000 tonnes in 1981. A stated objective of MOAF is to achieve self-sufficiency in both malt and malting barley production by 1985. Korea is a large and traditional barley producer, but the anticipated rate of growth in beer consumption is expected to outpace malting capacity by about 15,000 to 20,000 tonnes, at least until 1985.

Most of the 586,667 tonnes of oilseeds imported by Korea in 1980 were soybeans from the U.S. The total did include 16,000 tonnes of Canadian rapeseed and 750 tonnes of flaxseed. Korea does produce some soybeans and rapeseed; 216,000 and 28.6 thousand tonnes respectively in 1980.

The Korean objective of self-sufficiency in meat production will likely see the demand for formulated feed, including protein supplements such as rapeseed meal, grow steadily. If current levels of formulated feed production are maintained, annual use of protein supplements will approximate 482,000 tonnes. Of this, authorized imports would be approximately 40,000 tonnes - a market of roughly 6.6 million dollars. About half of this amount could consist of rapeseed meal imports. Until 1979 the KFA was the only authorized importer of protein supplements but since that time individual feed millers have been granted the right, subject to MOAF approval, to import their own requirements. However, few individual feed manufacturers will have sufficient volumes to justify importing protein supplement on a direct basis.

b) The Canadian Industry

The major Canadian cereal grains in order of commercial significance are wheat, barley and corn. Annual wheat production ranges around 18-20 million tonnes and barley and corn average about 10.5 million tonnes and 5 million tonnes respectively. Canada produces 5 oilseed crops: in declining order of magnitude - Canola (rapeseed), flaxseed, soybeans, sunflowerseed, and mustardseed. Canola, a superior form of rapeseed developed in Canada, is the dominant oilseed crop with production ranging upward to 3.5 million tonnes.

In volume terms, wheat dominates Canada's export trade in grains and oilseeds. Exports of wheat including durum account for approximately 60 per cent of production and in 1979-80 reached a level of more than 15 million tonnes. Barley exports averaged 3.8 million tonnes over the past 10 years, 400,000 tonnes of which was malting barley. Rapeseed exports in 1979-80 established a record at almost 1.8 million tonnes.

Wheat flour exports have been stable over the past 10 years, averaging 650,000 tonnes annually. Barley malt production capacity in 1981 is 567,000 tonnes per annum. Malt exports have been growing steadily in recent years and reached 236,000 tonnes in 1980. Increasing quantities of rapeseed (Canola) oil and meal are being exported with volumes in the past 10 years approaching 200 million tonnes of each.

The major government agencies involved in the marketing of Canadian grains and oilseeds are the Canadian Wheat Board (CWB) and the Canadian Grain Commission. The Canadian Grain Commission is responsible for quality control of grain and for the supervision of its handling. The Canadian Wheat Board is the sole export marketing agency for prairie wheat, oats and barley. Export sales are either negotiated directly by the Board or through grain exporting companies acting as its agent. Other crops such as rye, rapeseed, flaxseed, buckwheat and mustard are marketed by the private grain trade. An important promotional agency is the Canadian International Grains Institute (CIGI), 60 per cent funded by Industry, Trade and Commerce (and 40 per cent by the CWB), with ITC/GMO representation on the Board of Directors. CIGI is designed to help maintain and enlarge markets at home and abroad for Canadian grains, oilseeds and their products, and offers instructional programs to foreign participants selected from countries purchasing these commodities and to Canadians associated with the grain industry.

With recent improvements in the handling and transportation system bearing fruit, attention in the grains and oilseeds industry is focusing on the capacity of the grain production base to rise to the challenge of future markets. The CWB has projected that future market demand will present an opportunity to export 30 million tonnes by 1990 (as compared to 22.3 million tonnes in 1979-80). These projections are generally accepted as realistic targets from a marketing and production point of view.

c) Recent Canadian Marketing Activity

Numerous high level representations have been made to the Korean government emphasizing Canada's desire to establish a grain trade with Korea and highlighting the advantages of a diversified import sourcing policy.

The Canadian Wheat Board and the Canadian International Grains Institute (CIGI) have made regular visits to Korea. In addition, Korean officials have participated in CIGI's familiarization courses on the world and Canadian grain industry. In November 1979, CIGI organized a five-day Canada/Korea grain symposium in Seoul. The Korean Flour Mills Industrial Association (KOFMIA) successfully test milled a variety of Canadian wheats that resulted in a demonstration of their superior cleanliness and acceptability to Korean millers in 1979. Ongoing market development efforts have included a visit by high level officials of the Korean Ministry of Agriculture and Fisheries to Canadian grain loading and handling facilities and grain producing areas under the auspices of the Canadian Wheat Board.

Canadian efforts to interest Korea in adopting barley as a feed go back many years. In 1974, the Canada Grains Council jointly with Seoul National University and the Korean Institute of Science and Technology sponsored feed trials lasting several months demonstrating the utilization of Canadian barley and rapeseed meals as feed for Korean swine and poultry. The findings of these trials positively demonstrated the feasibility of using barley and rapeseed meal as Korean feed ingredients and were presented to the Korean feed and livestock producing communities at a feed grain seminar held in Seoul in 1975 co-sponsored by the Canada Grains Council and the Korean Feed Association. As well, Canadian government officials and ministers have seized every opportunity to encourage the Korean government to seriously consider adopting barley as a feed grain.

Korea's malt import levels prior to 1978 were very small although there were some imports from Canada and elsewhere. Since that time Canadian malt manufacturers have visited the market and have quoted regularly on Korean business. Canada was successful in winning about 30 and 40 per cent of Korea's imported malt business in 1978 and 1979, and 21 per cent in 1980.

By virtue of Korea's import restrictions on oilseeds and products, Canadian business has been limited to sales of Canola/rapeseed (with the oil derived from the crushing of that seed required to be re-exported) and to irregular Canola/rapeseed meal business obtained by bidding on Korean Feed Association's international tenders. These activities have seen Canada supply Korea with $5.3 million (14,160 tonnes) of rapeseed in 1980 and $10.5 million (38,152 tonnes) in 1979.

d) Market Impediments and Advantages

The 1981 tariff on wheat was 5 per cent on any amount over 1.1 million tonnes. This amount is revised each year according to the wheat and flour supply and demand projections prepared by MOAF with KOFMIA. Since Korean wheat production is well below annual demand, it appears that the Korean market holds good long-term potential for Canadian wheat. However, realization of this potential hinges on a Korean decision to diversify purchases and buy wheat on a commercial basis.

While year to year crop fluctuations take place, Korea is basically self-sufficient in production of barley, the country's major winter crop and an important source of farm income. In Korea, barley is used exclusively for human consumption and its prices to the end user are heavily subsidized. Government campaigns to encourage human consumption of barley have existed for some time and originated in the desire to reduce rice consumption, a crop in which Korea has traditionally not been self-sufficient.

The Korean government is apparently reluctant to adopt barley as a feed grain. The reasons allegedly include the concern that imported barley to be used for feed could find its way into the black market for human consumption, combined with the potential embarrassment to the government that could arise from feeding barley to animals when it has for so long required Koreans to include it as a staple in their diet. However, Korean feed millers have expressed the view that their industry has grown to the extent that it no longer makes sense (from both an

economic and nutritional standpoint) to rely almost exclusively on imported corn as a feed grain. Korean corn imports for feed purposes are duty free, whereas barley imports face a 5 per cent tariff. Nonetheless, tariff barriers to barley imports will remain irrelevant until the larger above-noted questions of using barley as a feed are answered.

Imports of malt and malting barley are strictly controlled by the Ministry of Agriculture and Fisheries which establishes an annual combined import ceiling for the two products based on production levels, inventories, malting capacity and beer consumption. Brewers are allocated a share of the total import ceiling and are then free to import up to that amount of either malting barley or its malt equivalent. The 1980 ceiling for malting barley was 59,000 tonnes (or 46,000 tonnes of malt) and for 1981 has been set at 29,000 tonnes (23,000 tonnes in terms of malt). Malt imports are dutiable at 50 per cent and malting barley at 40 per cent. These tariffs significantly reduce but do not eliminate the price advantage enjoyed by Canadian maltsters over Korean producers. Korea aims to be self-sufficient in malt and malting barley production by 1985.

Canadian rapeseed has never enjoyed the same access as U.S. soybeans to the Korean market. Redressing this situation is a long-standing Canadian concern going back many years, and numerous representations on the subject have been made. On January 1, 1979, the tariff for both soybeans and rapeseed was lowered to 20 per cent although the governmental requirement that oil derived from the crushing of imported rapeseed be re-exported (which does not apply to soybeans) was left in place. The soybean tariff was subsequently temporarily lowered to 10 per cent as part of the government's efforts to lower food inflation while tariff for rapeseed was left untouched. This temporary tariff level which was to have been in effect for only six months remains in place.

The major stumbling block to liberalizing access for rapeseed is Korean reluctance to expose a small (albeit declining) number of high cost domestic producers of rapeseed to international competition. In addition, Korea's large soybean crushers who have access to relatively inexpensive imported soybeans are reluctant to allow potential rapeseed crushing competitors to gain similar access to inexpensive imported rapeseed.

With respect to rapeseed meal, Canada enjoys tariff parity (3.4 per cent) with soybean meal. Import licences for rapeseed meal must still be granted by the MOAF which

establishes an annual import ceiling based on projections of the annual food and feed supply and demand and on domestic meal supplies. Korean buyers (i.e. the Korean Feed Assoc.) only purchase on a spot basis and usually with little advance notice. Spot purchases work against Canadian suppliers since supplies of rapeseed meal are not maintained in forward positions on the Canadian West Coast. It appears that improved prospects for Canadian rapeseed meal will have to await de-regulation of the Korean feed industry and the feed import process. A first step in that direction was taken in July 1980 when the government removed price controls on formulated feed.

e) The Competition and Competitor Activity

The history of American aid and military support has placed American wheat suppliers in a dominant position in the Korean market. Highly concessional PL. 480 agricultural credits are expected to come to an end in 1981. Canada is able to match the U.S. on commercial terms of three years or less. Once the Korean market is opened, Canada will also probably face strong competition from Australia in obtaining a share of the market.

The U.S. is at present the only supplier of feed grains (corn) to Korea. The U.S. Feed Grains Council maintains an office in Seoul and runs regular programs promoting their product and its utilization. One to three-year credits either supplied or guaranteed by the U.S. government also finance large portions of Korea's corn imports. For FY 1980 U.S. credits for the purchase of corn totalled U.S.$82 million. Australia has been active to some degree in the Korean market attempting to promote the use of barley as a feed grain.

Canada's principal competitor for malt sales to Korea is Australia. With 1978, 1979 and 1980 shipments of 12,470 tonnes, 23,833 tonnes and 25,569 tonnes, Australian maltsters held 49 per cent, 47 per cent and 74 per cent of the Korean market not reserved for domestic production. Malt producers from other countries (notably France, Belgium, Denmark and the U.S.) competed among each other for a further 5,000 tonnes of business in each of those years. The increase in Canada's market share from 31 per cent in 1978 to 42 per cent in 1979 was therefore achieved at European and American expense. In 1980 Korea imported 34,697 tonnes of malt of which Australia supplied 74 per cent, Canada 21 per cent and other countries the remainder. As is the case with Canada, the marketing efforts of Canada's competitors have been characterized by private sector initiatives andn direct contacts with Korea's brewers.

The U.S. supplies Korea with all its imported soybeans and usually soybean meal requirements. Canada is the only exporter of rapeseed to Korea. Our only competitor for the Korean rapeseed meal market is Pakistan which on the strength of lower prices and faster delivery, but lesser quality, supplied all the Korean Feed Association's 1980 import requirements (6,238 tonnes) and the bulk of the 1979 import requirements (25,000 out of 29,289 tonnes). Price and delivery considerations continue to take precedence despite Korean recognition that Canadian rapeseed meal is a much superior product. The current expansion of Korean soybean crushing capacity to 2,855 tonnes per day (from 1,855 tonnes) will reduce import requirements for protein supplements and thus competition will intensify further.

f) The Action Plan

Many Korean decision makers are now reasonably familiar with Canada's capability as a wheat exporter. As the PL 480 program draws to a close, renewed effort by Canada is appropriate to obtain some diversification in sources of Korean wheat imports. The Canadian Wheat Board and the Canadian International Grains Institute should continue their current market development activities. Also Canadian government representations to the Korean authorities on wheat access should be sustained.

The economic and nutritional benefits of barley as a feed grain should continue to be brought to the attention of Korean users and appropriate government agencies. The Canadian International Grains Institute can perform a valuable role by maintaining representation from the Korean feed industry in the program of courses. The Canadian Wheat Board during its visits to Korea should also maintain contact with the Korean feed milling industry.

Canada has established a firm foothold in the Korean barley malt market. However, Korean self-sufficiency targets for 1985, if achieved, will likely eliminate Canada and other exporters from the market. At a minimum, it is suggested that whenever Korean and Canadian trade ministers meet that Canada express its satisfaction with the development of a malt trade over the last three years, a trade which it hopes will continue to grow.

The steady decline of Korean domestic production suggests that the day should not be too far away when Korean authorities will be prepared to grant Canola rapeseed equal access with soybeans. Price and quality advantages

of Canadian rapeseed vis-à-vis Korean rapeseed should make the Canadian product attractive to Korean crushers. Accordingly, Canada's representations for equal access conditions should be intensified.

Plans are underway to investigate the potential for sale of Canola rapeseed meal in Asian markets. Any short-term sales of Canadian rapeseed meal to Korea hinge on improving delivery performance by maintaining meal stocks in a forward position in Vancouver. For the longer term Canada must await de-regulation of the Korean feed industry and promote preference for Canadian rapeseed meal by moving Canadian rapeseed into the market at every reasonable opportunity.

For further information contact the Grain Marketing Office at (613) 996-8322.

5. Aircraft

a) Opportunity

The Republic of Korea Forces (ROK) are the largest users of fixed and rotary wing aircraft with a total inventory of approximately 1,250 aircraft (See Table K). Given the history of American involvement, the Korean market for aircraft is highly dominated by American suppliers particularly since, following the Korean war, the U.S. has provided Korea about $6 billion in military aid.

Currently, there are approximately 100 civilian aircraft registered in Korea of which 60 are fixed wing (See Table 17). Korea Air Lines (KAL) the nation's flag carrier is the largest operator with 44 aircraft in inventory plus 12 light trainers. Asia Aero Survey, the country's leading utility air services contractor is next with 15 aircraft. On the civilian side, utility press transport aircraft take second place with a total of 16 aircraft operated by several of the nation's leading daily newspapers and wire services.

KAL provides the only scheduled domestic air service and operates at a loss because of artificially low passenger tariffs imposed by the government. The Hapdong Corporation, previously known as the Hapdong News Agency is rumoured to be considering the establishment of a second domestic airline, however propositions of this type have been circulating unsuccessfully for years. Government agencies such as the Korean National Police (KNP) and the Office of Forestry (OOF) now operate a few helicopters and have possible requirements for fixed wing aircraft.

For reasons of austerity, executive aircraft are few in Korea and have been officially discouraged by the government. Only seven aircraft could be listed in this category. Yet the rapid growth and diversification of overseas business may create a market for long range executive jets by the mid to late 1980s. In addition, there is potential for the sale of a STOL commuter air service from Seoul to outgoing areas.

b) The Canadian Industry

The Canadian aerospace manufacturing industry has a broad based capability varying from research, development, through to the production of aircraft and related components. Inplant repair, over-haul of aircraft, engines and components, space related equipment and air

and ground based avionic systems have received world-wide recognition. There are approximately 100 companies in this sector with ten major companies dominating 60 per cent of total production. Sales for 1980 totalled $2 billion and generated employment of 45,000 people. Approximately 80 per cent of these sales were for export. Although military sales are significant, 65 per cent of sales were for commercial purposes. In terms of Canadian exports of transportation equipment, the industry ranks second after motor vehicles, parts and accessories. Indeed, the aerospace sector is one of Canada's leading sectors in advance technology.

Companies comprising the Canadian aerospace industry can be regarded in three tiers (See Table 18). The first group consists of companies with an integrated capability to design, develop, manufacture and market complete aircraft and accessories. The three major companies in this category are de Havilland (DHC), Canadair (CL) and Pratt and Whitney. The second tier is composed of companies which specialize in fully engineered proprietary products in repair and over-haul as well as in major component production on a sub-contract basis. The majority of these firms are subsidiaries that have developed selected product lines with sole responsibility in the corporate structure for these products.

The third group is made up of 80 companies whose main business is in aerospace products and services. Generally, they operate on a sub-contract basis for the first two tiers. Their annual sales are less than $1 million each with notable exceptions as Standard Aero in Winnipeg and Heroux Limited in Montreal.

c) Recent Canadian Marketing Activity and Successes

Although de Havilland Aircraft of Canada Ltd. (DHC) has been represented in Korea since 1969, business was limited to spare parts for the 40 odd DHC-2 Beavers left by the Americans following the Korean war. However, with the recent change in agents, DHC has entered into the keen competition for a multi-aircraft procurement by the ROK Army Special Forces. Two flight demonstrations for the DASH 7 and DHC-6 Twin Otters have placed DHC in an excellent position given the withdrawal of a major competitor.

The Hapdong Corporation is currently securing quotes from DHC for a DHC-6 Twin Otter. It is hoped that this sale will be the first of many, especially if Hapdong's plans to establish a second domestic airline materialize.

Long-term prospects for DHC's Buffalo aircraft as a C-123 replacement appear in fine form. DHC is anxious to promote the Buffalo, which currently is in excess supply. Another long-term opportunity lies in jet aircraft on short routes, the DASH 7 or 8. This fuel efficient turbo prop STOL aircraft provides a solution to Korea's energy problem and transportation needs. In addition Canadair has also pursued opportunities for the Challenger but the market is extremely limited: at present there are only two Cessna Citations and a Falcon 20 in Korea. Slower economic growth will also serve to limit growth in demand for business jets during the next few years.

During the recent B.C. Aviation Support Industry Mission visit to Korea, substantial Korean interest in amphibious aircraft was once again evident. Viking Air of Victoria had lengthy discussions with the Korea National Police about the Grumman Goose of which Viking has several rebuilt versions for sale. Viking's rebuild program reportedly gives the aircraft substantial Canadian value-added. The low purchase price may make this an attractive alternative for some of the applications outlined above.

d) Market Impediments

A major factor is the American dominance of the Korean market. For the following reasons, the American influence will be felt for some time:

i) interoperability and logistics support are two principal themes;

ii) the recent Reagan reaffirmation of U.S. commitments to Korea;

iii) ROK Forces are fundamentally biased towards American equipment by training (many are sent to the U.S.), by experience and by order (the Joint Forces Command);

iv) the United States will continue to monopolize co-production agreements such as the Hughes 500 MD program and the Northrop F5 program as Korea seeks to build up a domestic aerospace manufacturing capability.

However, Canada's close defence association with the U.S. coupled with specialized aircraft clearly places Canadian manufacturers in a better position than other non-U.S. competitors. The small size of the Korean market does limit opportunities for Canadian suppliers in two main

categories: executive jets and amphibious aircraft (Challenger and CL-215). This impediment is expected to prevail until the mid-1980s when both corporate and government customers should be in a better position to explore alternatives to the rotary-wing and light fixed wing aircraft on which they now rely.

e) The Competition and Competitor Activity

Canadian aircraft have few direct competitors in the Korean market. The most significant challenge has been the Spanish CASA 212, handled by Korean Air Lines (KAL), in competition with the DHC-6 Twin Otter for procurement of approximately 20 aircraft by the ROK Army. CASA and KAL co-ordinated two visits to Spain by top-level military decision-makers and conducted an aircraft demonstration in October 1980. Fortunately, the aircraft operations units prefer the Twin Otter and CASA has had difficulty in keeping its price in the range indicated at the outset of discussions. Current indications are that the ROK army may initially purchase two CASA while re-evaluating a number of candidates for the larger procurement. Other potential competitors such as Dornier, Short and Nomad have not yet been active in Korea.

The second most significant competition for Canadian aircraft comes from helicopters -- principally Bell and Hughes -- as these provide "cheaper" alternatives for VIP transport, search and rescue, fire fighting and general utility applications. Hughes has a joint manufacturing program with KAL for the 500 MD series. Bell is represented by United Industries International and to date has sold 178 units in Korea. Both will continue to supplant Canadian suppliers until Korean customers are in a position to justify the higher capital outlay for Canadian aircraft. This largely depends on the priority assigned to specific tasks such as fire fighting, VIP transport and coastal surveillance and an appreciation that Canadian aircraft are best suited to undertake these roles.

In the executive aircraft field, Cessna, Gulfstream and the helicopter manufacturers (including Aerospatiale) have been the most active. As the economic and political climate has not supported the concept of overseas travel in private aircraft only helicopters have achieved any degree of market penetration. When the market begins to mature about the mid-1980s, Canadair can expect substantial competition from Falcon, Gulfstream and Mitsubishi. The Challenger's exceptionally long range should prove a major selling feature vis-à-vis the competition.

f) The Action Plan

i) Top priority will be given to assisting DHC in its efforts to win a contract with the ROK Army by maintaining close contacts with the agent, JUSMAG-K and the end user;

ii) As soon as the ROK Air Force consents, a Buffalo demonstration should be organized to prove its cost effectiveness as an alternative to the much more expensive C-130;

iii) Contacts with Korean Air Lines regarding its possible requirements for STOL airliners for domestic service (DHC-6, -7 and -8) and for corporate jets (Challenger and Challenger E) will be sustained. Similar liaison should be maintained with Hapdong Corp. should they emerge as an approved domestic air service operator and with large corporations re their business jet requirements;

iv) The Post will advise Canadair of any new developments regarding the CL-215 water bomber aircraft potential.

For further information contact Transportation Industries Branch at (613) 995-3201 or Defence Products Branch at (613) 995-8491.

TABLE K

IMPORTS OF AIRCRAFT BY COMMODITY AND COUNTRY

Value: U.S.$

1. Helicopters for military purpose (CCCN 8802.0301)

Supplier	1980 (10 months) Qty	1980 (10 months) Value	1979 Qty	1979 Value	1978 Qty	1978 Value	1977 Qty	1977 Value
France	3	2,075						
U.S.	15	11,458,044	7	5,613,041	102	1,599,062	1	82,137
Total	18	11,460,119	7	5,613,041	102	1,599,062	1	82,137

2. Other helicopters (8802.0399)

Japan	1	2,796,074	-					
U.S.	227	1,384,955	23	2,557,941	4	2,550,294	4	793,131
Venezuela	1	130,589						
Total	229	4,311,618	23	2,557,941	4	2,550,294	4	793,131

3. Airplane of turbo-propeller type (aircraft of an unladen weight exceeding 2,000 kg but not exceeding 15,000 kg) (8802.0502)

U.S.			1	318,617				
Spain	1	1,325,240						
Total	1	1,325,240	1	318,617				

4. Airplane, aircraft of an unladen weight exceeding 15,000 kg (8802.0699)

France			3	71,670,383	4	117,827,935	1	19,185,092
W. Germany			1	32,065,788				
Japan	2	17,011,081						
U.S.	7	227,603,638	13	270,544,578	6	63,411,142	2	11,145,624
Total	9	244,614,719	17	374,280,749	10	181,239,077	3	30,300,716

*5. Ground flying trainers for military purpose (8805.0101)

France			6	144,109
W. Germany			600	175,058
U.S.	12	1,756		
Total	12	1,756	606	319,167

6. Pulp

a) The Opportunity

From 1970 to 1979 the Korean paper industry recorded average annual gains in production in excess of 14 per cent thus attaining a 1979 production level of 1,594,000 MT, more than three times what it was at the beginning of the decade. The industry currently consists of 140 mills with a total production capacity of 1,845,000 MT. In 1980, Korea produced 1,680,025 MT of paper - a growth of only 3.6 per cent over 1979 and an output equivalent to about 88.7 per cent of installed capacity. Korea's major expansion plans for new paper mills have been postponed; nevertheless the paper industry is expected to grow at 8 per cent per year, or 3 million MT within the next 5 to 10 years. There is every indication that increased Korean demand for paper will, as in the past, be reserved for the output of Korean mills which operate securely behind a 40 per cent tariff. The challenge facing this largely family owned and capital poor industry will be to expand by moving to efficient world-scale plants now justified by the growing size of the Korean market.

Korea's forest resources are negligible and barely cover the growing needs of Korea's pulp producers. The Korean attempt during the 1970s to build up a straw pulp industry was unsuccessful and the four mills built have since been closed down. Therefore, Korea's paper industry is heavily reliant on imported fibre. Since the 1974 oil crisis, use of wastepaper has soared. Indeed, Korea is a world leader in wastepaper usage. Wastepaper as a percentage of total raw materials jumped from 29.8 per cent in 1971 to 64.7 per cent in 1979. Despite this, Korea's imports of groundwood pulp jumped from 5,907 MT in 1976 to 31,161 MT in 1980. Over the same time frame chemical pulp imports increased from 256,681 MT to 414,839 MT. Korea's 1980 pulp imports (see accompanying chart) were valued at U.S.$223.4 million whereas Canada's 1980 pulp exports to Korea totalled U.S.$43.9 million, 19.7 per cent of the market in terms of value.

Security of raw material supply has in the last three years become a major preoccupation of the Korean paper industry and the Korean government. Korea's government-owned Dong Hae Pulp Company Ltd., the only chemical pulp mill, has expanded its capacity by 50 tons per day to 350 tons per day of bleached kraft, thereby meeting about 20 per cent of Korea's chemical pulp requirements. Pulp and Paper International magazine placed The Dong Hae mill's production costs at a high U.S.$400 per ton and concluded

that it may not therefore make the Korean paper industry more efficient. Based on domestic wastewood and imported lauan hardwood chips from Southeast Asia, it will however provide a domestic pulp source. One hundred thousand tons per year of hardwood chips are also imported from Australia under a ten-year contract. As a hardwood mill the Dong Hae plan does not offer a product directly comparable with the softwood pulp being imported from Canada. For security of supply reasons, however, consideration is currently being given to doubling the Dong Hae mills' capacity, adding a softwood pulping line by 1985. The decision to proceed will hinge on whether Dong Hae can secure contracts for an additional 200,000 to 400,000 ton per year of wood chips from abroad.

A number of Korean paper companies, including the Ssangyong Paper Manufacturing Company (Korea's largest producer of sackkraft) and the Saedae Paper Company (Korea's largest newsprint producer) are also, with government encouragement, investigating the prospects for investing in pulp mills overseas. Tongyang's interest is in a 200,000 TYP UKP or BKP mill (in which Dong Hae Pulp might also participate) whereas Saedae wishes to secure 80 TPD of thermo-mechanical pulp from a joint production facility offshore. Contacts have been established with potential partners in Chile, Australia and Canada.

In the first half of 1979 the Korea Paper Manufacturers Association (KPMA) prepared a projection of Korea's pulp requirements up to 1983 by which time the KPMA envisaged domestic consumption almost doubling. Slower than anticipated economic growth should reduce the KPMA's 1983 demand projections for pulp by about 15 to 20 per cent. The trend should nevertheless remain a rising one that will leave room for increased pulp supply from Canada. The extent of any increase in Korean pulp imports will of course depend on ultimate demand growth and on the decision to proceed or not with an expansion of the Dong Hae mill. Projections are as follows:

CONSUMPTION TREND OF PULP

Unit: 1,000 MT

	1979	1980	1981	1982	1983
Domestic Production (A)	139.3	167	284	300	315
Ground Pulp	139.3	137	184	195	210
Chemical Pulp	-	30	100	105	105
Imports (B)	444.9	453	489	528	570
Ground Pulp	10.3	12	13	14	15
Chemical Pulp	434.6	441	476	514	555
Total Consumption (A-B)	584.2	620	773	828	885
Ground Pulp	149.6	149	197	209	225
Chemical Pulp	434.6	471	576	619	660
Self-Sufficiency Ratio					
Ground Pulp	93.1	92.1			
Chemical Pulp	0	6.4			

Korea has traditionally purchased its pulp on the spot market. The local agents of Korea's pulp suppliers therefore play an important role in providing up-to-date market information, obtaining and forwarding requests for tender and following up on sales. Security of supply considerations and the now substantial needs of the Korean paper industry are creating an emerging interest in long-term pulp supply contracts.

b) The Canadian Pulp and Paper Industry

The forest products industry is one of Canada's leading industrial sectors in terms of sales, employment, export earnings and regional dispersion. Moreover, it is the economic mainstay of numerous single-industry communities located throughout Canada. About 300,000 workers are directly employed in the harvesting and processing of Canada's forest resource. At the national level, this sector accounts for about 14 per cent of the labour force in manufacturing, 14 per cent of total value of manufacturing shipments and 18 per cent of Canada's total export earnings.

In the pulp and paper sector of the industry there are more than 86,000 employees, producing goods valued at $10 billion. Exports in 1979 amounted to $7.2 billion, 11 per cent of total Canadian exports of all products.

The earnings of Canadian pulp and paper companies in the past two years have reflected a strong demand for their products in a period of world recession, comparing favourably with competitors in the United States and Scandinavia. These earnings have provided companies with the financial resources for massive capital programs for modernization and productivity improvement and growth - aided in many cases by federal government modernization funding programs. According to a recent Canadian Pulp and Paper Association survey, more than 80 per cent of cash available to companies is being ploughed back into more modern equipment, energy conservation and pollution control to meet world competition in the 1980s.

Annual Productive Capacity

The Canadian Pulp and Paper Association annual capacity survey indicates that the rate of capacity increase for the next two years will be substantially higher than has been the case for some years. Increased growth will occur in British Columbia followed by Quebec and Ontario.

In 1979, 6.998 million metric tons of pulp were shipped and 7.202 million metric tons shipped in 1980. During the first half of 1980, wood pulp (chemical paper grades) operated at 92 per cent capacity compared to 90 per cent in 1979. It is very likely the present favourable demand/supply balance for market pulp will deteriorate in 1981. The extent will depend on a number of factors:

i) The depth of any decline in the world production of paper and paper-board; a slight drop of 1-2 per cent in 1981 would have marginal impact on the demand for market pulp; a more dramatic decline of 4-5 per cent would have serious consequences reminiscent of the collapse in the demand and price structure for market pulp during the 1974/75 period.

ii) Although five new market pulp mills worldwide started up in 1980 and will contribute to increased supply in 1981, no new mills are expected to come on stream in 1981. However, there will be some mill closures, particularly if a prolonged slump materializes. Even in the current market conditions, pressures exist to close certain mills for financial or environmental reasons.

iii) Since the price for market pulp is generally quoted in U.S. dollars, the relationship between the U.S. dollar and the currencies in many consuming

countries such as Japan, West Germany, France and Italy has a significant bearing on the demand for market pulp.

iv) Close to 60 per cent of Canada's capacity for paper-grade chemical market pulp will be affected by labour negotiations in 1981. Some production could be lost as a result of labour disruptions.

c) Recent Canadian Marketing Activity and Successes

Canada's west coast pulp producers have been supplying the Korean market on a spot basis for many years. Most companies are represented by local agents and some are now beginning to enter into longer term pulp supply contracts with Korean buyers. These experienced exporters visit the market regularly and have not needed Canadian government assistance in their Korean marketing efforts. With more than 27.6 per cent of the imported pulp market in 1980, Canada is Korea's second largest supplier.

The Canadian government's efforts to improve Canada's share of the Korean pulp market have centred on encouraging Korean companies interested in making offshore pulp mill investments to fully explore the prospects for such ventures in Canada. Two ministerial level missions from British Columbia (headed by the Ministers of Economic Development and of Forestry in 1978 and again by the Minister of Economic Development in 1979) also promoted that province as a site for possible Korean pulp mill investments. In addition, in March - April 1980, ITC sponsored an eight-man mission of Korean paper industry representatives to Canada. The mission was composed of executives from six Korean paper companies (including two with offshore pulp mill interests), one official from the Ministry of Commerce and Industry (MCI) and the chairman of the Korean Paper Manufacturers Association. The Mission, whose primary objective was to familiarize its members with Canadian capability in the manufacture of pulp and paper machinery and the engineering of pulp and paper plants, also allowed the Korean side to meet potential Canadian pulp mill partners. While in Canada the mission received a full briefing by the B.C. government on its policies supporting the further development of the B.C. pulp and paper industry.

H.A. Simons successfully bid to carry out with Ssangyong Paper a UNIDO financed study for MCI on how Korea might best meet its unbleached kraft pulp requirements.

d) Market Impediments and Advantages

Korea's import regime is administered in a manner that will reserve a share of the Korean pulp market equal to domestic pulp production. To the extent that Korean production is increased, the share of the Korean market open to competition from Canada will diminish. On July 1, 1981 a new regulation was put into effect for bleached kraft pulp; whereby importers would be required to purchase amounts of locally-produced pulp equivalent to the volume of imports; previously, the regulation had required 50 per cent level of local purchase rather than 100 per cent. Korean pulp importers must also pay a tariff of 10 per cent on the CIF value of their purchases, plus a 10 per cent value added tax and a 2.5 per cent defence tax.

In future, as Korean companies invest in offshore pulp mills, imports from these sources will receive priority either as a result of intercorporate policy or through government intervention. This will clearly have an impact on future levels of Canadian exports to this market.

e) The Competition and Competitor Activity

Korea's principal pulp suppliers in 1980 were as set out in the following table:

PULP IMPORTS TO KOREA - 1980

CCCN 47.01	1979 Quantity (MT)	1980 Quantity (MT)	1980 Value (U.S.$ CIF KOREA)	1980 Market Share (%) (By Value)
TOTAL	441,310	446,000	223.4 million	100%
Canada	87,570	81,052	43.9 million	19.7
U.S.	101,924	154,111	75.8 million	33.6
Japan	70,141	85,261	42.9 million	18.9
Chile	41,638	41,843	17.8 million	7.9
Sweden	32,660	28,814	11.9 million	5.3
Swaziland	24,206	10,943	4.6 million	2.0
Brazil	20,546	11,987	6.1 million	2.7
New Zealand	13,567	28,471	10.0 million	4.4
Other	49,058	120,476	12.2 million	5.5

The principal competitors have remained basically the same for some years. Their marketing activities have also been characterized by direct contact with end users working through a local representative where appropriate. The case of New Zealand is an interesting one, as an important

portion of its sales to Korea would be from the Winstone-Samsung Pulp Company joint venture pulp mill in New Zealand. That is a 68,000 ton per year TMP plant from which Chonju Paper (A Samsung group subsidiary) takes an important share of production.

Once Korean overseas investment intentions surfaced, the Australian and New Zealand governments endeavoured, in much the same fashion as Canada, to promote their countries as a logical source for Korean investment.

g) The Action Plan

Future domestic pulp demand and the cash flow of Korean companies will be critical determinants of when Korean offshore investment in pulp mills will take place. Equally important will be the Korean government's decision on how actively to encourage such investment and what linkages if any to establish with the ownership or operation of the Dong Hae Pulp Mill. Chip supply remains critical to that company's future. Given the impact that the above developments will have on the Korean market for Canadian pulp it is proposed to:

i) encourage Canadian pulp suppliers, especially those located in the west, to join the Canada-Korea Business Council (CKBC).

ii) Monitor Korean pulp mill expansion plans (both offshore and in Korea) and advise accordingly;

iii) Assist the agents of Canada's pulp suppliers to secure long-term supply contracts with local end users and to participate in the government's stockpile plan (1981 stockpile for chemical pulp is estimated at 50,000 MT);

iv) Encourage Canadian pulp and paper manufacturers to license production in Korea. Dominion Eng. Co. has had discussions with Daewoo Group and Halla Resources Co. which have investment plans in Papua New Guinea.

For further information, contact the Resource Industries Branch at (613) 992-0065.

III. TABLES

TABLES 1 - 21

TABLE 1

SECTORAL COMPOSITION OF KOREAN GNP

(Current Prices)

	1962	1975	1978	1979	1980	Projected 1986*
Agriculture, Forestry and Fishery	36.6	24.9	21.9	20.6	16.9	14.8
Mining and Manufacturing	16.5	28.0	28.4	28.5	30.7	35.0
Social Overhead and Other Services	46.9	47.1	49.7	50.9	52.4	50.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: Korea Exchange Bank, Monthly Review

TABLE 2

KOREAN EMPLOYMENT STRUCTURE PERCENTAGE OF EMPLOYED PERSONS BY INDUSTRY

	1975	1976	1977	1978	1979	1980	Projected 1986*
Agriculture, Forestry and Fishery	45.9	44.6	41.8	38.4	35.8	34.0	27.1
Mining and Manufacturing	19.1	21.9	22.4	23.2	23.8	22.6	25.2
Social Overhead Capital and Others	35.0	33.6	35.8	38.4	40.4	43.4	47.7
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
TOTAL POPULATION (Thousand persons)	35281	35860	36436	37019	37605	38124	41839
TOTAL LABOUR FORCE (Thousand persons)	12340	13061	13440	13932	14206	14454	16948

Source: Bank of Korea, Monthly Economic Statistics

* Projected in the Fifth Five-Year Economic and Social Development Plan 1982-86, Economic Planning Board.

TABLE 3

KOREAN GNP PERFORMANCE

	1975	1976	1977	1978	1979	1980	Projected 1986*
Real Growth (%)	8.3	15.5	10.3	11.6	6.4	-5.7	7.6 (ann. avg.)
TOTAL GNP (U.S.$ million at current prices)	18760	25089	35168	47350	60066	57620	90000 (1980 prices)
Per Capita GNP (U.S.$ at current prices)	532	700	965	1279	1597	1506	2170 (1980 prices)

Source: Bank of Korea, Monthly Economic Statistics

* Projected in The Fifth Five-Year Economic and Social Development Plan 1982-86, Economic Planning Board.

TABLE 4

KOREAN WAGE PRICE AND PRODUCTIVITY PERFORMANCE

Index	1975	1976	1977	1978	1979	1980
Nominal Wages	100	134.7	180.2	242.5	305.5	384.9
Labour Productivity	100	107.5	118.7	132.9	151.5	165.1
Real Wages	100	115.5	139.8	163.7	177.7	-
Consumer Price	100	115.3	127.0	145.3	171.9	221.3
Wholesale Price	100	112.1	122.2	136.5	162.1	225.2

Sources: Bank of Korea, Monthly Economic Statistics
Korea Exchange Bank, Monthly Review

TABLE 5

KOREAN BALANCE OF PAYMENTS

(U.S.$ Million)

Payments Basis

	1975	1976	1977	1978	1979	1980
Exports	5,003	7,815	10,047	12,711	14,705	17,212
Imports	6,674	8,405	10,523	14,491	19,100	21,972
Trade Balance	-1,671	-591	-477	-1,781	-4,395	-4,760
Service Balance	-216	277	489	696	244	-927
Current Account	-1,887	-314	12	-1,085	-4,151	-5,687
Long-Term Capital Net	1,178	1,371	1,313	2,166	2,663	1,637
Debt Service Rate (%)	12.5	11.0	10.6	12.3	13.5	13.3

Source: The Bank of Korea, Monthly Economic Statistics

TABLE 6

MACROECONOMIC STATISTICS

	1975	1976	1977	1978	1979	1980	Projected 1986*
Unemployment Rate (%)	4.1	3.9	3.8	3.2	3.8	5.2	4.0
Annual Increase Money Supply (M2)	28.2	33.5	39.7	35.0	24.6	26.9	22.0
Domestic Savings Ratio (% of GNP)	18.6	23.3	25.6	27.2	26.6	21.2	29.6
Gross Tax Burden as % of GNP	15.8	17.7	17.8	18.0	17.9	18.4	22.0

* Based on definition that 1 hour of employment per month constitutes employment. Figures for 1975 to 1978 define employment as constituting 18 hours of work per month.

Source: Bank of Korea, Monthly Economic Statistics

TABLE 7

KOREAN EXPORT COMPOSITION

(Per cent)

	1967	1971	1976	1979	1980	Projected 1986*
Primary Products	29.9	14.0	12.2	11.1	9.1	5.5
Light Industrial Products	63.9	68.8	57.9	50.4	47.6	39.5
Heavy and Chemical Products	6.2	17.2	29.9	38.6	43.3	55.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

* Projected in the Fifth Five-Year Economic and Social Development Plan 1982-86, Economic Planning Board.

Source: The Bank of Korea, Monthly Economic Statistics

TABLE 8

KOREAN EXPORTS BY PRINCIPAL COUNTRY

(Per cent)

	1975	1976	1977	1978	1979	1980
U.S.	30.2	32.3	31.0	31.9	29.1	26.3
Japan	25.4	23.4	21.4	20.7	22.3	17.4
Saudi Arabia	-	3.0	6.7	5.6	4.7	5.4
W. Germany	6.1	5.2	4.8	5.2	5.6	5.0
Hong Kong	3.6	4.2	3.4	3.0	3.5	4.7
United Kingdom	3.2	3.3	3.0	3.1	3.6	3.3
Canada	3.9	4.1	3.0	2.6	2.6	2.1
Indonesia	1.0	0.6	0.7	0.8	1.3	2.1
Netherlands	2.5	2.6	2.3	2.4	2.2	2.0
France	0.8	1.2	1.3	1.6	1.7	1.7
Others	23.3	20.1	22.4	23.1	23.5	30.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: The Bank of Korea, Monthly Economic Statistics

TABLE 9

KOREAN IMPORT COMPOSITION

(Per cent)

	1967	1971	1976	1979	1980	Projected 1986*
Food, and Direct Consumer Goods	9.5	16.8	7.5	7.9	12.1	11.5
Capital Goods	31.1	28.6	27.7	31.0	23.0	23.8
Crude Oil	6.0	7.9	18.3	15.3	25.3	25.6
Other	53.4	46.7	46.5	45.8	39.6	39.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: Bank of Korea, Monthly Economic Statistics

* Projected in the Fifth Five-Year Economic and Social Development Plan 1982-86, Economic Planning Board.

TABLE 10

KOREAN IMPORTS BY PRINCIPAL COUNTRY

(Per cent)

	1975	1976	1977	1978	1979	1980
Japan	33.5	35.3	36.3	40.0	32.7	26.4
U.S.	25.9	22.4	22.6	20.3	22.6	21.9
Saudi Arabia	8.3	8.1	10.4	8.6	7.8	14.8
Kuwait	7.6	7.9	5.3	5.0	5.7	7.9
Australia	2.8	2.5	2.6	3.1	2.9	3.0
W. Germany	2.7	2.7	3.2	3.3	4.1	2.9
Indonesia	2.0	2.7	3.3	2.7	2.9	2.1
Malaysia	1.7	2.1	1.8	1.5	1.8	2.0
Canada	2.1	1.3	1.4	1.4	1.6	1.7
Taiwan	2.2	0.9	1.0	1.0	1.0	1.4
United Kingdom	1.7	1.9	1.4	1.4	2.4	1.4
Philippines	0.4	0.5	0.3	0.3	0.7	1.2
France	1.9	1.9	1.7	3.0	1.7	0.9
Others	7.2	9.8	8.7	8.4	12.0	12.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: The Bank of Korea, Monthly Economic Statistics

TABLE 11

SUMMARY OF CANADA-KOREA TRADE

($Cdn. 000's)

	1976	1977	1978	1979	1980
Total Two-Way Trade	$420,135	$466,567	$579,336	$827,125	$918,202
Growth from Previous Year (%)	71.2	11.1	24.2	42.8	11.0
Canadian Exports to Korea	$116,744	$143,843	$216,345	$364,300	$504,086
Growth from Previous Year (%)	47.4	23.2	50.4	68.4	38.4
Korean Exports to Canada	$303,391	$322,724	$369,991	$462,825	$414,116
Growth (decline) from Previous Year (%)	82.5	6.4	12.5	27.5	(10.5)
Balance (deficit) of Trade for Canada	($186,647)	($178,881)	($146,646)	($98,525)	($89,970)
Ratio of Korean Exports to Canadian Exports	2.60	2.24	1.68	1.27	0.82

Source: Statistics Canada

TABLE 12

PRINCIPAL CANADIAN EXPORTS TO KOREA

($ Cdn. 000's)

	1976	1977	1978	1979	1980	1980 % of Total
Radioactive Elements and Isotopes	-	-	-	-	137,002	27.2
Coal	18,143	19,456	24,925	55,558	66,224	13.1
Wood Pulp	9,677	20,952	36,485	38,769	40,400	8.0
Asbestos	4,538	3,941	3,211	4,677	26,534	5.3
Aluminum and Alloys	2,939	20,654	4,341	11,562	25,750	5.1
Potash	11,691	10,444	13,544	17,331	25,428	5.0
Engines, Turbines and Parts	-	343	2,478	36,425	17,414	3.5
Electric Generators and Motors	-	-	305	4,493	16,761	3.3
Raw Hides and Skins	15,512	19,628	29,900	32,081	16,130	3.2
General Purpose Industrial Machinery	164	15	826	3,213	12,989	2.6
Tallow	4,573	11,254	12,403	16,691	11,552	2.3
Telecommunications and Related Equipment	14,626	262	260	10,147	11,420	2.3
Subtotal	81,863	106,949	128,678	230,947	407,604	80.9
Other	34,881	36,894	87,667	133,353	96,482	19.1
TOTAL EXPORTS	116,744	143,843	216,345	364,300	504,086	100.0
% Fully Manufactured Goods (Inedible)	15.9	3.7	6.1	18.9	14.6	
% Semi-Manufactured Goods (Inedible)	33.9	50.5	47.5	37.1	57.1	
% Inedible Crude Materials	40.7	40.1	39.0	38.7	26.4	
% Other	9.5	5.7	5.4	5.3	1.9	
% TOTAL EXPORTS	100.0	100.0	100.0	100.0	100.0	

Source: Statistics Canada

TABLE 13

PRINCIPAL CANADIAN IMPORTS FROM KOREA

($ Cdn. 000's)

	1976	1977	1978	1979	1980	1980 % of Total
Outerwear, Except Knitted	75,771	58,236	65,084	82,051	70,334	17.0
Television, Radios, Phonographs	24,162	29,563	30,628	65,311	48,085	11.6
Footwear	22,764	22,624	28,538	35,307	43,936	10.6
Outerwear, Knitted	48,814	42,206	42,528	32,924	27,208	6.6
Other Apparel and Apparel Accessories (handbags, hats, gloves...)	18,207	20,850	26,689	32,095	24,747	6.0
Textile Fabrics	8,594	10,770	13,490	17,304	18,932	4.6
Other Telecommunications and Related Equipment (tape recorders, amplifiers, speakers...)	10,704	13,056	13,125	17,971	14,456	3.5
Other Personal and Household Goods	8,465	9,804	16,483	16,617	14,075	3.4
Sporting and Recreation Equipment	3,530	7,459	8,387	13,556	13,367	3.2
Yarn and Thread	2,230	5,249	4,990	4,602	12,183	2.9
Kitchen Utensils, Cutlery and Tableware	5,341	6,438	7,171	8,975	10,820	2.6
Steel Bars, Rods, Plate	4,707	4,415	2,710	16,277	9,957	2.4
Wired Wire Rope, Iron and Steel	2,030	3,031	3,531	8,389	9,845	2.4
Plywood and Wood Building Boards	17,854	22,459	17,950	16,600	9,023	2.2
Subtotal	253,173	256,160	281,304	367,979	326,968	79.0
Other	50,218	66,564	81,687	94,846	87,148	21.0
TOTAL IMPORTS	303,391	322,724	362,991	462,825	414,116	100.0
% Fully Manufactured Goods (Inedible)	79.8	75.1	78.1	76.9	76.0	
% Semi-Manufactured Goods (Inedible)	15.1	18.5	16.7	18.8	21.1	
% Other	5.1	6.4	5.2	4.3	2.9	
% TOTAL EXPORTS	100.0	100.0	100.0	100.0	100.0	
% Textile Products and Clothing	50.9	42.9	42.5	36.9	37.6	

Source: Statistics Canada

TABLE 14

FEDERAL TRADE FAIRS AND MISSIONS WITH KOREA

FISCAL YEAR	TRADE FAIRS	OUTGOING MISSIONS	INCOMING MISSIONS	MINISTERIAL MISSIONS
1979/80	Nil	1. Livestock Mission and Seminar	1. Rapeseed and Rapeseed Meal Mission 2. Pulp and Paper Equipment Mission 3. Electric Equipment Buyers from Korea to IEEE Show, Toronto 4. Military Communications Delegation 5. Highway Construction and Winter Roads Maintenance Delegation	1. Korean Minister of Foreign Affairs, PARK, Tong Jin.
1980/81	1. International Engineering Exhibition, Seoul (ENKOR '80)	1. Computer Technology Mission to Korea, Hong Kong and Singapore 2. Highway Construction and Winter Road Maintenance		1. Inauguration of President Chun attended by Hon. J. Marchand, Speaker of the Senate
1981/82	Nil	1. International Symposium on Genetic Improvement of Farm Animals	1. Fisheries Products Mission from Hong Kong, Singapore, Korea	1. Korean Minister of Commerce and Industry, SUH, Suk Joon 2. Minister of State for Trade, Edward Lumley

TABLE 14 (Cont'd)

FEDERAL TRADE FAIRS AND MISSIONS WITH KOREA

FISCAL YEAR	TRADE FAIRS	OUTGOING MISSIONS	INCOMING MISSIONS	MINISTERIAL MISSIONS
			2. Business Delegation accompanying Minister of Commerce and Industry	
			3. Livestock Delegation	
1982/83P*		1. Airport Vehicles Mission to Malaysia, Indonesia, Philippines, Thailand, Korea	1. Home Builders' Mission	1. Korean Minister of Agriculture and Fisheries KO Kun

P* proposed, under discussion

TABLE 15

THE STATUS OF WORLD BANK GROUP OPERATIONS IN THE REPUBLIC OF KOREA

(U.S. $ millions)

Loan or Credit Number	Calendar Year	Borrower	Purpose	Amount	Status
To end 1978, 28 loans fully disbursed and 15 loans almost fully disbursed.					
1666	1979	Republic of Korea	Chungju Multipurpose	125.0	
1676	1979	Republic of Korea	Electronics Technology	29.0	
1749	1979	Dev. Finance Co.	Small and Medium Industry Bank III	60.0	
1758	1979	Republic of Korea	Second Gwangju Regional	65.0	
1774	1979	Republic of Korea	Population I	30.0	
1778	1979	Korea Electric Co.	Gojeong Power	115.0	
1800	1980	Republic of Korea	Higher Technical Education	100.0	
1829	1980	Dev. Finance Co.	Citizens National Bank	30.0	
1836	1980	Republic of Korea	Railway VII	94.0	
1851	1980	Agriculture & Fishery Dev. Corp.	Agriculture II - Agricultural Products Processing	50.0	
1932	1980	Dev. Finance Co.	KLTCB VIII	90.0	
1933	1980	Dev. Finance Co.	KDB IV	100.0	
			TOTAL APPROVED	3,095.0	
Proposed Projects (as of Sept./81)		Ministry of Agriculture and Fishery	Agricultural Marketing I	60.0	Appraisal Report being prepared
		Ministry of Commerce and Industry	Small and Med. Machinery Industry	60.0	Project being prepared by Government
		Ministry of Science and Technology	Technological Development	50.0	Appraisal Report being prepared
		Ministry of Construction	Water Supply I - Daiga, Masau, Chaugwan, Jitthal & Gwangju	90.0	Negotiations substantially completed
		Ministry of Transportation/Korea Maritime and Port Authority	Parts III - container handling capacity	-	Under preparation
		Ministry of Finance/Economic Planning Board	Structural Adjustment	250.0	Negotiations substantially completed
		Ministry of Transportation	Cement & Coal Distribution	100.0	Under preparation
		Ministry of Home Affairs	Rural Roads	125.0	Under preparation
		Ministry of Construction	Jeonju Regional Development	80.0	Feasibility study being prepared
		Citizens National Bank	CNB II	40.0	Appraisal mission - October

TABLE 16

ASIAN DEVELOPMENT BANK

Loan and Technical Assistance Approvals and Proposed Projects for Korea

(U.S. $ millions)

1980/81 APPROVALS	Ordinary Capital Resources	Total Project Costs
A. LOANS		
Samrangjin Pumped Storage Power	52.63	321.63
Second Incheon Port Development	54.00	103.00
Sixth Small and Medium Industry Bank	40.00	-
Sewage Treatment	27.90	126.34
Small and Medium Industries Management Technology Institute	13.0	28.2
Fourth Korea Long-Term Credit Bank	60.0	-
TOTAL APPROVED (67-81)	1241.33	
B. TECHNICAL ASSISTANCE		
Han River Basin Environmental Master Plan	0.13	0.13
TOTAL APPROVED (68-80)	2.83	

PROPOSED PROJECTS (as of June 1981)

A. LOANS

Borrower	Purpose	Amount	Total Project Costs
Korea National Housing Corp.	Second Low-Income Urban Housing	60.0	167.5
Citizens National Bank	Second Citizens National Bank	30.0	-
--	Energy Conservation Program	(to be determined)	
Ministry of Construction	Provincial Water Supply	38.25	114.5
Office of Environment	Han River Basin Environmental Master Plan	4.1	7.0
Small and Medium Industry Bank	Seventh Small and Medium Industry Bank	60.0	-
Korea Electric Co.	Extra High Voltage Transmission	50.0	-
B. TECHNICAL ASSISTANCE			
--	Energy Conservation Sector	(to be determined)	
Ministry of Construction	Water Supply Sector	(to be determined)	

TABLE 17

REGISTERED CIVILIAN AIRCRAFT IN KOREA

(Source: MOT and Industry Reports)

Type of Aircraft	No. of Register	Owner	Remarks
H-22B-3	HL 0301	Aviation College	Light Trainer
"	HL 0302	"	"
SKYLARK 3F	HL 0601	"	"
"	HL 0602	"	"
RHONLERCHE II	HL 0603	"	"
PA-18-150	HL 1005	Shin-A Daily News	Utility Press Transport
CESSNA 185A	HL 1009	Dong-A Newspaper	"
L-5E	HL 1012	Korea Times	"
L-19B	HL 1019	Chunnman Daily News	"
L-5E	HL 1021	Kukje Daily News	"
CESSNA 182	HL 1026	Korea Times	"
CESSNA 2 10G	HL 1027	Choong-Ang Daily News	"
PA-28-235	HL 1029	Chosun Daily News	"
PA-32-260	HL 1030	Seki Industrial Co.	Light PAX Transport (Cargo)
PA-32-300	HL 1032	Kukje Daily News	
PA-32-300	HL 1032	Aviation College	Light Trainer
CESSNA 180	HL 1033	Kyung Hyang Daily News	Utility Press Transport
PA-32-300	HL 1035	Aviation College	Light Trainer
CESSNA P206E	HL 1036	Seoul Daily News	Utility Press Transport
CESSNA 305	HL 1037	Aviation College	Light Trainer
FA-2CO-180	HL 1041	"	"
"	HL 1042	"	"
"	HL 1043	"	"
CESSNA TU 206	HL 1045	Asia Aero Survey	Agricultural Spray, Aerial Photography
FA-200-180	HL 1046	Aviation College	Light Trainer
CESSNA 337	HL 2005	Korean Airlines	Utility PAX Transport (Cargo)
CESSNA 337	HL 2011	"	"
PA-23-250	HL 2014	Hankook Ilbo	Utility Press Transport
AEROCOMM 680F	HL 2017	Asia Aero Survey	Agricultural Photograph Light Trainer
AEROCOMM 520	HL 2018	"	"
CESSNA 402B	HL 2019	"	"
PC-6-BLA	HL 5101	Shin Jung Transportation	Light Trainer, Utility
F-27-200	HL 5201*	Korean Airlines	Domestic PAX - CARGO
"	HL 5202*	"	"
"	HL 5209*	"	"
F-27-500	HL 5210*	"	"
"	HL 5211	"	"
Hughes 300	HL 6101	Dong-A Ilbo	Utility Press Transport
BELL 47G-3B	HL 6102	Hankook Ilbo	"
"	HL 6106	Chun-nam District Office	Utility, Agricultural Spray
BELL 47G-5A	HL 6108	Asia Aero Survey	Agricultural Spray
BELL 47G-3B	HL 6112	Chun-nam District Office	Agricultural Spray, Utility
BELL 47G-5A	HL 6116	Asia Aero Survey	Agricultural Spray

TABLE 17 (Cont'd)

Type of Aircraft	No. of Register	Owner	Remarks
BELL 47G-5A	HL 6118	Asia Aero Survey	Agricultural Spray
BELL 47G-5	HL 6119	"	"
BELL 47G-5A	HL 6120	"	"
BELL 47G-5	HL 6121	"	"
"	HL 6122	"	"
BELL 47G-5A	HL 6123	"	"
BELL 47G-5	HL 6124	"	"
"	HL 6125	"	"
A-300B4	HL 7218	Korean Airlines	PAX-Cargo Transport
"	HL 7219	"	"
"	HL 7720	"	"
"	HL 7221	"	"
"	HL 7223	"	"
"	HL 7224	"	"
CESSNA 500	HL 7226	"	"
"	HL 7227	Ministry of Transportation	Facility Check
B-727-46	HL 7307	Korean Airlines	PAX-Cargo
"	HL 7308	"	"
"	HL 7309	"	"
DC-10-30	HL 7315	"	"
"	HL 7316	"	"
"	HL 7317	"	"
"	HL 7328	"	"
B-707-3B5C	HL 7406	"	"
B-727-2B5B	HL 7410	"	"
"	HL 7411	"	"
B-707-373C	HL 7425	"	"
B-707-320C	HL 7427	"	"
B-707-320B	HL 7430	"	"
B-707-321B	HL 7431	"	"
BELL 206A	HL 9101	"	"
BELL 206B	HL 9102	Asia Aero Survey	Utility-Aerial Survey of High Volt. Line
HUGHES 369D	HL 9103	Korean Airlines	Utility
BELL 206C	HL 9105	Hyundai Shipbuilding Co.	Utility, Executive
B-747-273C	N 749WA	Korean Airlines	PAX-Cargo
HUGHES 2/500D	HL 9110	Hapdong	Utility, Press Transport
"	FP 701/3	Office of Forestry	Agricultural Spray
"	HL 9112/3	Seoul City	Fire Fighting, Search/Rescue
BOEING 2/B-747		Korean Airlines	PAX-Cargo
BELL 1/206L	HL 9108	Daewoo	Utility, Executive
"	HL 9111	Hyosung	"
CESSNA 402	HL 9106	Hyundai	Executive
H-500M	HL 9109	Tacoma	Utility
BELL 2/47		Office of Forestry	
BELL 3/206		"	
BELL 2/47		Korea National Police	
BELL 206		"	
BELL 212		"	

TABLE 18

SECOND TIER COMPANIES AND THEIR PRODUCTS IN THE AEROSPACE INDUSTRY

Company	Products	Location
Aviation Electric	Fuel Control Units R&O of Instruments	Montreal
Boeing Canada Ltd.	Fibre re-inforced plastics and composites	Winnipeg
Bristol Aerospace	Airframe and engine components, Aircraft R&O, Met and military rockets propellants	Winnipeg
Canadian Aviation Electronics (CAE)	Flight Simulators	Montreal
Canadian Marconi Co. (CMC)	Airborne Navigation	Montreal
Computing Devices of Canada (CDC)	Airborne computing systems	Ottawa
McDonnell-Douglas Aircraft of Canada	Wing assemblers	Malton, Toronto
Dowty Equipment	Landing gears	Ajax, Ontario
Enheat	Airframe components	Amherst, Nova Scotia
Fleet Industries	Airframe components, Sonobuoys	Fort Erie, Ontario
Garrett Manuf.	Aircraft temperature controls and electronics	Rexdale, Ontario
Irvin Industries	Parachutes, Cargo drop systems	Fort Erie, Ontario
Leigh Instruments	Electro-mechanical aircraft systems	Carleton Place, Ont.
Litton Systems Canada	Inertial navigation systems	Toronto
Lucas	Engine controls	Montreal
Menasco Canada	Aircraft landing gears and flight control systems	Montreal
Orenda Division, Hawker Siddeley	Gas turbine R&O	Toronto
Rolls Royce	Engine R&O	Montreal
Spar Aerospace	Gears, transmissions, helicopter and component R&O space equipment	Toronto

Third Tier Companies

There are some 80 third tier companies whose main business is in aerospace products and services; these companies do not have a proprietary product line but bid on general sub-contract work for the first and second tier companies. Those specializing in repair and overhaul of aircraft or engines are also classified as third tier.

Most of these businesses are small, with annual sales of less than $1 million, but there are some notable exceptions, for example, Standard Aero in Winnipeg and Heroux Ltd. in Montreal.

TABLE 19

CANADA-KOREA BUSINESS COUNCIL MEMBERSHIP

Mr. N.F. Macfarlane
Vice-President, Japan and Korea
Alcan Aluminum Limited

Mr. J.H. Warren
Vice-Chairman
Bank of Montreal

Mr. W.S. McDonald
Senior Executive Vice-President
The Bank of Nova Scotia

Mr. F.M. Foulkes
Chairman and CEO
Canatom Inc.

Dr. A.E. Earl
Executive Director
Canola Council of Canada

Mr. J. Seigneuret
Senior Vice-President International
National Bank of Canada

Mr. R.E. Hatch
President
Canpotex Limited

Mr. R.Q. Phillips
President and Chief Executive Officer
Cansulex Limited

Mr. G.T. Page
President
The Coal Association of Canada

Mr. J.H. Morrish
President and Chief Executive Officer
Fording Coal Limited

Mr. P.G. Opler
Executive Vice-President
The Foundation Company of Canada Limited

Mr. R. Arscott
President, Coal Division
Kaiser Resources Ltd.

Mr. G.D. Coates
President
Luscar Ltd.

Mr. R.N. Wiewel
Senior Vice-President
MacMillan Bloedel Limited

Mr. B.A. Beneteau
President
Northern Telecom Canada Limited

Mr. J.A. Butterfield
Vice-President, Marketing
Placer Development Limited

Mr. G.T. Richardson
President
James Richardson & Sons, Limited

Mr. H.A. Pakrul
Vice-President
Rio Algom Limited

Mr. J.M. Walker
Senior Vice-President
World Trade and Merchant Banking
The Royal Bank of Canada

Mr. R.A. King
President
Crows Nest Resources Ltd.

Mr. G.E. Burns
Manager, Asian Operations
Stanley Associates Engineering Ltd.

Dr. G.A. Pan
President
Atomic Energy of Canada Limited International

TABLE 19 (Cont'd)

CANADA-KOREA BUSINESS COUNCIL MEMBERSHIP

Mr. K.G. Donald
Vice-President - Coal
Petro Canada

Mr. B.I. Howe
Chairman of the Board
B.C. Coal Ltd.

Mr. A. Taylor
Executive Vice-President
The SNC Group

Mr. T.M. Burns
President
Canadian Export Association

Mr. N.B. Cavadias
President
CAE Electronics Ltd.

Mr. G.J. Willmon
President
ESSO Minerals Canada

Mr. K.A. McCartney
Vice-President, Marketing
Simpsons-Sears Ltd.

Mr. R.K. Andras
Senior Vice-President
Teck Corporation

Mr. M. Desjardins
President
CEGIR

Mr. E.W. Ogden
Vice-President, Eastern Canada
CP Air

Mr. T.S. Allan
President
Computing Devices Co.

Mr. W.E. Gard
Marketing Manager
Federal Commercial and Navigation Ltd.

Mr. J.P. Schade
Senior Vice-President
Inco Metals Co.

Mr. P.J. Vrso
President
McIntyre Mines Ltd.

Mr. S.J. Bonny
Vice-President, Marketing
Saskatchewan Mining Development Corp.

Mr. K.L. Dowd
Vice-President and General Manager
The Toronto-Dominion Bank

TABLE 20

PROGRAM FOR EXPORT MARKET DEVELOPMENT (PEMD)
APPROVALS AND SUCCESSES BY SECTION IN KOREA 1971-1980

YEAR		SECTION						
		A	B	C	D	E	F*	R*
1971	approvals	0	0	0	0	0	-	-
	successes	0	0	0	0	0	-	-
1972	approvals	3	0	0	0	0	-	-
	successes	0	0	0	0	0	-	-
1973	approvals	5	4	0	0	0	-	-
	successes	2	2	0	0	0	-	-
1974	approvals	2	0	0	0	0	-	-
	successes	0	0	0	0	0	-	-
1975	approvals	2	0	0	0	0	-	-
	successes	1	0	0	0	0	-	-
1976	approvals	3	0	0	0	0	-	-
	successes	0	0	0	0	0	-	-
1977	approvals	3	4	0	0	0	-	-
	successes	3	2	0	0	0	-	-
1978	approvals	10	8	0	0	0	-	-
	successes	3	3	0	0	0	-	-
1979	approvals	12	9	1	0	0	0	0
	successes	1	0	0	0	0	0	0
1980	approvals	4	3	1	0	0	0	0
	successes	0	0	0	0	0	0	0

* PEMD F & R began in 1979.

TABLE 21

MAJOR PLANNED PROJECTS AS OUTLINED IN THE FIFTH FIVE-YEAR ECONOMIC AND SOCIAL DEVELOPMENT PLAN 1982-86

(U.S.$ Million in 1980 Prices)

(A) To be Finished by 1986

Projects	Construction Period	Description	Capital Required	
			Total	1982-86
Nuclear Power Plants (Wolsung #2,5,6)	1976-85	3,299 thous. Kw	4,052	1,438
Expansion of Shipyard	1982-86	4 million G/T - 5.5 million G/T	879	879
New Construction of Shipyard	1983-85	0.5 million G/T	325	325
Expansion of Passenger Car Capacity	1982-86	300 thousand units	1,569	1,569
Storage Terminal for LNG	1981-86	3 million M/T	593	569
Storage Terminal for LPG	1980-82	1 million M/T	107	51
Double Lines of Honam Railroad	1981-85	101.2 km	213	200
East-West Express Way	1981-84	Taegu-Kwangju: 174.9 km	300	264
Subway of Seoul #2,3,4 and Pusan #1	1978-85	Seoul #2 : 48.8 km Seoul #3,4: 57 km Pusan #1 : 22.5 km	3,441	2,534
Choongju Dam	1978-85	967 thous. m^3	487	362
Hapcheon Dam	1982-86	4,004 thous. m^3	167	167
Nakdong River Estuary Barrage	1982-86	1,483 thous. km^3	110	110
Sewage Treatment Plant	1982-86	3,857 thous. M/T/day	1,074	1,074
New Seoul Agricultural Wholesale Market	1979-83	193 thous. m^2	116	93

TABLE 21 (Cont'd)

MAJOR PLANNED PROJECTS AS OUTLINED IN THE FIFTH FIVE-YEAR ECONOMIC AND SOCIAL DEVELOPMENT PLAN 1982-86

(U.S.$ Million in 1980 Prices)

(B) To Be Continued After 1986

Projects	Construction Period	Description	Capital Required	
			Total	1982-86
Nuclear Power Plants #7,8,9,10,11,12	1979-90	5,600 thous. Kw	7,628	5,620
Nuclear Power Plants #13,14,15	1985-92	2,750 thous. Kw	3,259	90
Second Steel Mill	1985-88	3 million M/T	2,744	1,005
Seoul-Daejon Electric Railroad	1986-89	Seoul-Daejon: 160 km	1,721	328
Repair of Cheolla and Changhang Lines	1985-89	Iri-Yesoo: 198.3 km Cheonan-Changhang: 143.5 km	364	49
Widening of Honam Expressway	1984-89	Daejon-Kwangju: 171.2 km (Two lines four lines)	189	90
Expansion of Pusan Port	1983-87	Pier: 1,600 m	284	179
Expansion of Kimpo Airport	1982-87	Construction of Runway (4,000 m x 60 m)	270	159
Expansion of Kimhae Airport	1982-87	Expansion of Runway (500m x 45m)	34	30
Subway of Pusan #2	1985-89	20.8 km	367	148
Chuam Dam	1986-91	1,833 thous. m^3	238	21
Large Coverage Water Supply	1982-91	2.5 million M/T/day	666	270

Source: The Fifth Five-Year Economic and Social Development Plan 1982-86, Economic Planning Board, Republic of Korea, September 1981.

IV. GLOSSARY OF ABREVIATIONS

AECL	Atomic Energy of Canada Limited
CIDA	Canadian International Development Agency
CIGI	Canadian International Grains Institute
CKBC	Canada Korea Business Council
DPB	Defence Programs Branch, ITC
EA	Department of External Affairs
EDC	Export Development Corporation
ELE	Electrical and Electronics Branch, ITC
ESA	Energy Group, ITC
GMO	Grains Marketing Office, ITC
GTCs	General Trading Companies
IFS	Public Information Directorate, ITC
IMP	International Marketing Policy Group, ITC
ITC	Department of Industry, Trade and Commerce
KAL	Korea Air Lines
KECO	Korea Electric Company
KFA	Korea Feed Association
KNFDI	Korea Nuclear Fuel Development Institute
KNP	Korean National Police
KOFMIA	Korea Flour Mills Industrial Association
KPMA	Korea Paper Manufacturing Association
KTC	Korea Telecommunications Company
KTRI	Korea Telecommunications Research Institute
MCI	Ministry of Commerce and Industry, ROK
MER	Ministry of Energy and Resources, ROK
MOAF	Ministry of Agriculture and Fisheries, ROK
MOC	Ministry of Communications, ROK
MTPY	Metric Tons Per Year
OOF	Office of Forestry, ROK
PAM	Bureau of Pacific, Asian, African and Middle Eastern Affairs, ITC
PEMD	Program for Export Market Development
PHWR	Pressurized Heavy Water Reactor
PLWR	Pressurized Light Water Reactor
POSCO	Pohang Iron and Steel
POST	Canadian Embassy in Seoul, Korea
RIC	Resource Industries Branch, ITC
ROK	Republic of Korea
TCS	Trade Commissioner Service, ITC
TPI	Transportation Industries Branch, ITC
UNIDO	United Nations Industry and Development Organization

CANADIAN GOVERNMENT CONTACTS

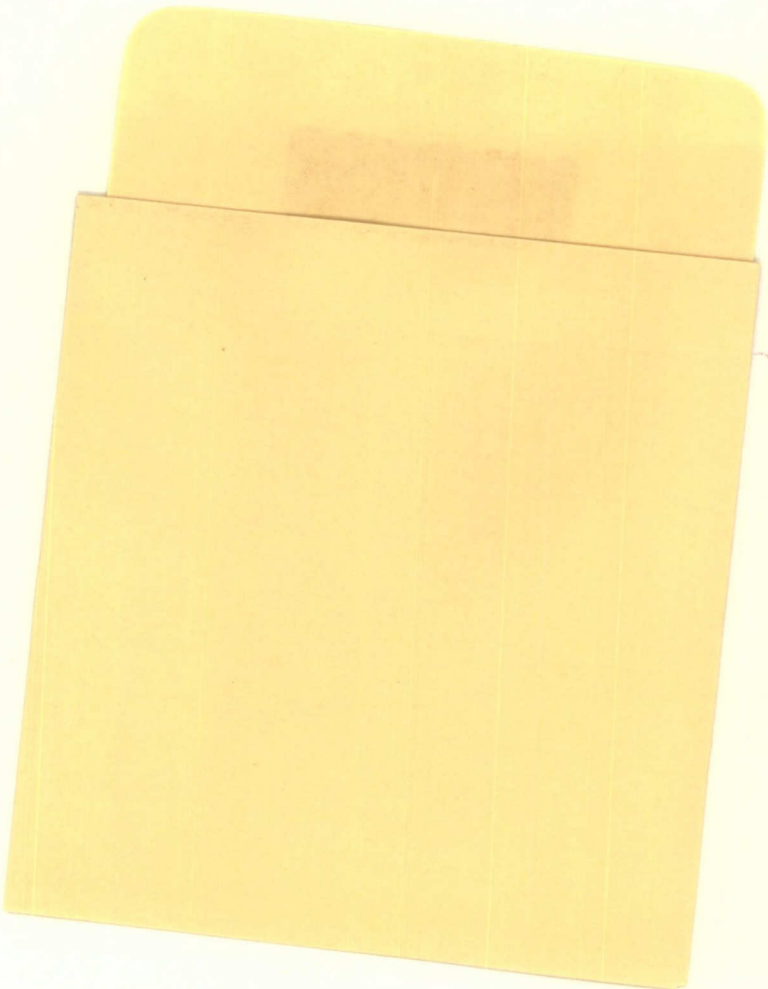
Asia Division
Bureau of Pacific, Asian, African
and Middle Eastern Affairs
Department of Industry, Trade and Commerce
235 Queen Street
Ottawa, Ontario
K1A 0H5

Phone: 613 996-9195

Commercial Division
Canadian Embassy
Kolon Building
45 Mungyo-Dong, Jung-Ku

Mailing Address: C.P.O. Box 6299
Seoul 100
Republic of Korea

Cable: CANADA SEOUL
Phone: 776-4062/68
Telex: (Destination Code 801) 27425
(Canada K27425)



Canada

(aussi édité en français)