Hydro-Québec Annual Report 1974

Hydro-Québec
Annual Report
1974

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La version française du présent rapport sera fournie, sur demande par:

Direction des Relations publiques
Hydro-Québec, 19e étage
75 ouest, boulevard Dorchester
Montréal (Québec) H2Z 1A4

Cover photo:
Construction of Gentilly 2 nuclear power station.

Ministère des Richesses naturelles
Province de Québec
Cabinet du Ministre

L'honorable lieutenant-colonel
Hugues Lapointe, c.r.
Lieutenant-gouverneur de
la province de Québec

May it please Your Honour,

The undersigned has the honour
to present the report of
Hydro-Québec
for the year ended
December 31, 1974

Respectfully submitted,

Le ministre des
Richesses naturelles,

Québec, March 27, 1975

The Commission

President
Roland Giroux

Vice-president
Yvon DeGuise, Eng.

Commissioners
Georges Gauvreau, N.P.,
Robert A. Boyd, Eng.
Paul Dozois

Controller
Roger Girard, C.A.

Joint Secretaries
William E. Johnson
Michel-André Demers

General Auditor
Marcel Jean, C.A.

Hydro-Québec was created on April 14, 1944, by an Act of the Provincial Legislature as a government-owned enterprise responsible for producing and distributing electricity in the Province of Québec.

General Managers

Construction
Guy Monty, Eng.

Distribution and Sales
Maurice Saint-Jacques, Eng.

Engineering
Lionel Cahill, Eng.

Finance and Accounting
Edmond A. Lemieux, C.A.
Treasurer
Georges Lafond, C.A.

Personnel
Alexandre Beauvais, Eng.

Production and Transmission
J. J. Villeneuve, Eng.

Supply
Roger A. Labrie

Directors of Consulting Directorates

Economic Research
Jean-Charles de Groote

Electronic Data Processing
André Duval

Environmental Planning
Gaston Galibois, Eng.

Institute of Research
Lionel Boulet, Eng.

Law
Jean Boulanger, Q.C.

Organization
Pierre Fiset

Programming and Control
Louis-Georges Boivin, Eng.

Projects
Gaston Turenne, Eng.

Public Relations
Marcel Couture

Regional Directors

Abitibi
Maurice Huppé, Eng.

Laurentides
Marcel Lapierre, Eng.

Maisonneuve
Georges A. Lauzon, Eng.

Manicouagan
Gérard R. Labossière, Eng.

Matapédia
Gilles Béliveau, Eng.

Mauricie
Robert Brunette, Eng.

Montmorency
Pierre Godin, Eng.

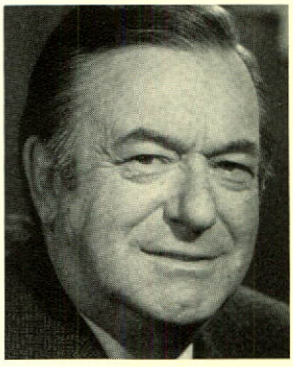
Richelieu
Pierre Simard, Eng.

Saguenay
Jean-Claude Grégoire, Eng.

Saint-Laurent
Jean Lespérance

HOWARD ROSS LIBRARY
OF MANAGEMENT
OCT 6
McGILL UNIVERSITY

President's foreword



The financing of the construction program became Hydro-Québec's main preoccupation in 1974, as it did for electrical utilities throughout North America, and in the last quarter of the year the most serious slowdown in economic activity since the Second World War added to this problem.

In 1974, the growth in the electricity needs of our Québec customers, which we are obliged to satisfy, was especially high in the residential and commercial sectors.

The results of the year's operations were excellent. For the 12 months to December 31, 1974, net income amounted to $176,623,000, substantially more than had been forecast at the beginning of the year. The increase in the revenue from electricity sales was attributable to three main factors.

Firstly, the wider use of electric heating is becoming an important factor in the growth of our sales. The number of customer accounts of all types with electric heating has more than doubled in two years, rising from 123,000 in 1972 to 181,000 in 1973, and reaching 250,000 at December 31, 1974.

This is partly why revenue from electricity sales to residential customers exceeded our expectations and was up $32 million from 1973. Only about $8 million of this amount was accounted for by the April 1973 rate increase which applied over a full year for the first time in 1974.

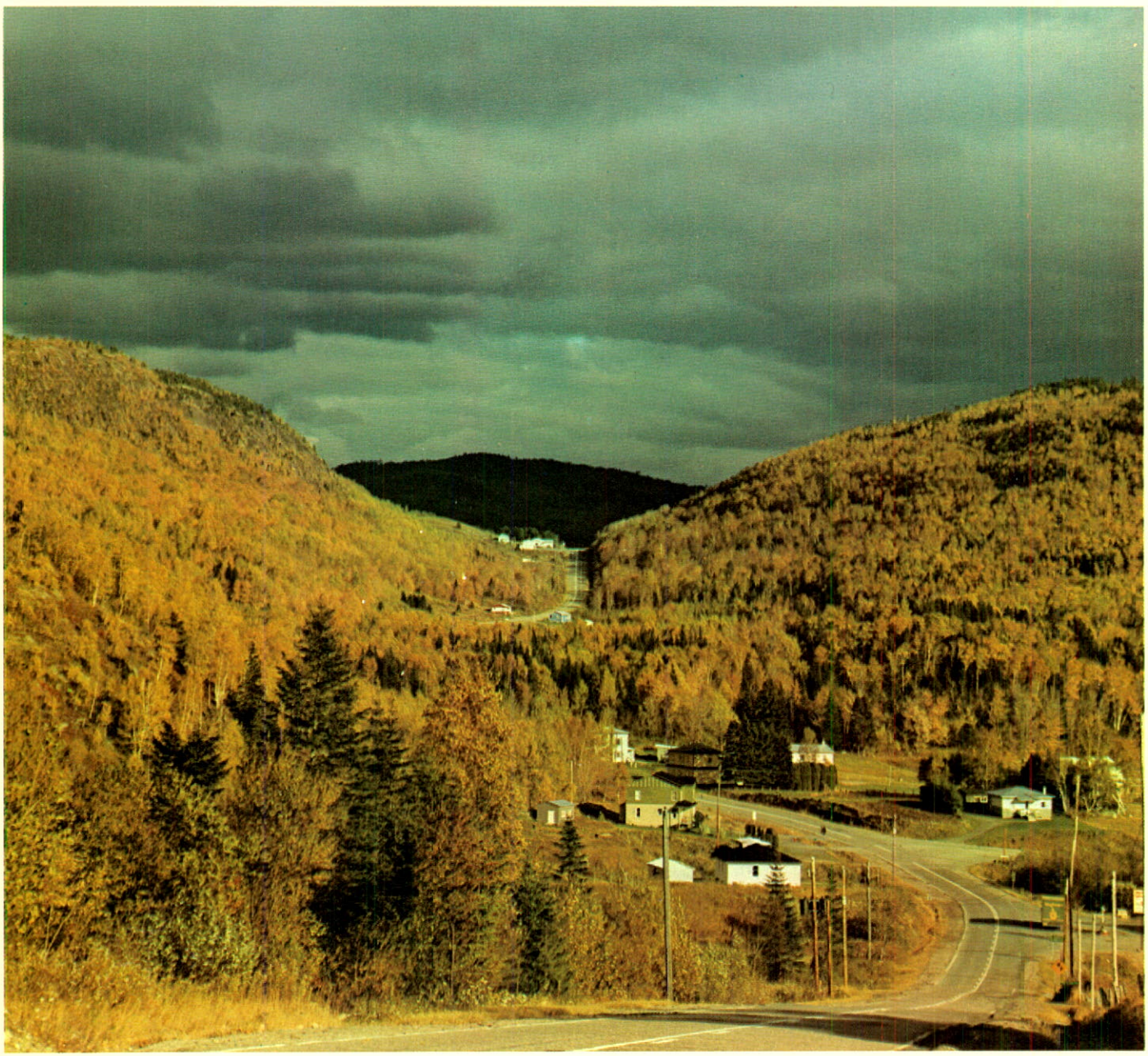
Secondly, during the year we renewed contracts with many industrial customers and this enabled us to charge these firms rates that are more in line with general price increases.

The third factor contributing to the favorable financial results has to do with sales of secondary energy. Exceptional runoff, large water reserves and higher selling prices meant that the revenue from these sales increased by $21 million.

In 1974, 18.4% of investments were financed from internally generated funds, but our financial requirements are growing rapidly. In 1975, capital expenditures, maturing debts, sinking-fund purchases and other cash requirements will total $1,200,000,000 — three times the amount needed five years ago.

The rate increases we have proposed for 1976 and 1977 are much lower than those that will be applied by most other electrical utilities. This is because our electricity production is almost totally hydraulic and our operating costs therefore escape the disastrous effects felt elsewhere as a result of the large increases in oil and coal prices.

The rate increase applied at the beginning of 1975 had been preceded in 1974 by studies aimed at introducing reforms into the rate structure itself. These reforms were designed to spread the burden as equitably as possible among the various categories of customers as well as within the individual categories, taking into consideration present and future costs of furnishing electricity.



Two examples of the changes made were the province-wide standardization of residential rates and the increasing of rates for large industries. In addition, we moderated the regressive aspect of the rate structure to bring it more into line with the rate structures of other North American electrical utilities, and, in some measure, to protect the small consumer.

During the year, we continued studies to establish the general principles on which our future construction programs will be based. These programs will combine the development of Québec's hydraulic resources with the development of nuclear power.

The power potential of unexploited hydraulic resources is estimated at 25,000 megawatts, and these resources are being studied to assess their economic worth. The aim of our nuclear-energy studies is to determine the program that will best provide a transition from hydroelectric construction, particularly through the training of the highly specialized personnel teams that will be needed.

By the end of the year, the vast capital equipment program that we described in the last two annual reports was being implemented, and all the most serious difficulties that we had encountered were well on the way to resolution.

Once more in 1974 the Commission benefited from the support and understanding of the employees, and my colleagues join me in expressing sincere gratitude to all of them.

Montreal, March 24, 1975.

10 Years' Progress

	1974	1973	1972	1971	1970	1969	1968	1967	1966	1965
Financial situation (in millions of dollars)										
Property and plant, at cost	$ 4,973	4,834	4,599	4,251	3,899	3,404	2,992	2,842	2,622	2,428
Long-term debt and notes payable	$ 4,107	3,566	3,299	3,026	2,805	2,738	2,546	2,399	2,176	1,928
Reserves or net worth	$ 1,437	1,260	1,140	1,041	913	796	712	634	558	507
Total revenue from electricity sales	$ 775	654	561	518	478	416	387	354	314	288
Total operating and interest charges	$ 645	573	499	427	397	362	328	297	274	241
Effects of growth										
Installed capacity at December 31 (in megawatts*)	11,123	11,148	11,107	11,107	10,617	9,809	8,365	8,179	7,763	7,350
Maximum firm-power demand in the service area (in megawatts*)	11,131	11,135	9,747	9,173	8,873	8,100	7,664	6,930	6,562	6,053
Total sales of electricity (in billions of kilowatthours)	77.7	68.7	60.4	52.5	50.6	46.3	43.1	41.2	39.7	36.1
Total number of customer accounts (in thousands)	2,081	2,017	1,943	1,895	1,852	1,773	1,720	1,656	1,581	1,539
Number of permanent employees	13,679	13,027	12,627	12,245	12,012	11,890	11,723	11,637	11,466	10,976

*1 megawatt (or 1 MW) = 1,000 kilowatts = 1,000,000 watts

Financial results*

In 1974, a rapid growth in the demand for electricity in Québec, together with the sale of large amounts of secondary energy and a further increase in energy deliveries to neighboring systems, brought about a substantial improvement in the year's financial results.

Net income before allocations to reserves totaled $176,623,000, exceeding the comparable 1973 figure by $56,014,000 or 46.4%.

Total revenues (*revenue* plus *other income)* were $822,022,000, an increase of $128,453,000 or 18.5% over the previous year.

Total expenses *(expenditure* plus *interest charges)* amounted to $645,399,000, or 12.6% more than the 1973 figure of $572,960,000.

Sales of primary or firm energy in Québec produced $84,241,000 more than in 1973, while sales of secondary energy and exports brought in $37,064,000 more. Moreover, among *other income* items, *investment income (net)* rose to $14,957,000, which was 39.2% more than in 1973.

Among expenditure items, *operating, maintenance, administration and other expenses* amounted to $236,853,000, an increase of $35,212,000 or 17.5%. This followed upon an increase of 17% in this item in the previous year.

Power purchased rose from 18.4 to 25.9 billion kilowatthours, most of it from Churchill Falls powerhouse. The cost was $86,930,000, which was $24,177,000 or 38.5% more than in the previous year.

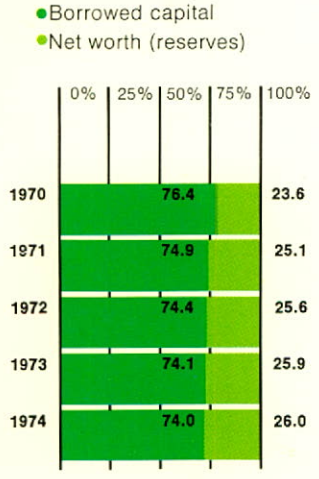
Provision for renewals (depreciation) increased by only $3,008,000 to $78,447,000 because few new installations were put into service during the year.

The *provincial levy on energy generated* had cost $29,882,000 in 1972, but on April 1, 1973 it was replaced by a fixed *provincial levy* of $20,000,000 a year. In 1974, this new taxation system operated for a whole year for the first time (see note 2 of the Consolidated Financial Statements).

School and municipal taxes cost $18,379,000 in 1974 as against $18,783,000 in the preceding year.

*In this section, words in italics correspond to terms used in the Financial Statements and Statistics.

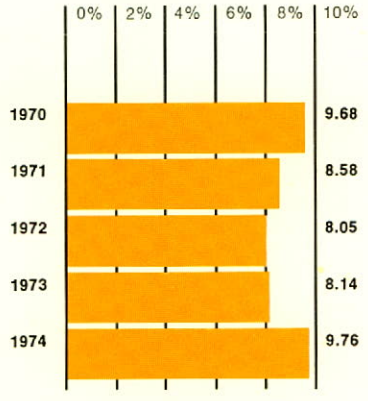
Composition of capital*



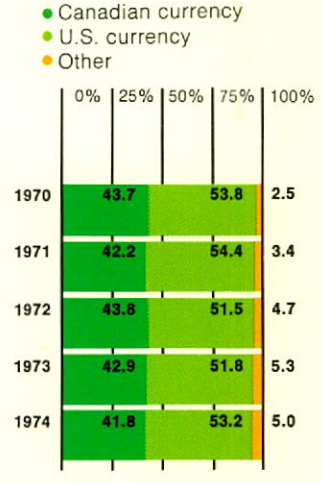
*Average of figures for beginning and end of each year.

Interest rates

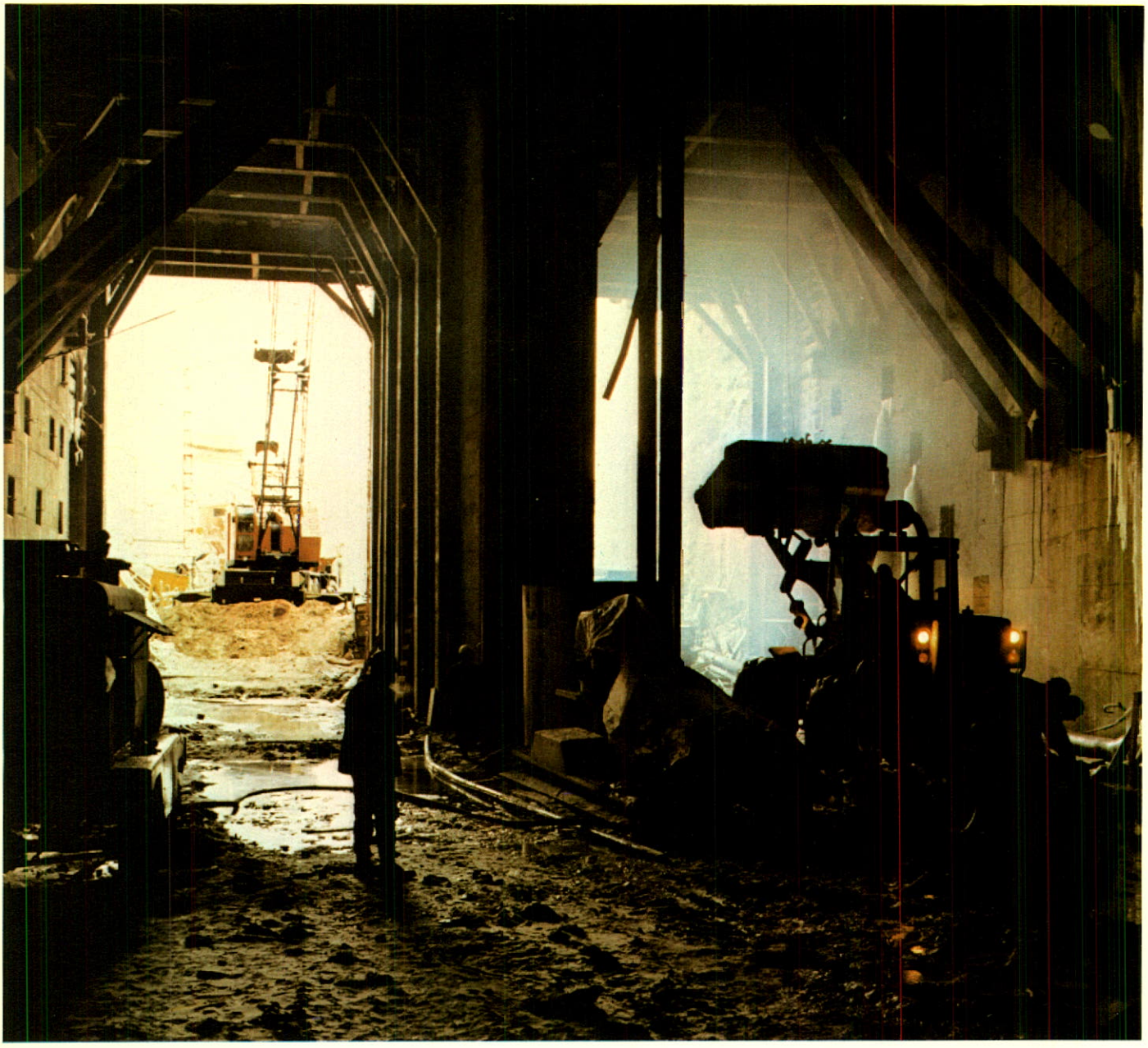
Average annual effective interest rate on long-term borrowings



Composition of long-term debt*



*Not counting sinking funds.



Capital expenditures $615,257,000

Up 11.8% over 1973
Self-financing 18.4%

Total interest charges were $267,547,000, an increase of 15.5% over 1973. Capitalized interest, that is *interest charged to construction work in progress* at James Bay, Manic 3, Outardes 2, Gentilly 2 and elsewhere, increased by 55.3% from $40,412,000 to $62,757,000. Interest charges attributable to operations were up 7.2% from $191,122,000 to $204,790,000.

Financial position

The *Consolidated Statement of Changes in Financial Position* shows that the cash flow from operations was $257,081,000, compared with $198,190,000 the previous year. This was an increase of $58,891,000 or 29.7%.

These internally generated funds include *net income before allocations to reserves* ($176,623,000) less *net profit on repurchase of debentures* ($9,184,000), which does not involve a cash inflow, plus a total of $89,642,000 for charges not requiring current cash outlays, the main one being *provision for renewals* ($78,447,000).

Some $97,066,000 of these funds were used to redeem maturing debentures (which bore an average interest rate of 6.77%), and $47,010,000 went to meet sinking fund requirements in respect of the long-term debt.

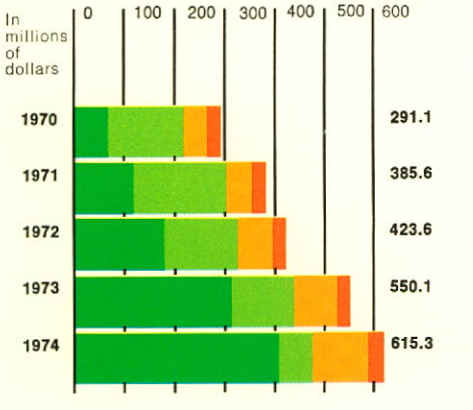
The balance of $113,005,000 was used to finance 18.4% of the year's plant investments which amounted to $615,257,000, compared with $550,121,000 the preceding year.

During 1974, long-term borrowings produced a net amount of $696,770,000, of which $689,526,000 came from new debenture issues, and $7,244,000 from an increase in other long-term debt. These borrowings enabled Hydro-Québec to finance 81.6% of the year's capital expenditures, satisfy other cash requirements and build up working capital. This build-up was accentuated by a debenture issue delivered near the year-end but intended to help finance the capital expenditures of 1975.

Loans negotiated during the year totaled $717,800,000, including $40,000,000 worth of debentures for delivery in January and April 1975. In addition, a $32,500,000 instalment of a loan negotiated in 1973 was delivered at the beginning of 1974. Hydro-Québec borrowed $405,000,000, or 56.4% of the year's total in U.S. dollars, and $299,600,000 in Canadian dollars, $110,000,000 of which was taken up by the *Caisse de dépôts et placements du Québec*. In addition, 40 million Swiss francs were borrowed at an effective interest rate of 9.3%, and this amount was then worth $13,200,000.

The effective interest rates on Hydro-Québec's 1974 borrowings varied between 7.94% and 10.80%. The average effective interest rate on all borrowings for the year was 9.76%, slightly higher than the previous maximum average of 9.68% recorded in 1970.

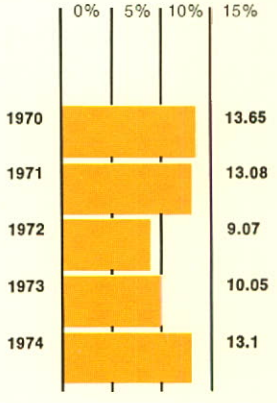
Breakdown of capital expenditures



	1970	1971	1972	1973	1974
Production*	68.4	118.9	187.8	316.0	411.6
Transmission	146.4	184.6	142.5	125.2	66.2
Distribution	53.8	57.3	66.0	86.0	105.2
Other	22.5	24.8	27.3	22.9	32.3

*La Société d'énergie de la Baie James spent $0.8 million of this amount in 1970, $28.8 million in 1971, $107.1 million in 1972, $229.2 million in 1973 and $263.2 million in 1974.

Return on net worth*



**Net income before allocations to reserves* divided by the average of reserves at the beginning and end of each year.

Residential consumption

Average annual consumption moves to 9,264 kWh from 8,456 kWh

At December 31, 1974, as a result of new borrowings, redemption of maturing issues and purchases for the sinking fund (see note 1-e of the Consolidated Financial Statements), the net amount of long-term debt stood at $4,061,972,000, an increase of $548,814,000. At the same date, reserves, which constitute Hydro-Québec's net worth, totaled $1,436,968,000 and represented 26% of invested capital. Invested capital comprises total assets less *current liabilities* and *other liabilities*.

Electricity sales

Hydro-Québec sold a total of 77.7 billion kWh* in 1974, which was 9 billion kWh or 13.1% more than the 1973 total. These sales produced $775,408,000 in revenue, or 18.5% more than the previous year. In the 10-year period from 1965 to 1974, Hydro-Québec's total sales grew 115% in volume and 169% in revenue.

Sales in Québec

In 1974, the total volume of primary-energy sales in Québec amounted to 58.7 billion kWh, or 10.4% more than the 1973 total of 53.2 billion kWh. Since 1966, the average annual increase in Québec consumption has been 7.2%, the rate that results in a doubling of consumption every 10 years.

These primary-energy sales in Québec produced revenue of $684,466,000, an increase of 14% over 1973. This increase is explained both by the higher sales volume and the rate increase that went into effect on April 20, 1973, and which applied for the first time to the operations of an entire year.

Industrial demand

In the last month of the year, the worldwide slowdown in economic activity started to have an impact on the consumption of electricity by Québec industry.

Sales to industrial customers during December were down 7.3% from the last month of the previous year. Over the entire year, however, primary-energy sales to industry amounted to 27.1 billion kWh in volume and $201,068,000 in revenue, respectively 10.3% and 17.1% more than in 1973.

In the commercial category, consumption rose 7.9% from 11.1 to 12 billion kWh, which produced $182,761,000 in revenue, or 10.9% more than in 1973.

Residential customers

Consumption by residential customers showed an increase of 13.7% in volume and 14.5% in revenue, with a total of 16.1 billion kWh being sold to these customers for revenues amounting to $252,205,000.

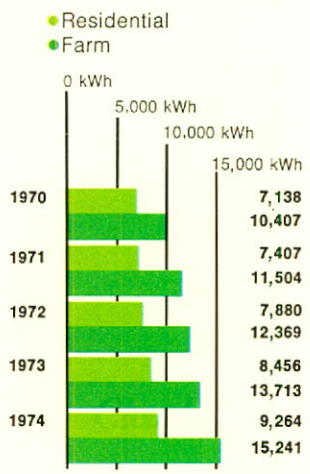
The number of residential customer accounts and their average annual consumption continued to rise.

At December 31, 1974, there were 1,764,122 residential accounts, which was 58,583 or 3.4% more than one year before. The average annual consumption per residential account was 9,264 kWh, compared with 8,456 kWh in 1973, for an increase of 9.6%.

The main reason for this substantial increase in average annual consumption was the growing use of electric heating. The number of accounts with electric heating, for all categories of customers, has more than doubled in two years. It rose from 123,000 in 1972 to 181,000 in 1973, and reached 250,000 by December 31, 1974.

Consumption by farms increased 9.4% to 1.2 billion kWh, which amounted to $16,870,000 in revenue, an increase of 10.5% over the preceding year. At December 31, 1974, there were 77,549 farm accounts and, during the year, the average

Average annual consumption per residential account and farm account*



*Based on the average of the number of accounts at the beginning and end of each year.

*kWh = kilowatthours

Increase in customer accounts

Industrial, 274
Commercial, 5,477
Residential, 58,583

consumption per farm account was 15,241 kWh, compared with 13,713 kWh in 1973.

Surplus energy

The favorable conditions of water reserves and the year's runoff permitted the sale of 7.4 billion kWh of secondary energy, or 22% more than in 1973. These sales brought in revenue of $36,542,000, as against $15,475,000 in 1973. The average selling price per kWh increased from 0.3¢ in 1973 to 0.5¢ in 1974.

Exports of secondary energy amounted to 3.2 billion kWh in volume and $23,147,000 in revenue, an increase of 28% and 179.1% respectively. Secondary energy sold in Québec produced $13,395,000, which was $6,214,000 or 86.5% more than in 1973.

Export contracts

The amount of primary or guaranteed energy exported under contract to Ontario, New Brunswick and the United States rose from 9.5 to 11.6 billion kWh. These sales produced $54,400,000, compared with $38,404,000 in 1973; the increase was nearly $16,000,000 or 41.6%.

The guaranteed power sold under contract to Ontario Hydro increased from 800 to 1,000 MW on June 1, 1974. This contract will expire on May 31, 1977.

Increased electricity needs

During 1974, the number of industrial customer accounts rose from 10,151 to 10,425.

In the commercial category, which covers a great variety of customers, from commercial centres to schools and colleges, the number of accounts stood at 213,510 at December 31, up 5,477 in one year.

Moreover, in 1974 negotiations were completed in connection with four new industrial projects which alone will represent a minimum demand of 125,000 kW and additional revenue of about $4,500,000 annually.

Two chemical plants will be completed in 1975. One near Valleyfield will have a load of 10,000 kW, the other in Bécancour industrial park will have a load of 50,000 kW. An electrometallurgy plant with a load of 60,000 kW is scheduled to go into operation in 1976 at Bécancour, and an air-separation plant with a 5,000-kW load will be installed in 1975 at Contrecoeur to meet the oxygen needs of local steel mills.

In 1974 there were 95 industrial contract renewals for the supply of electricity totaling 1,670,000 kW and including 102,000 kW in new maximum firm-power demand.

Among the large projects that were in progress or had been decided upon at the end of 1974 in the Montreal area alone, 45 were for customers who will require a total of nearly 390,000 kW.

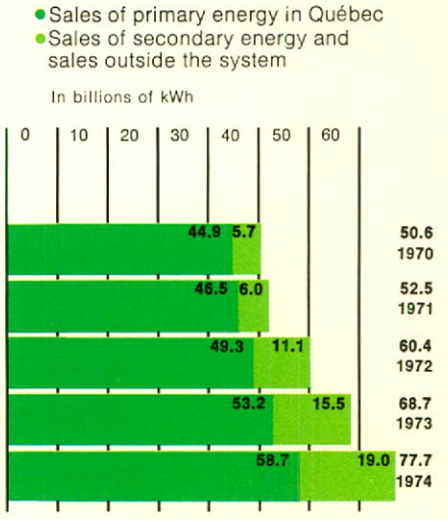
In 1975 and 1976, for example, the electrical load of the Olympic Games installations, including the Olympic Village, will reach 50,000 kW; that of the Desjardins high-rise commercial complex will reach 40,000 kW and that of the Charles des Baillets filtration plant 50,000 kW. The Montreal subway (métro), Cité Concordia, Air Canada and a number of commercial and industrial enterprises will also contribute to demand growth.

Housing construction

Housing construction remained active throughout the province but, as elsewhere, the high cost of mortgage loans, materials and manpower resulted in a sharp reduction in the number of housing starts during the last few months of the year.

In 1974, construction began on 51,642 dwelling units in Québec, as against 59,550 in 1973, a drop of 13.3%. However, the percentage of all-electric dwelling units in the new housing starts rose from 56.5 to 57.8.

Breakdown of sales



Manic 3: main dam under construction

Abundance of water

Secondary-energy sales produce $36,542,000

The number of rented electric water-heaters was 187,281 at December 31, an increase of 19,679 or 11.7%. During the year 1,225 customers took advantage of Hydro-Québec's assistance scheme for the modernization of inadequate electrical wiring, as against 2,432 in 1973.

Production

Even though the total installed capacity of the hydroelectric power stations remained unchanged, runoff and the withdrawals from water reserves resulted in a gross production of 60.1 billion kWh. This was 2.5 billion kWh or 4.3% more than in 1973.

Thermal production which had totaled 112.2 million kWh the preceding year was only 93.4 million kWh in 1974, bringing the year's total gross production from all power stations to 60.2 billion kWh.

This production, which was 99.8% hydraulic, was accompanied by a further increase in energy purchases. These purchases amounted to 25.9 billion kWh, compared with 18.4 billion kWh in 1973. Imports from the Churchill Falls plant alone rose from 13.8 to 22.2 billion kWh.

The 1974 spring runoff was the heaviest ever seen on the rivers exploited by Hydro-Québec and caused some flooding, especially in the Gatineau and Saint-Maurice valleys.

At December 31, 1974, the amount of production capacity available to meet the needs of Québec customers totaled 13,796 MW, an increase of 882 MW over the previous year. This total is made up of Hydro-Québec's own installed capacity of 11,123 MW plus 2,673 MW representing the difference between sales and purchase contracts with neighboring systems.

The 882-MW increase over 1973 results mainly from the long-term contract signed in 1969 with Churchill Falls (Labrador) Corporation Limited (see Note 8 of the Consolidated Financial Statements). During the year, the Newfoundland Government became the majority shareholder of CFLCo and it now owns 65.8% of the shares, the remaining 34.2% being held by Hydro-Québec.

The peak primary demand of Québec customers was 11,131 MW in 1974 and occurred on December 16, when the temperature was 2°C (36°F) in Montreal. The decrease of 4 MW from the preceding year's peak seems to have been mainly attributable to one of the mildest winters ever known and to the easing of industrial demand. The peak demand of 1974, however, brings the average annual increase since 1972 to 6.9%.

Construction of generating stations

The amounts required to finance construction of the new generating stations that will meet the growth in Québec's electrical-energy needs over the next few years continued to increase in 1974, to a total of $411,611,000 as opposed to $315,964,000 in 1973, an increase of 30.3%.

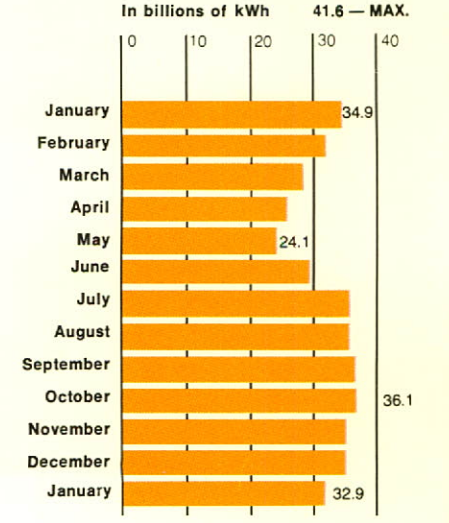
The Société d'Energie de la Baie James (SEBJ), the subsidiary responsible for developing the La Grande River, which flows into James Bay 1,046 km* (650 miles) north of Montreal, spent $263,166,000 during 1974 and work on this power complex is still in its initial stages.

Other construction work is progressing at Manic 3 and Outardes 2 to complete the harnessing of the Manicouagan and Outardes Rivers 410 km (255 miles) northeast of Québec City, and at Gentilly where Québec's second nuclear power station is being built on the south shore of the St. Lawrence River between Québec City and Montreal.

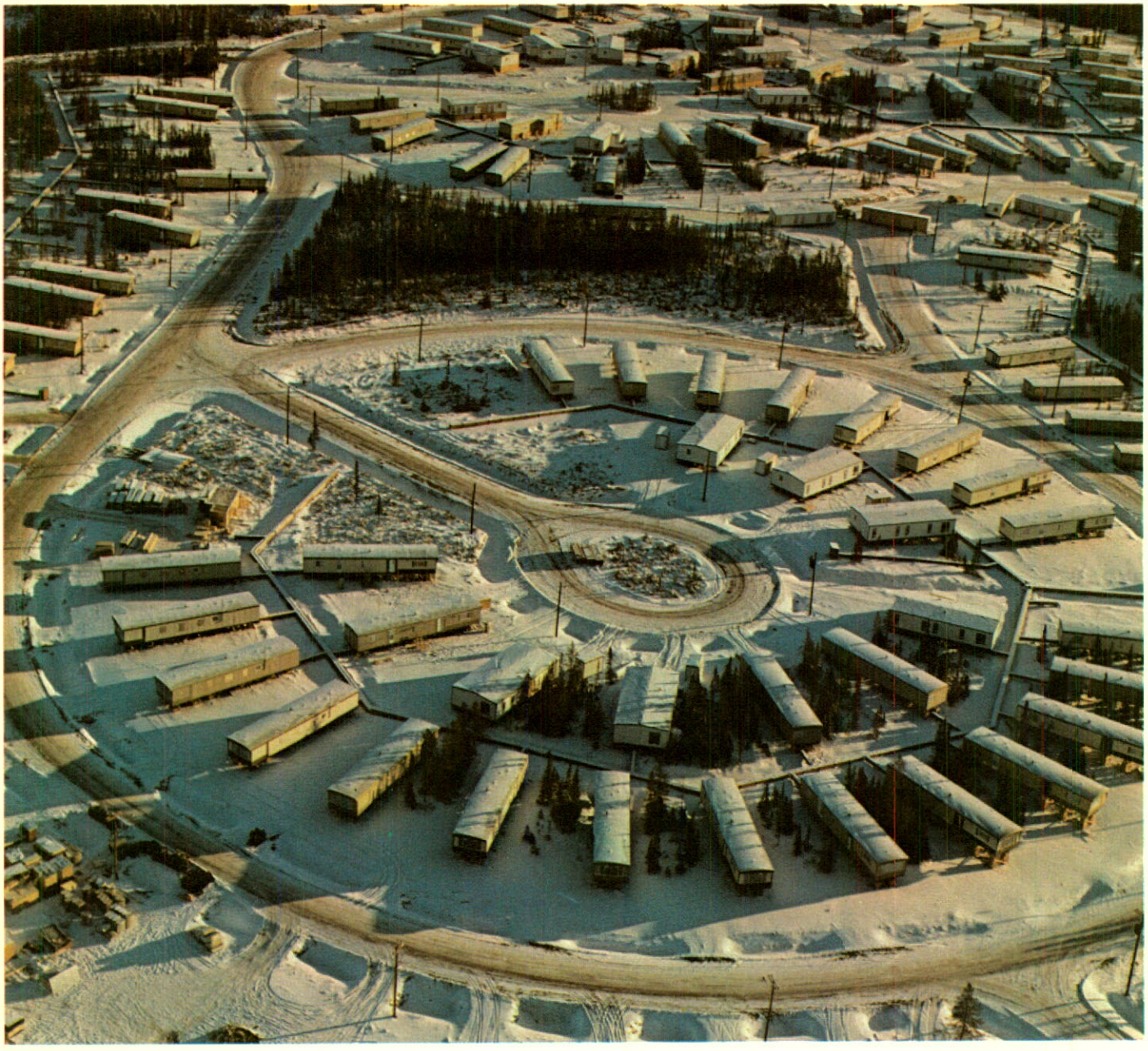
*km = kilometre

Water reserves in 1974

Accumulation of usable reserves, expressed in billions of kWh, in all reservoirs during the year. Maximum energy potential of all reservoirs is 41.6 billion kWh.



The temporary town of Radisson near LG-2



James Bay

La Grande complex to have installed capacity of 10,020 MW

Manic 3

The installation of three of the six generating units of the 1,183-MW powerhouse under construction at Manic 3 began in May 1974 and was 30 to 45% advanced by year-end. The impounding of the reservoir is scheduled to begin in August 1975 and the six generating units will be commissioned between December 15, 1975 and November 1, 1976.

Manic 3 will operate under a head of 95 metres (312 feet) and will produce on average 5.4 billion kWh a year.

Outardes 2

The preliminary work carried out in 1974 at the Outardes 2 site will be followed in the spring of 1975 by the first stages in the construction of the permanent installations.

The Outardes 2 powerhouse, which will be commissioned at the end of 1978, will have a capacity of 454 MW from three generating units operating under a head of 84 metres (277 feet) and its average annual production will total 2.6 billion kWh.

Manic 3 and Outardes 2 will bring to 5,517 MW the installed capacity of the hydroelectric complex on the Manicouagan and Outardes Rivers.

Première-Chute

A fourth and final 31-MW generating unit will be commissioned in the fall of 1975 at the Première-Chute powerhouse, on the upper reaches of the Ottawa River in northwest Québec.

Gentilly 2

The perimeter wall of the reactor building for the Gentilly 2 nuclear power station was poured completely in 15½ days during the fall of 1974. This structure, 43 metres (140 feet) high, contains approximately 6,341 cubic metres (8,300 cubic yards) of concrete.

The steel framework of the turbine hall and service wing will be erected in 1975 and the powerhouse, which will have a capacity of 637 MW, will be commissioned at the beginning of 1979. The Gentilly 2 plant will be the proven CANDU-PHW type (Canadian Deuterium Uranium, Pressurized Heavy Water) using natural uranium as fuel and heavy water as both moderator and coolant.

Gentilly 1

The 266-MW Gentilly 1 nuclear generating station, a prototype which uses ordinary water as the coolant, was put back into operation in December 1974, and electricity production should recommence in 1975.

Heavy-water plant

Gentilly 1 had been shut down in November 1972 because of a shortage of heavy water. The plant still belongs to Atomic Energy of Canada Limited (AECL) and its principal function will be to produce steam for the Laprade heavy-water plant which AECL has just begun to construct 2.4 km (1.5 miles) away.

During 1974 Hydro-Québec drew up a proposed agreement with AECL concerning supplies of electricity, steam and water to this plant which will have an annual capacity of 726 metric tons. Negotiations were started at the beginning of 1975.

La Grande River

Optimization studies carried out in 1973 enabled the size of the La Grande hydroelectric complex to be revised early in 1974. (See notes 8 and 9 to the Consolidated Financial Statements.)

The combined capacity of the four planned powerhouses has been increased from 8,330 MW to 10,020 MW and they will be able to provide 70 billion kWh annually. Moreover, the construction of two secondary powerhouses on tributaries of the La Grande could add 950 MW to the complex's installed capacity.

The diversion of parts of two neighboring rivers, the Eastmain to the south and the Caniapiscau to the east, will increase the regulated flow of the La Grande River to 3,311 cubic metres per second (117,000 cubic feet). The average natural flow at the river mouth is 1,726 cubic metres a second (60,000 cubic feet).

The four powerhouses will be placed in service between 1980 and 1985. LG-2, the largest of the four, will have an installed capacity of 5,328 MW from 16 units, making it the largest hydroelectric powerhouse in Canada.

Some installations at the LG-2 construction camp were destroyed in March 1974 as a result of a union conflict, and this delayed work for 51 days. The first units of the LG-2 powerhouse will, however, still be commissioned in time to meet the estimated increase in Québec's electricity needs in the winter of 1980-81.

The site is already linked to the Québec highway network by a 711-

New type of distribution substation at Granby

km road (442 miles) running from Matagami to LG-2 and Fort George.

Transmission system

Expenditures on new transmission facilities totaled $66,225,000 in 1974, which was $59,010,000 or 47.1% less than in 1973. This reduction is attributable mainly to the fact that nearly all the installations needed to transmit energy from the Manic-Outardes hydroelectric complex and Churchill Falls powerhouse were built in previous years, and construction of the James Bay transmission system has not yet begun.

During the year, a total of 5,591 MVA* was added to the transformer capacity of the high-voltage system in the form of new substations and additions to existing substations. The comparable figure for 1973 was 10,800 MVA. In addition, 615 km (382 miles) of circuits rated 120 kV or more were put in service during 1974, compared with 1,072 km (666 miles) in the previous year.

No new 735-kV lines were commissioned in 1974, but right-of-way clearing continued for the second 735-kV line between Jacques-Cartier substation near Québec City and Duvernay substation near Montreal. This line, which will be 240 km long (149 miles), is scheduled to be placed in service in October 1975.

Energy from James Bay

The five 735-kV transmission lines and numerous substations needed to transmit energy from the four La Grande powerhouses will be built between 1975 and 1984.

These lines will fan out from the La Grande to Montreal, Sorel, Québec City and Chicoutimi. Their lengths will range from 743 km to 1,022 km (462 miles to 635 miles). Substations along their paths will be interconnected by 735-kV tie lines, giving this new 735-kV transmission system a total length of 5,310 km (3,300 miles).

Clearing of the corridor for the first two lines will begin in 1975. During construction of these lines, which will terminate near Montreal, a 735-kV loop will be completed around the Montreal metropolitan area. About half the province's electrical load will be supplied from the substations in this loop.

Interconnection between Québec and New York

In June 1974, Hydro-Québec requested authorization from the National Energy Board to construct the first major interconnecting line between Québec and the United States. This 765-kV transmission line would be 306 km (190 miles) long, 56 km (35 miles) of this in Québec. It would permit the implementation of the energy purchase and sales contract signed in 1973 with the Power Authority of the State of New York (PASNY) after approval by the Québec cabinet and the National Assembly.

The contract is scheduled to go into effect on June 1, 1977, or whenever the interconnecting line goes into operation. From April to October inclusive, during a 20-year period, Hydro-Québec will make 800 MW available to PASNY from the Beauharnois powerhouse. During the first five years of the contract Hydro-Québec will deliver 14.1 billion kWh to PASNY for a total of $123,249,000. The contract provides for the necessary withholding rights to protect Québec customers.

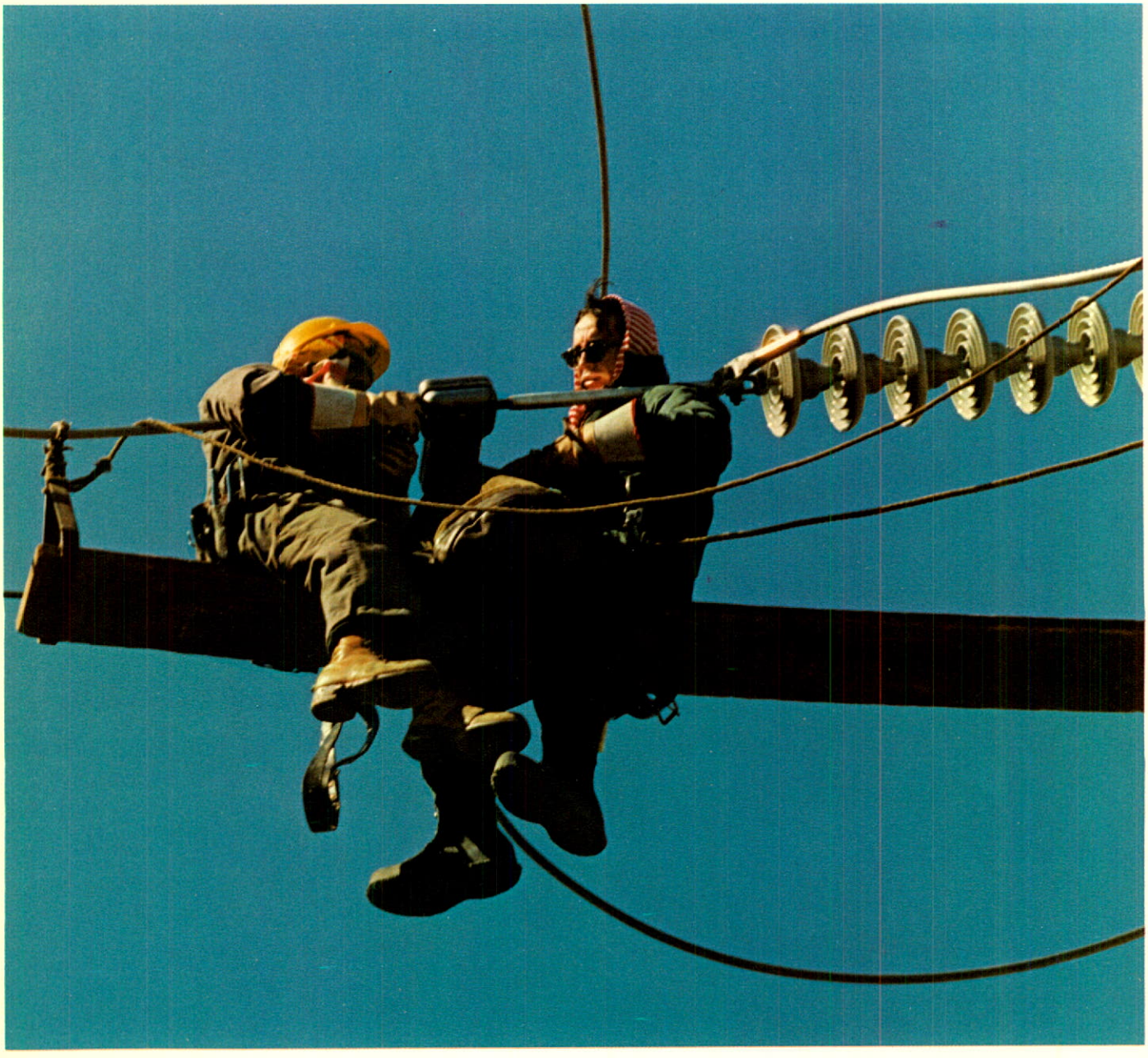
From 1982 on, PASNY must, at Hydro-Québec's request, deliver to the Québec system during the winter months all or part of the energy it received the previous summer. Delivery will be made directly by the American half of the hydroelectric plant on the St. Lawrence River between Massena, New York, and Cornwall, Ontario.

As of January 1, 1974, Hydro-Québec has been exporting certain quantities of secondary energy to New York, using a 77-km (48-mile), 120-kV, double-circuit transmission line between Les Cèdres generating station and the U.S. border near Cornwall. This line allows up to 170 MW to be delivered. Hydro-Québec has obtained the necessary export license valid to June 30, 1977, but must obtain approval for its selling price every six months from the National Energy Board.

Distribution system

Capital expenditures for the distribution system totaled $105,188,000 in 1974, an increase of $19,141,000

*1 MVA = 1 megavolt-ampere = 1,000,000 volt-amperes



Cost of living

$13,677,000 in cost-of-living bonuses given to employees and retired personnel

or 22.2%. This compared with increases of 30.4% and 15.1% recorded in 1973 and 1972 respectively.

In 1974, substantial new increases in the cost of materials and labor again coincided with shortages of materials, which considerably hampered the execution of projects. However, towards the end of the year these shortages began to lessen.

A total of 1,458 km (906 miles) of new distribution circuits rated 34 kV and less were placed in service during the year, compared with 1,609 km (1,000 miles) in 1973. This brought the total length of distribution circuits to 73,779 km (45,854 miles). Included in this total are 2,341 km (1,455 miles) of underground circuits of which 63 km (39 miles) were added in 1974.

Institute of Research

The Hydro-Québec Institute of Research (IREQ), located at Varennes on the south shore of the St. Lawrence River 32 km (20 miles) from downtown Montreal, carried out major research work for Hydro-Québec in 1974 and also executed many research and test contracts for Canadian and foreign clients.

The Institute's general-research and high-voltage laboratories are in operation, as is the first section of the high-power laboratory. The two remaining sections of this laboratory will be completed in 1975 and 1976 and will contain equipment capable of making tests at up to 1,500 kilovolts.

IREQ, however, is already known as the best equipped electrotechnical research centre in North America.

The research conducted for Hydro-Québec included studies and tests aimed at replacing porcelain insulators by a new type of insulator made of synthetic material. Such insulators would not only be lighter, stronger and easier to assemble, but they would also give a better performance in a polluted atmosphere.

At year-end, the Institute's staff numbered 318 persons.

Personnel

To mitigate the effects of higher living costs, during the year Hydro-Québec paid about $12,900,000 in cost-of-living bonuses to employees as well as $777,000 to retired personnel, making a total of $13,677,000.

Through discussion with the unions, a formula was arrived at for determining these adjustments, which apply to collective agreements expiring on December 31, 1974 in the case of the engineers' union, and on December 31, 1975 in the case of unions for trades employees, office workers, technicians and security officers.

During the year, Hydro-Québec renewed collective agreements with two unions representing 552 members, and it signed the first collective agreement with the new 99-member *Syndicat des agents de police spéciaux de l'Hydro-Québec,* which is affiliated with the Canadian Union of Public Employees (QFL).

At the year-end, Hydro-Québec's permanent staff numbered 13,679, a net increase of 652 in one year.

The number of temporary employees at construction sites averaged 2,563 in any two-week period. Wages and salaries paid during 1974 amounted to $194,716,000, as against $161,791,000 in 1973. In addition, a total of $43,712,000 was paid in wages to workers at construction sites, compared with $27,214,000 the previous year.

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Auditors' Report

We have examined the consolidated balance sheet of Hydro-Québec and its subsidiaries as at December 31, 1974, and the consolidated statements of revenue and expenditure, reserves, and changes in financial position for the year then ended. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion, these consolidated financial statements present fairly the financial position of Hydro-Québec and its subsidiaries as at December 31, 1974, and the results of their operations and the changes in their financial position for the year then ended, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Montreal, Canada,
March 19, 1975.

Samson, Bélair, Côté, Lacroix
et Associés
Chartered Accountants

H. Marcel Caron, C.A.
of Clarkson, Gordon & Co.
Chartered Accountants

Consolidated Statement of Revenue and Expenditure

(in thousands of dollars)
for the year ended December 31

		1974	1973
Revenue	Sales of electricity: primary	$738,866	$638,628
	secondary	36,542	15,475
		775,408	654,103
	Increase in unbilled revenue	7,764	7,542
		783,172	661,645
	Other operating income (net)	14,709	12,785
		797,881	674,430
Expenditure	Operating, maintenance, administration and other expenses	236,853	201,641
	Power purchased	86,930	62,753
	Provision for renewals (depreciation)	78,447	75,439
	Provincial levy on energy generated (note 2)	—	8,222
	Provincial levy (note 2)	20,000	15,000
	School and municipal taxes	18,379	18,783
		440,609	381,838
Net operating income		**357,272**	292,592
Other income	Investment income (net)	14,957	10,748
	Net profit on repurchase of debentures	9,184	8,391
Income before interest charges		**381,413**	311,731
Interest charges	Interest on long-term debt	259,472	224,062
	Interest on bank indebtedness and notes payable	4,085	3,652
	Amortization of debenture discount and expenses	3,990	3,820
	Interest charged to construction work in progress	(62,757)	(40,412)
		204,790	191,122
Net income before allocations to reserves		**$176,623**	$120,609
Allocations to reserves	Interest	**$ 88,476**	$ 77,274
	Provisions:		
	Contingencies	44,625	3,019
	Stabilization of rates	15,663	13,233
	Amortization of capital invested	27,859	27,083
		88,147	43,335
		$176,623	$120,609

See accompanying notes

Consolidated Balance Sheet

(in thousands of dollars)
as at December 31

	Assets	1974	1973
Fixed assets	Property and plant:		
	In service	$4,972,944	$4,834,478
	Less reserve for renewals (accumulated depreciation)	1,017,458	940,478
		3,955,486	3,894,000
	Construction work in progress	1,196,540	752,011
		5,152,026	4,646,011
	Construction, operating and sundry equipment, at cost, less accumulated depreciation	52,361	34,130
		5,204,387	4,680,141
Current assets	Cash and short-term investments	141,436	2,246
	Accounts receivable	99,342	80,359
	Unbilled revenue	65,182	57,418
	Materials and supplies	53,157	31,259
	Prepaid expenses	6,298	5,870
		365,415	177,152
Other assets	Investments (note 3)	132,130	132,131
	Unamortized debenture discount and expenses	62,031	55,718
	Accounts receivable	11,638	8,527
	Unamortized deferred cost on purchase of energy	37,951	33,909
		243,750	230,285
		$5,813,552	$5,087,578

	Liabilities and Reserves	1974	1973
Long-term debt	Bonds and debentures — guaranteed by the Province of Québec (notes 4 and 5)	$4,005,966	$3,447,401
	Less sinking funds (note 4)	52,809	44,400
		3,953,157	3,403,001
	Net exchange premium (note 5)	71,150	79,736
		4,024,307	3,482,737
	Other long-term debt (note 6)	37,665	30,421
		4,061,972	3,513,158
Notes payable	Notes payable within two years, of which $45,141 (1974) and $37,902 (1973) are due within one year	**45,141**	52,402
Current liabilities	Bank indebtedness	12,534	54,488
	Accounts payable and accrued liabilities	148,491	120,199
	Accrued interest	96,115	74,073
		257,140	248,760
Other liabilities	Workmen's compensation awards	2,094	2,479
	Customers' deposits and advances	10,237	10,434
		12,331	12,913
Reserves	Contingencies	567,011	488,120
	Stabilization of rates	262,284	230,444
	Amortization of capital invested	607,673	541,781
		1,436,968	1,260,345
		$5,813,552	$5,087,578

See accompanying notes

On behalf of Hydro-Québec:
(signed) Roland Giroux
(signed) Yvon DeGuise

Montreal, Canada,
March 19, 1975.

(signed) E.-A. Lemieux,
General Manager,
Finance and Accounting.

Consolidated Statement of Reserves

(in thousands of dollars)
for the year ended December 31

	1974				1973
	Contingencies	Stabilization of rates	Amortization of capital invested	Total	Total
Balance, beginning of year	$488,120	$230,444	$541,781	$1,260,345	$1,139,736
Add:					
Interest	34,266	16,177	38,033	88,476	77,274
Provisions	44,625	15,663	27,859	88,147	43,335
Balance, end of year	**$567,011**	**$262,284**	**$607,673**	**$1,436,968**	$1,260,345

See accompanying notes

Consolidated Statement of Changes in Financial Position

(in thousands of dollars)
for the year ended December 31

	1974	1973
Financial resources were provided by		
Operations		
Net income before allocations to reserves	$176,623	$120,609
Less net profit on repurchase of debentures	9,184	8,391
	167,439	112,218
Plus:		
Provision for renewals (depreciation)	78,447	75,439
Depreciation of operating equipment	6,929	6,539
Amortization of debenture discount and expenses	3,990	3,820
Amortization of deferred cost on purchase of energy	276	174
Total funds from operations	**257,081**	198,190
Issue of debentures (less discount and expenses)	689,526	425,584
Increase in other long-term debt	7,244	3,204
Sundry items (net)	5,530	6,284
	$959,381	$633,262
Financial resources were applied to		
Additions to fixed assets	$615,845	$550,726
Less depreciation of construction equipment	588	605
	615,257	550,121
Maturities of bonds and debentures	97,066	94,877
Purchase of sinking fund investments (cost)	47,010	47,200
Decrease in notes payable	7,261	17,665
Increase in deferred cost on purchase of energy	4,318	7,662
Net exchange premium	8,586	1,037
Increase (decrease) in working capital	179,883	(85,300)
	$959,381	$633,262

See accompanying notes

Notes to Consolidated Financial Statements
December 31, 1974

Note 1

Summary of significant accounting policies

A summary of the major accounting policies of Hydro-Québec is presented below to assist the reader in analyzing the consolidated financial statements.

a) Consolidation

The consolidated financial statements include the financial statements of Hydro-Québec and of all its subsidiary companies including Société d'énergie de la Baie James.

b) Investments (see note 3)

All of the short-term investments mature within three months and are shown at cost, which approximates market. The long-term investments are carried at cost.

c) Materials and supplies

Hydro-Québec values its inventories of materials and supplies on the basis of average cost. These materials and supplies are primarily those required for the construction and maintenance of its distribution system.

d) Unamortized deferred cost on purchase of energy

In accordance with the terms of a contract with Churchill Falls (Labrador) Corporation Limited (see note 8), Hydro-Québec is obligated to pay to the Corporation an amount equal to a part of the interest charges on the First Mortgage Bonds, General Mortgage Bonds and other indebtedness of the Corporation. A portion of the payments made before the plant reached full production is being amortized over the life of the contract by charges to the cost of power purchased.

e) Sinking funds

Hydro-Québec invests substantially all of its sinking funds in its own debentures and in bonds of its subsidiaries and follows the practice of carrying these investments at par, which may not be indicative of cost or current market value. The resulting profit, net of unamortized debenture or bond discount and other expenses, is credited to revenue and expenditure. Debentures or bonds of an issue purchased for the sinking fund of that issue are cancelled.

f) Foreign exchange translation (see note 5)

Consolidated long-term debt payable in U.S. currency is carried in the accounts at the rate of $1 U.S. equals $1 Canadian, while consolidated long-term debt payable in Deutsche Marks and Swiss Francs is carried in the accounts at the Canadian dollar equivalent at the dates of borrowing.

The adjustment arising from the conversion of debt payable in U.S. funds into Canadian funds at the rates of exchange in effect at the time the debt was incurred or included in consolidation, less the exchange premium on debentures purchased for sinking funds, is carried on the consolidated balance sheet in a separate account called net exchange premium.

g) Reserves

The Hydro-Quebec Act requires Hydro-Québec to accumulate reserves for contingencies, stabilization of rates and amortization of capital invested. In addition to the amounts provided for the respective reserves at the end of each year, Hydro-Québec, as required by the Act, credited to reserves interest on the amounts of the reserves at the average cost of money to Hydro-Québec in each year as follows: 7.02% in 1974 and 6.78% in 1973.

h) Property and plant and Reserve for renewals (accumulated depreciation)

Property and plant are carried at cost. Expenditures for additions, improvements and renewals are capitalized and expenditures for maintenance and repairs are charged against income. When assets are sold or retired, their cost and accumulated depreciation are removed from the accounts and any gain or loss resulting from their disposal is amortized over a period of 10 years on a sinking fund method.

Hydro-Québec uses a uniform sinking fund method of providing for depreciation of its own and its subsidiaries' property and plant, including intangible assets, based on their respective service lives. The rate of interest used in the sinking fund method is 3%.

The expected service lives for the main categories of property and plant in service are as follows:

Class	Life
Hydraulic power houses	50 years
Hydraulic turbines and generators	40 years
Dams and reservoirs	50 years
Transmission towers (steel) and conductors	50 years
Distribution poles (wood)	25 years
Distribution conductors	40 years
Intangible assets	25 years

Note 1 — Summary of significant accounting policies (cont'd)

i) Interest charged to construction work in progress

Interest is charged to construction work in progress at a rate equivalent to the weighted average of the effective interest rates on debentures of Hydro-Québec issued to finance such construction which rate was 8.20% in 1974 and 8.49% in 1973.

j) Unbilled revenue

Revenues are recorded on the basis of cycle billings and accrued in respect of energy delivered but not billed.

Note 2

Provincial levy

In 1973, the Provincial Government cancelled the provincial levy on energy generated. From April 1, 1973, Hydro-Québec is subject to an annual payment to the Provincial Government of $20 million out of its gross revenue.

Note 3

Investments, at cost

Churchill Falls (Labrador) Corporation Limited (see note 8)	1974 ($'000')	1973 ($'000')
General Mortgage Bonds, 7½%, due 2010 (par value $100 million)	$ 90,500	$ 90,500
Common shares	34,333	34,333
	124,833	124,833
Gelco Enterprises Ltd., 4% unsecured note, due 1991	7,195	7,195
Sundry investments	102	103
	$132,130	$132,131

The share of Hydro-Québec in the earnings of Churchill Falls (Labrador) Corporation Limited since the date of acquisition amounts to $13,822,000 at December 31, 1974, of which $7,023,000 and $4,473,000 was earned in 1974 and 1973 respectively.

Note 4

Bonds and debentures

Series	Interest rate	Year of issue	Year of maturity	Bonds and debentures ($'000')	Sinking fund investments ($'000')
Debentures of Hydro-Québec					
*"K"	3½%	1953	1978	$ 35,103 U.S.	$ 15,209
*"M"	3½%	1955	1975	26,904	2,232
*"N"	3½%	1956	1981	32,417 U.S.	10,077
*"O"	4¼%	1956	1976	17,680	730
*"P"	4¼%	1956	1981	22,901 U.S.	6,156
*"Q"	4⅜%	1957	1977	29,559 U.S.	50
*"S"	5%	1957	1975, 1982	20,415	160
*"T"	3¾%	1958	1983	27,992 U.S.	235
*"V"	5%	1958	1979	14,944	
*"W"	5%	1959	1980	21,205	
*"X"	5%	1959	1984	34,535 U.S.	
*"Y"	6%	1959	1979	18,834	300
*"Z"	5½%	1960	1982	25,560	
*"AA"	5½%	1960	1983	19,386	
*"AB"	5½%	1961	1985	31,621	625
*"AC"	5½%	1961	1985	28,651	200
*"AD"	5½%	1962	1982	32,872	700
*"AF"	5¾%	1962	1984	41,980	
*"AG"	5%	1963	1988	244,864 U.S.	
*"AM"	5¼%	1963	1986	39,666	
*"AN"	5½%	1964	1984, 1994	33,008	
*"AO"	4½%	1964	1994	50,000 U.S.	11,364

Note 4 — Bonds and debentures *(cont'd)*

Series	Interest rate	Year of issue	Year of maturity	Bonds and debentures ($'000')	Sinking fund investments ($'000')
*"AP"	4¾%	1964	1989	39,895 U.S.	
*"AQ"	5½%	1964	1988	49,697	
*"AR"	5½%, 5%	1965	1987, 1995	61,883	278
*"AS"	4⅝%	1965	1985	45,242 U.S.	
*"AT"	5¼%	1966	1987	44,985 U.S.	
*"AU"	6%	1966	1991	44,284	
*"AV"	5⅜%	1966	1992	55,248 U.S.	
*"AW"	6%	1966	1980, 1990	43,718	372
*"AX"	6¼%	1966	1991	37,014 U.S.	
*"AY"	6¼%	1967	1993	55,755 U.S.	
*"AZ"	6½%	1967	1978, 1990	45,020	100
*"BA"	6¼%	1967	1993	47,680 U.S.	
*"BB"	6½%	1967	1992	47,628 U.S.	
*"BC"	6¾%, 7%, 6%, 7%	1967	1975-1977, 1980, 1994	49,500	
*"BD"	6⅞%	1968	1989	57,615 U.S.	
*"BE"	7½%, 7½%, 7%	1968	1975-1978, 1980, 1994	42,800	
*"BF"	7¾%	1968	1986	23,990 U.S.	
*"BG"	7¼%	1968	1991	47,897 U.S.	
* —	6¾%	1969	1984 (150 million Deutsche Marks)	40,216	4,021
* —	7¼%	1969	1984 (100 million Deutsche Marks)	27,045	
*"BH"	7¾%	1969	1990	206	
*"BI"	8¾%	1969	1999	50,000 U.S.	
"BJ"	8%	1969	1979	5,861 U.S.	
*"BK"	8½%	1969	1992	25,287	
*"BL"	9¾%	1969	1995	50,000 U.S.	
*"BM"	9½%	1970	1975, 1990	50,000	
*"BN"	9¼%	1970	1995	60,000 U.S.	
*"BO"	9½%	1970	1990	28,915	
*"BP"	9½%	1970	1997	75,000 U.S.	
*"BQ"	9¼%	1970	1985	12,600 U.S.	
*"BR"	8¾%	1971	1999	75,000 U.S.	
*"BS"	8¼%	1971	1986	17,600 U.S.	
*"BT"	7¾%	1971	1996	48,410	
*"BU"	8¾%	1971	1996	48,529	
* —	8%	1971	1986 (100 million Deutsche Marks)	29,835	
*"BV"	8½%	1971	2001	75,000 U.S.	
*"BW"	8½%	1971	1986	25,000 U.S.	
*"BX"	7⅞%	1972	2002	100,000 U.S.	
* —	6½%	1972	1987 (100 million Deutsche Marks)	31,391	
*"BY"	8¼%	1972	1997	48,982	
*"BZ"	8¼%	1972	1993	58,800	
*"CA"	8%, 8⅜%	1972	1980, 1997	63,884	
"CB"	8¼%	1972	1996	50,000	
* —	6¼%	1972	1987 (80 million Swiss Francs)	21,021	
*"CC"	7½%	1973	2003	125,000 U.S.	
"CD"	8%	1973	1998	50,000	
* —	6½%	1973	1988 (100 million Deutsche Marks)	35,234	
"CE"	8¼%	1973	1998	55,000	
*"CF"	8½%	1973	2003	100,000 U.S.	
"CG"	8¾%	1973	1998	50,000	
"CH"	8½%	1973	1998	50,000	
*"CI"	8¼%	1974	2004	125,000 U.S.	
*"CJ"	8½%	1974	1989	30,000 U.S.	
"CK"	9%	1974	1999	60,000	

Note 4 — Bonds and debentures *(cont'd)*

Series	Interest rate	Year of issue	Year of maturity	Bonds and debentures ($'000')	Sinking fund investments ($'000')
"CL"	9⅞%	1974	1996	80,000	
•"CM"	10⁷⁄₁₀%	1974	1999	110,000 U.S.	
—	9%	1974	1979 (40 million Swiss Francs)	13,200	
"CN"	10%	1974	1980	50,000	
"CO"	10%	1974	1982	100,000	
"CP"	10%	1974	1982	100,000 U.S.	
Total debentures of Hydro-Québec				**$3,941,964**	**$ 52,809**

•Sinking fund debentures

Bonds of subsidiaries

The Shawinigan Water and Power Company					
"Q"	3%	1950	1975	$ 14,650 U.S.	
"R"	4¾%	1956	1976	10,085	
"S"	5¾%	1961	1981	13,330	
Southern Canada Power Company, Limited					
"B"	3½%	1946	1976	5,110	
"C"	3½%	1948	1976	2,400	
"D"	3⅜%	1951	1981	2,500	
Quebec Power Company					
"G"	6¼%	1962	1982	11,497	
Lower St. Lawrence Power Company					
"F"	5⅞%	1959	1984	850 U.S.	
Saguenay Electric Company					
"A"	5½%	1962	1982	3,580	
Total bonds of subsidiaries				**64,002**	
Total bonds and debentures				**$4,005,966**	**$ 52,809**

Subsequent to year-end, Hydro-Québec issued or has agreed to issue the following debentures:

Series	Interest rate	Date of issue	Year of maturity	Amount ($'000')
"CQ"	10¼%	January 21, 1975	2005	$ 174,650 U.S.
"CM"	10⁷⁄₁₀%	January 30, 1975	1999	19,250 U.S.
"CR"	9%, 9¾%	February 6, 1975	1985, 2000	120,000
"CM"	10⁷⁄₁₀%	April 2, 1975	1999	20,750 U.S.
"CQ"	10¼%	April 15, 1975	2005	5,000 U.S.
"CQ"	10¼%	May 15, 1975	2005	8,250 U.S.
"CQ"	10¼%	June 30, 1975	2005	12,100 U.S.

Bonds of subsidiaries are guaranteed by Hydro-Québec, which guarantee is in turn guaranteed by the Province of Québec.

Consolidated long-term debt maturities and sinking fund requirements in each of the next five years are approximately as follows:

	($'000')
1975	$151,087
1976	98,034
1977	96,461
1978	112,486
1979	128,709

Note 5

Net exchange premium

Consolidated long-term debt at December 31, 1974 includes $2,100,675,000 U.S., 534 million Deutsche Marks and 120 million Swiss Francs.

If the net long-term debt payable in foreign currencies were converted into Canadian dollars at the rates of exchange prevailing at December 31, 1974, the premium required would be approximately $18,482,000 less than the net exchange premium shown on the consolidated balance sheet. As a result, if the total long-term debt payable in various currencies in the principal amount of $4,061,972,000 at December 31, 1974 were converted into Canadian dollars at the rates of exchange prevailing on this date, this principal amount would be $4,043,490,000.

Note 6

Other long-term debt

	1974 ($'000')	1973 ($'000')
Rural Electrification Bureau, 1975-1994*	$ 7,027	$ 7,727
Government of Canada, 1975-1999**	20,618	18,747
Atomic Energy of Canada Limited**	8,000	—
Other long-term debt maturing from 1975 to 1984	2,020	3,947
	$37,665	$30,421

*Does not bear interest as long as there is no default under the provisions of the governing agreements.

**Notes guaranteed by the Province of Québec at various rates from 7 3/16% to 9 5/8% payable in 25 equal annual instalments following completion of the project involved.

Note 7

Pensions

The Hydro-Québec employees' retirement plan is a contributory, benefit-based plan, under which the benefits payable are guaranteed by Hydro-Québec. Hydro-Québec amortizes the initial actuarial deficit in respect of services prior to 1966, which amounted to approximately $30 million at December 31, 1971 as determined by an actuarial survey at that date, over a period ending December 31, 1995. It also amortizes the experience deficiency for current services, which amounted to approximately $11 million for the years 1969 to 1971, over a period of 5 years.

The total pension cost of $16,959,000 for 1974 ($15,571,000 for 1973) provides fully for Hydro-Québec's contribution to the Québec Pension Plan and to the Retirement Fund in respect of current services, interest on the actuarial deficit in respect of past services and amortization of this deficit over a period ending December 31, 1995.

An additional past service obligation, which amounted to approximately $32 million at December 31, 1971 as determined by an actuarial study at that date, related to supplementary amounts that Hydro-Québec has decided to pay effective January 1, 1972 in order to assure a minimum pension of $1,200 per year and to adjust the pensions paid or to be paid to the pensioners of the subsidiaries acquired in 1963, is being substantially amortized over a period of 30 years by annual charges to operations. Hydro-Québec paid $1,809,000 in 1974 ($1,701,000 in 1973) in respect of these benefits.

An actuarial survey of the plan and of Hydro-Québec's commitments relative to the above-mentioned past service obligation, as at December 31, 1974, will be completed in 1975.

Note 8

Churchill Falls

Commitments

In May 1969, Hydro-Québec executed a contract with Churchill Falls (Labrador) Corporation Limited ("CFLCo") for the purchase, starting in 1972, of a very large amount of energy from a generating station at Churchill Falls in Labrador with a rated capacity of 5,225,000 kilowatts. At December 31, 1974, Hydro-Québec holds 34.2% of the common stock of CFLCo and $100 million of its General Mortgage Bonds at a total cost of approximately $124.8 million.

The power contract provides for the purchase by Hydro-Québec for a period of 40 years from the Effective Date as defined in the power contract (September 1, 1976) of all the power generated at Churchill Falls except for amounts required (not exceeding 12% of the energy generated) by Newfoundland. This contract will be automatically renewed for a further period of 25 years, upon already agreed terms. The price to be paid by Hydro-Québec for the energy will vary until the year 2016 and will depend upon the final cost of construction of the plant. It is estimated that the maximum total annual payments by Hydro-Québec for energy will range from $93

Note 8 — Commitments *(cont'd)*

million to $80 million until the year 2016 and will be approximately $63 million during the remaining 25 years. In addition, Hydro-Québec is obligated to pay CFLCo an amount equal to a part of the interest charges on the First Mortgage Bonds, General Mortgage Bonds and other indebtedness of CFLCo. Hydro-Québec estimates that these payments will not exceed $15 million per annum, declining as the bonds and other indebtedness are retired. Subject to certain limitations and compensations, the contract requires Hydro-Québec to make payments for energy whether or not taken; Hydro-Québec can also be required to make additional advances, against the issue of units of Subordinated Debentures and shares of Common Stock, to service the debt of CFLCo and to cover its expenses if funds are not otherwise available.

James Bay

In 1971, the Quebec Government created Société de développement de la Baie James to undertake the development of the natural resources in northwestern Quebec and Société d'énergie de la Baie James to develop the hydro-electric resources of the same area.

At December 31, 1974, all the shares of the authorized capital stock of Société d'énergie de la Baie James were either owned or subscribed for by Hydro-Québec.

A decision was made in 1972 to construct four generating plants on the La Grande River and the extent of this project has been revised in 1974 to have a projected capacity of 10,040,000 kilowatts at an estimated cost of $11.9 billion with completion expected in 1985. At December 31, 1974, $640 million had been invested in the project.

Other commitments

Commitments in respect of construction contracts and for the purchase of equipment amounted to approximately $721 million at December 31, 1974, including $427 million for Société d'énergie de la Baie James.

Note 9

Litigation

In May 1972, certain Indian chiefs and Eskimos instituted proceedings in the Superior Court for the District of Montreal to have the James Bay Region Development Act declared unconstitutional and ultra vires of the jurisdiction of the legislature of Quebec, and, in addition, to obtain a permanent order of injunction to prevent the carrying out of all works in the James Bay territory related to this Act. Hearings on these proceedings have not yet commenced.

In November 1972, procedures for an interlocutory injunction were instituted to stop the carrying out of these works until a final judgment is obtained on the permanent injunction. In November 1973, the Superior Court granted the requested interlocutory injunction, but it was suspended by the Court of Appeal of the Province of Quebec in the same month. On November 21, 1974, the Court of Appeal set aside the judgment rendered by the judge of the Superior Court and dismissed the petition for an interlocutory injunction. On February 13, 1975, the Supreme Court of Canada has granted an application for leave to appeal from the said Appeal Court judgment, presented by the Indians and Eskimos.

On November 15, 1974, an agreement in principle was entered into by the Indians and Eskimos and the Province of Quebec, Société d'énergie de la Baie James, Société de développement de la Baie James, Hydro-Québec and the Government of Canada whereby the parties have undertaken to execute no later than November 1, 1975 a final agreement providing for the extinguishment of all claims of the Indians and Eskimos in and to the territory on which the project is located in consideration, among other things, of monetary compensation and the introduction of certain changes to the project, including moving one of the installations some 32 miles upstream resulting in a loss of approximately 300,000 kilowatts, which reduced the projected capacity of the project to 10,040,000 kilowatts. The monetary compensation includes payment of $150 million which will be paid over a number of years by the Province of Quebec and the Government of Canada. The extent of Hydro-Québec's responsibility with respect to such payments has not yet been determined.

Summary of Consolidated Revenue and Expenditure

(in thousands of dollars)

		1974	1973	1972	1971	1970
Revenue	Sales of electricity: primary	$738,866	$638,628	$552,768	$503,139	$466,543
	secondary	36,542	15,475	8,377	15,175	11,703
		775,408	654,103	561,145	518,314	478,246
	Increase in unbilled revenue	7,764	7,542	7,449	5,963	4,820
		783,172	661,645	568,594	524,277	483,066
	Other operating income (net)	14,709	12,785	11,554	11,282	11,253
		797,881	674,430	580,148	535,559	494,319
Expenditure	Operating, maintenance, administration and other expenses (1)	236,853	201,641	172,300	149,897	144,344
	Power purchased	86,930	62,753	34,446	15,738	15,647
	Provision for renewals (depreciation)	78,447	75,439	70,030	64,103	58,805
	Provincial levy on energy generated	—	8,222	29,882	29,057	27,784
	Provincial levy	20,000	15,000	—	—	—
	School and municipal taxes	18,379	18,783	18,875	19,070	18,182
		440,609	381,838	325,533	277,865	264,762
Net operating income		**357,272**	292,592	254,615	257,694	229,557
Other income	Investment income (net)	14,957	10,748	10,573	10,094	10,564
	Net profit on repurchase of debentures	9,184	8,391	7,561	9,547	8,796
Income before interest charges		**381,413**	311,731	272,749	277,335	248,917
Interest charges	Interest on long-term debt	259,472	224,062	191,511	167,800	148,443
	Interest on bank indebtedness and notes payable	4,085	3,652	4,636	8,007	12,721
	Amortization of debenture discount and expenses	3,990	3,820	3,524	3,311	3,190
	Interest charged to construction work in progress	(62,757)	(40,412)	(25,825)	(29,535)	(32,079)
		204,790	191,122	173,846	149,583	132,275
Net income before allocations to reserves		**$176,623**	$120,609	$ 98,903	$127,752	$116,642
Allocations to reserves	Interest	**$ 88 476**	$ 77,274	$ 68,487	$ 57,250	$ 46,910
	Provisions:					
	Contingencies	44,625	3,019	—	36,203	38,227
	Stabilization of rates	15, 663	13,233	4,653	10,485	9,661
	Amortization of capital invested	27,859	27,083	25,763	23,814	21,844
		88,147	43,335	30,416	70,502	69,732
		$176,623	$120,609	$ 98,903	$127,752	$116,642

(1) Including fuel $137 – 1974; $312 – 1973; $848 – 1972; $1,669 – 1971; $3,827 – 1970.

Five-Year Consolidated Sales and Revenue

		1974	1973	1972	1971	1970
Electric Energy Generated and Purchased (in millions of kWh)	Generated (net)	59,893	57,514	55,660	54,134	52,165
	Purchased	25,938	18,390	11,560	4,200	4,001
		85,831	75,904	67,220	58,334	56,166
	Losses and internal use	6,557	5,605	5,272	4,640	4,422
	Delivered as per agreement (net)	997	1,038	665	625	858
	Increase in unbilled sales	582	581	887	570	274
	Total electric energy sold	**77,695**	68,680	60,396	52,499	50,612
Electric Sales (in millions of kWh)	Domestic and farm	17,260	15,215	13,703	12,503	11,696
	Commercial (including Municipal)	12,033	11,149	10,629	9,096	6,684
	Industrial: Primary	27,100	24,566	22,766	22,369	24,032
	Secondary	2,710	2,171	1,573	439	574
	Street lighting and luminaires	539	512	457	453	429
	Transportation	142	160	164	164	161
	Wholesale: Primary	13,123	10,965	9,194	5,008	3,784
	Secondary	4,654	3,863	1,848	2,395	2,569
	Interdepartmental	134	79	62	72	683
	Total electric sales	**77,695**	68,680	60,396	52,499	50,612
Sales Revenue (in thousands of dollars)	Domestic and farm	$269,075	$235,615	$203,038	$189,293	$174,231
	Commercial (including Municipal)	182,761	164,842	152,299	134,539	103,303
	Industrial: Primary	201,068	171,760	147,949	144,903	159,122
	Secondary	9,042	5,228	3,655	1,665	2,115
	Street lighting and luminaires	17,083	15,196	13,437	12,720	11,586
	Transportation	1,420	1,482	1,371	1,402	1,306
	Wholesale: Primary	67,053	49,472	34,469	20,046	14,921
	Secondary	27,500	10,247	4,722	13,510	9,588
	Interdepartmental	406	261	205	236	2,074
	Total sales revenue	**$775,408**	$654,103	$561,145	$518,314	$478,246
Average Revenue (cents per kWh)	Domestic and farm	1.559¢	1.549¢	1.482¢	1.514¢	1.490¢
	Commercial (including Municipal)	1.519¢	1.479¢	1.433¢	1.479¢	1.545¢
	Industrial: Primary	0.742¢	0.699¢	0.650¢	0.648¢	0.662¢
	Secondary	0.334¢	0.241¢	0.232¢	0.379¢	0.368¢
	Wholesale: Primary	0.511¢	0.451¢	0.375¢	0.400¢	0.394¢
	Secondary	0.591¢	0.265¢	0.256¢	0.564¢	0.373¢
	Other	2.320¢	2.256¢	2.198¢	2.084¢	1.176¢
Total Customer Accounts	(year-end)	**2,080,650**	2,017,079	1,943,119	1,895,082	1,852,292
Domestic and Farm Accounts	(year-end)	**1,841,671**	1,783,871	1,716,529	1,669,523	1,632,393

Statistics of Electricity Generated and Purchased and its Disposal in 1974

Gross Generation		The consolidated system (in millions of kWh)	
Hydro-Electric Stations			
Upper Ottawa	(5 plants)		2,656
Gatineau	Paugan	1,135	
	Others (3 plants)	1,345	2,480
Lower Ottawa	Carillon	2,987	
	Others (7 plants)	967	3,954
Upper Saint Lawrence	Beauharnois	11,879	
	Other (1 plant)	995	12,874
Saint Maurice	La Trenche	1,844	
	Beaumont	1,581	
	La Tuque	1,368	
	Shawinigan 3	1,006	
	Others (4 plants)	3,966	9,765
Bersimis	Bersimis 1	6,015	
	Bersimis 2	2,795	8,810
Outardes	Outardes 3	3,690	
	Outardes 4	3,319	7,009
Manicouagan	Manic 5	6,584	
	Manic 2	4,783	
	Manic 1	571	11,938
Other rivers	(14 plants)		610
Total	(48 hydro-electric stations)		60,096
Thermal-Electric Stations	(15 plants until the end of October, then 14 plants thereafter)		93
Total gross generation	(64 plants, then 63)		60,189
Less: station use			296
Total generation (net)			59,893
Purchased from	Alcan		2,513
	Maclaren-Quebec Power Co.		657
	Churchill Falls (Labrador) Corporation Limited		22,152
	Sundry Purchases		616
Total			25,938
Less: delivered as per agreement (net)			997
Energy supplied			24,941
Net system total output			84,834
Total sales			77,695
Increase in unbilled sales			582
Losses			6,557
System peaks (MW)	Primary		12,848
	Secondary		273
	Foreign network support		108

Hydro-Québec Employees' Retirement Fund

Auditors' Report

We have examined the statement of assets and reserve of the Hydro-Québec Employees' Retirement Fund as at December 31, 1974 and the statement of revenue and expenditure for the year then ended. Our examination included a general review of the accounting procedures and such tests of accounting records and other supporting evidence as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the assets of the Fund as at December 31, 1974 and its revenue and expenditure for the year then ended, in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Montreal, Canada,
March 19, 1975.

Samson, Bélair, Côté, Lacroix
et Associés
Chartered Accountants

H. Marcel Caron, C.A.
of Clarkson, Gordon & Co.
Chartered Accountants

Hydro-Québec Employees' Retirement Fund

Statement of Revenue and Expenditure

(in thousands of dollars)
for the year ended December 31

		1974	1973
Revenue	Current contributions:		
	Employees	$ 6,376	$ 5,752
	Hydro-Québec	12,589	11,301
		18,965	17,053
	Contribution by Hydro-Québec for initial actuarial deficit (note)	2,108	8,426
		21,073	25,479
	Additional past service contributions less cancellations	37	191
		21,110	25,670
	Less refunded to employees leaving service	406	451
		20,704	25,219
	Revenue from investments	12,295	9,584
		32,999	34,803
Expenditure	Pensions paid	3,556	3,380
Net revenue transferred to reserve		**$29,443**	$31,423

See accompanying note

Hydro-Québec Employees' Retirement Fund

Statement of Assets and Reserve

(in thousands of dollars)
as at December 31

		1974	1973
Assets (note)	Investments, at cost:		
	Bonds of, or guaranteed by the Province of Québec	$132,915	$115,164
	Municipal and School Commission bonds	24,257	19,907
	Government of Canada bonds	336	336
	(Par value $164,070, market value $140,141)	**157,508**	135,407
	Common stocks (market value $806)	1,486	1,486
	Short-term investment, guaranteed by the Province of Québec	12,000	6,000
		170,994	142,893
	Accrued interest on investments	3,512	2,858
	Past service contributions receivable from employees	76	86
	Amount receivable from (payable to) Hydro-Québec	553	(145)
		$175,135	$145,692
Reserve	Balance, beginning of year	$145,692	$114,269
	Net revenue for the year	29,443	31,423
	Balance, end of year	**$175,135**	$145,692

See accompanying note

On behalf of Hydro-Québec:
(signed) Roland Giroux
(signed) Yvon DeGuise

(signed) E.-A. Lemieux,
General Manager,
Finance and Accounting.

Montreal, Canada,
March 19, 1975.

Hydro-Québec Employees' Retirement Fund

Note to Financial Statements

December 31, 1974

These statements show only the position of the assets of the Hydro-Québec Employees' Retirement Fund, but do not purport to show the adequacy of the fund to meet the obligations of the Hydro-Québec retirement plan which are guaranteed by Hydro-Québec. An actuarial survey of the obligations of the plan as of December 31, 1971 shows an actuarial deficit in respect of services prior to 1966 of approximately $30 million, and an experience deficiency at December 31, 1971 in respect of current services of approximately $9 million.

Hydro-Québec assumes the annual amortization ($2,108,000) of the initial actuarial deficit over a period ending December 31, 1995 and made a special contribution of $8,426,000 to the fund in 1973 with regard to this amortization, for the years 1970 to 1973 inclusive. The experience deficiency at December 31, 1971 for current services is being amortized over a period of 5 years, from 1972 to 1976 inclusive. As a result, contributions to the fund are sufficient to cover obligations in respect of current services, interest on the above actuarial deficit in respect of past services and the amortization of this deficit over a period ending December 31, 1995.

An actuarial survey of the plan at December 31, 1974 will be completed in 1975.

HYDRO-QUÉBEC GENERATING STATIONS

in service or under construction at December 31, 1974

Generating Stations in service

Hydroelectric

	(kilowatts)
1 — Beauharnois	1 574 260
2 — Manic 5	1 292 000
3 — Manic 2	1 015 200
4 — Bersimis 1	912 000
5 — Outardes 3	756 200
6 — Bersimis 2	655 000
7 — Carillon	654 500
8 — Outardes 4	632 000
9 — La Trenche	286 200
10 — Beaumont	243 000
11 — La Tuque	216 000
12 — Paugan	201 975
13 — Manic 1	184 410
14 — Rapide-Blanc	183 600
15 — Shawinigan 2	163 000
16 — Les Cèdres	162 000
17 — Shawinigan 3	150 000
18 — Grand'Mère	148 075
19 — Rapide-des-Iles	146 520
20 — Chelsea	144 000
21 — La Gabelle	123 750
22 — Rapides-Farmers	98 250
23 — Première-Chute	93 150
24 — Rapides-des-Quinze	89 600
25 — Rapide 7	57 000
26 — Bryson	56 000
27 — Rapide 2	48 000
28 — Rivière-des-Prairies	45 000
29 — Chute-Hemmings	28 800
30 — Hull 2	27 280
31 — Sept-Chutes	18 720
32 — Saint-Narcisse	15 000
33 — Drummondville	14 600
34 — Métis 1	6 400
35 — Pont-Arnault	5 450
36 — Chute-Bell	4 800
37 — Métis 2	4 250
38 — Saint-Alban	3 000
39 — Saint-Raphaël	2 550
40 — Sherbrooke	2 256
41 — Chute-Garneau	2 240
42 — Corbeau	2 000
43 — Magpie	1 800
44 — Rawdon	1 720
45 — Chute-Burroughs	1 600
46 — Chute-Wilson	840
47 — Anse-Saint-Jean	400
48 — High-Falls	340

Thermal

	(kilowatts)
49 — Tracy	600 000
50 — Îles-de-la-Madeleine	22 963
51 — Havre-Saint-Pierre	7 600
52 — Blanc-Sablon	3 150
53 — Fort George	2 700
54 — La Baleine	2 600
55 — Natashquan	2 200
56 — Harrington-Harbour	1 400
57 — Saint-Augustin	1 400
58 — La Romaine	1 200
59 — La Tabatière	1 100
60 — Parent	700
61 — Johan-Beetz	605
62 — Île-aux Grues	425
63 — Île-d'Entrée	385

Total installed capacity of hydroelectric generating stations (48)	10 474 736
Total installed capacity of thermal electric generating stations (15)	648 428
Total capacity in service at December 31, 1974	11 123 164

Nuclear power station

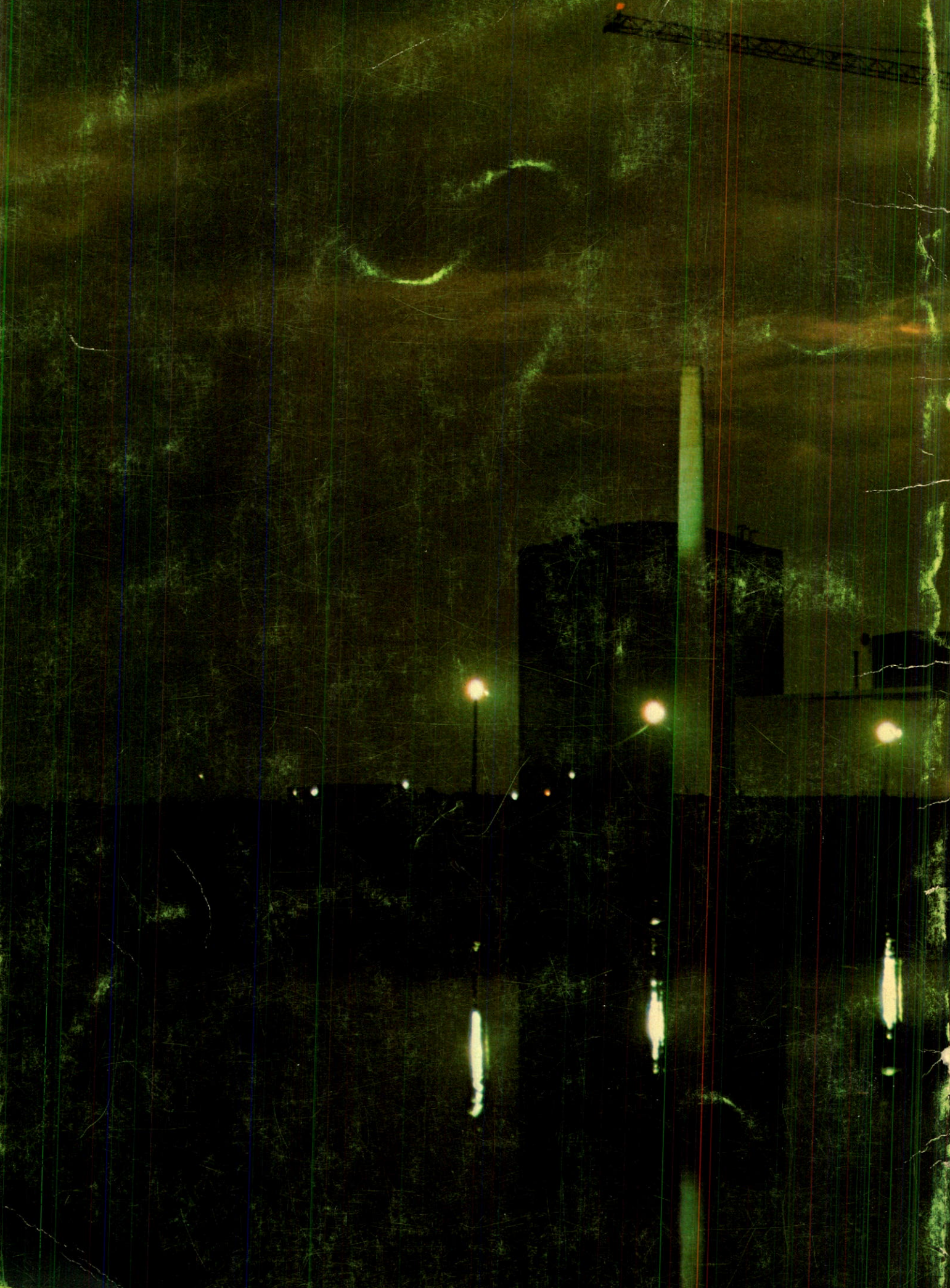
64 — Gentilly 1*	266 000

Generating stations under construction

	In service date	Capacity
Hydroelectric		
65 — Manic 3	1975-76	1 183 000
66 — Outardes 2	1978	454 000
67 — La Grande 2**	1980-82	5 328 000
Nuclear		
68 — Gentilly 2	1979	600 000

*Gentilly 1 does not at present belong to Hydro-Québec and therefore is excluded from the total.

**La Société d'énergie de la baie James, a subsidiary of Hydro-Québec, is responsible for the development of the la Grande River.

Published by the Public Relations Directorate of Hydro-Québec

Legend
Hydraulic generating stations
Thermal generating stations
Hydraulic generating stations under construction
Major substations
Nuclear generating stations
735 kV
735 kV future
345 & 315 kV
230 kV
161 kV
120 kV
The routes of transmission lines from James Bay and the locations of sub-stations along these routes are not yet final.
QUÉBEC
ONTARIO
ST. LAWRENCE RIVER
ANTICOSTI
NEWFOUNDLAND
NEW BRUNSWICK
PRINCE EDWARD ISLAND
NOVA SCOTIA
U.S.A.
Le Moyne
Nemiskau
Albanel
Abitibi
Chibougamau
Chapais
Obalski
Matagami
Quévillon
Normétal
Amos
Palmarolle
Senneterre
Rouyn
Pandora
Cadillac
Provencher
Noranda
Val d'Or
Louvicourt
Kipawa
Campeau
Maniwaki
Mont-Laurier
High-Falls
Ste-Agathe
Ouimet
Vignan
Lachute
Chenier
Chomedey
Saraguay
Montréal
Laprairie
Châteauguay
Paquin
Lafontaine
Duvernay
Kildare
Joliette
Riv.-Noire
Trois-Rivières
Sorel
Carignan
Île Varennes
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Magog
Bécancour
Nicolet
Bois-Franc
Victoriaville
Thetford
Kingsey
Weedon
Bromptonville
Chaudière
Parisville
Lévis
Beauceville
Laurentides
Jacques-Cartier
Quebec City
Saguenay
Chamouchouane
Lac Saint-Jean
Alcan property
La Verendrye
Rivière-du-Loup
Rimouski
Les Boules
Copper Mountain
Micmac
Cascapédia
Matapédia
Magdalen Islands
Micoua
Manicouagan
Baie-Comeau
Hauterive
Arnaud
Sept-Îles
To Havre St-Pierre
Normand
To Churchill Falls
Montagnais
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