

D.B.S. MEMORANDUM

Dominion Bureau of Statistics, Ottawa, Canada

Vol. 19



20-4910

CENTRAL ELECTRIC STATIONS

December, 1951

Month	Total Production			Consumption of Primary Power		
	(1) 1949	1950	1951	(1) 1949	1950	1951
	<u>Daily Averages</u> (Thousands of Kilowatt Hours)					
January	119,338	151,645	154,537	109,891	122,059	140,907
February	121,419	155,001	156,282	111,160	122,649	142,250
March	126,572	155,021	158,597	116,183	122,601	141,772
April	138,345	155,667	163,183	117,239	121,864	140,906
May	137,775	142,746	165,493	115,733	122,694	142,173
June	133,936	143,756	156,915	116,035	123,534	141,399
July	120,320	135,504	149,323	108,461	119,824	135,640
August	122,531	135,442	148,250	113,989	124,154	139,192
September	125,102	137,383	146,814	116,525	128,388	138,251
October	128,231	141,772	158,699	117,020	132,328	145,514
November	130,483	148,598	164,543	120,979	136,088	149,024
December	130,316	150,786	164,863	120,868	136,821	149,171

(1) INDEX NUMBERS - Seasonally adjusted (Average 1935 - 1939 = 100)

January	163.8	180.3	211.3	220.5	244.4	282.1
February	163.3	181.2	210.3	222.8	245.1	285.1
March	172.6	183.8	216.0	236.8	249.3	289.0
April	194.3	190.2	229.2	243.0	252.0	292.0
May	196.6	203.3	236.2	242.4	262.3	297.8
June	193.6	207.4	226.8	242.6	257.8	295.7
July	183.3	206.1	227.5	235.0	259.1	295.9
August	181.4	200.1	219.5	241.7	262.7	295.1
September	178.3	195.5	209.3	237.7	261.4	282.0
October	173.9	191.8	215.3	230.1	259.6	286.2
November	169.0	192.0	215.1	234.2	266.4	288.2
December	174.2	201.1	220.4	240.2	271.5	296.5

12/2/52

(1) EX. Newfoundland.

Price per year \$ 1.00

CENTRAL ELECTRIC STATIONS

(Thousand Kilowatt Hours)

Month of December, 1951

		T o t a l		Newfound- land		Prince Edward Island	
		1951	1950 (x)	1951	1950	1951	1950
A.	Production - Hydraulic	4,930,784	4,511,077	15,148	10,151	8	8
B.	Thermal	179,973	163,287	-	773	2,291	2,137
C. (A+B)	Total	5,110,757	4,674,364	15,148	10,904	2,299	2,145
D. (C - E)	Primary	4,764,874	4,368,623	13,148	10,904	2,299	2,145
E.	Secondary	345,883	305,741	-	-	-	-
F.	Receipts from other Provinces	-	-	-	-	-	-
G.	Deliveries to " "	-	-	-	-	-	-
H. (I+J)	Exports to U.S.A. - Total (1)	214,272	177,836	-	-	-	-
I.	Primary	140,564	127,165	-	-	-	-
J.	Secondary	73,708	50,671	-	-	-	-
K. (C+F-G-H)	Consumption - Total	4,896,485	4,496,528	13,148	10,904	2,299	2,145
L. (K-M)	Primary	4,624,510 ✓	4,241,458	13,148	10,904	2,299	2,145
M.	Secondary	272,175	255,070	-	-	-	-
Cumulative Totals - January - December							
N.	Production - Total	57,399,668	50,902,519	125,607	105,646	23,399	21,268
O.	Primary	53,505,490	47,622,633	125,607	105,646	23,399	21,268
P.	Secondary	3,894,178	3,279,886	-	-	-	-
Q.	Receipts from other Provinces	-	-	-	-	-	-
R.	Deliveries to " "	-	-	-	-	-	-
S.	Exports to U.S.A. - Total (1)	2,367,744	1,924,428	-	-	-	-
T.	Primary	1,610,278	1,537,926	-	-	-	-
U.	Secondary	757,466	386,502	-	-	-	-
V.	Consumption - Total	55,031,924	48,978,091	125,607	105,646	23,399	21,268
W.	Primary	51,895,212 ✓	46,084,707	125,607	105,646	23,399	21,268
X.	Secondary	3,136,712	2,893,384	-	-	-	-

		Ontario		Manitoba	
		1951	1950	1951	1950
A.	Production - Hydraulic	1,570,624	1,324,908	241,203	240,302
B.	Thermal	17,785	9,874	-	4
C. (A+B)	Total	1,588,409	1,334,782	241,203	240,306
D. (C-E)	Primary	1,452,114	1,222,469	189,316	178,699
E.	Secondary	136,295	112,313	51,887	61,607
F.	Receipts from other Provinces	407,353	456,193	51,355	44,152
G.	Deliveries to " "	725	242	11,672	11,578
H. (I+J)	Exports to U.S.A. - Total (1)	135,383	111,312	1	1
I.	Primary	61,675	60,653	1	1
J.	Secondary	73,708	50,659	-	-
K. (C+F-G-H)	Consumption - Total	1,859,654	1,679,421	280,885	272,879
L. (K-m)	Primary	1,797,067	1,617,767	228,998	211,272
M.	Secondary	62,587	61,654	51,887	61,607
Cumulative Totals - January - December					
N.	Production - Total	16,903,001	13,437,351	2,561,574	2,452,722
O.	Primary	15,456,602	12,616,676	2,004,495	1,892,244
P.	Secondary	1,446,399	820,675	557,079	560,478
Q.	Receipts from other Provinces	5,165,015	5,355,515	516,143	500,721
R.	Deliveries to " "	6,083	2,289	148,798	154,065
S.	Exports to U.S.A. - Total (1)	1,490,713	1,046,012	7	1
T.	Primary	735,360	663,596	7	1
U.	Secondary	755,353	382,416	-	-
V.	Consumption - Total	20,571,220	17,744,565	2,928,912	2,799,377
W.	Primary	19,880,174	17,306,306	2,371,833	2,238,899
X.	Secondary	691,046	438,259	557,079	560,478

(1) Net Exports.

(x) Revised to include Newfoundland.

REVIEW OF ELECTRIC POWER PROGRESS

1951 - 1951

The past score years have seen Canada move to the forefront of the major nations of the world in the per capita production of electric power. The tremendous transformation of our industrial economy has been based on the vast amounts of hydro-electric power which have been made available at rates which are unmatched anywhere in the world. At the start of 1951 the installed capacity of the nation's hydro developments was estimated at 6,125,000 horsepower. By the end of 1951 this had risen to nearly 13,541,000 horsepower - an increase of 118 p.c. To this must be added the thermal installations in areas where water power is not sufficiently plentiful. New plants and extensions coming on line during the next four years will add some 5,400,000 horsepower to the current total. The future is indeed bright as at present only a quarter of the known hydro resources are developed. It is estimated that the total present water power output represents an effective saving equivalent to some 54,000,000 tons of coal per annum or about double Canada's annual average production of this mineral.

Reviewing 1951 we discover a year of records in production, consumption, investment, new customers and revenues; a year of improved water supply and peak demand in many areas; a year in which the sights of the industry had to be raised for the years ahead. A number of large capacity thermal units were added. And as to the future - one quarter of the potential water power resources of Canada is harnessed and the vast reserves of natural gas, petroleum, coal, lignite, etc., assure and invite thermal plants to those areas not favoured with ample hydro resources. The distances hydro power can be economically transmitted are being extended. More and more systems are being interconnected in the interests of national defence, to meet fluctuations in demand between areas or other emergencies. Rural electrification is proceeding rapidly in several provinces. The coming decade promises further great expansion if materials and manpower be available. Industry is moving to even remote power sites.

Central electric stations reporting monthly to the Bureau produced a net of 57,400,000,000 kilowatt hours during 1951, an increase of 12.8 p.c. or 6,500,000,000 kilowatt hours over the previous high established in 1950. Of the 1951 total, 55,570,000,000 came from hydraulic plants while 1,830,000,000 kilowatt hours was by thermal generation. Gross exports during the year to the United States totalled 2,375,420,000 kilowatt hours, up over 23 p.c. compared with 1,925,778,000 kilowatt hours exported during 1950, but were still below exports during the war years. The Hydro-Electric Power Commission of Ontario alone reported a record 1,575,000,000 kilowatt hours generated in December. An impressive 881,250 new horsepower was added to Canada's hydro capacity during 1951 bringing the total to 13,340,774 horsepower, including Newfoundland.

During the year all provinces showed considerably increased output over 1950. Ontario's production rose nearly 26 p.c. with the addition of several large plants. Quebec production climbed 8.4 p.c., and represented 52 p.c. of the national total, while British Columbia improved 5 p.c. and exported sizeable amounts to the Northwestern United States.

The above totals do not include the smaller plants which report annually but whose output in toto is not large, nor the power output of industries for own use, except the West Kootenay plants 2, 3, 4 and 5 sold to Consolidated Mining and Smelting in 1946 which have been kept in the monthly summary to preserve continuity.

A study of the chart overleaf indicates that power output has strongly resisted the downward drag of depression years and surged forward with increasing population, industrialisation and farm electrification. The recession from 16.4 billion kw. hrs. in 1951 to 15.9 billions in 1952 was more than regained in the next two years when output rose to 21.2 billions in 1954. From then until 1943 there was a steady increase with the exception of a hesitation in 1938. The upward curve flattened off in 1944 and declined slightly in 1945 but for 1946 and 1947 it again continued to advance. The drop in 1948 of less than one p.c. was due entirely to very light summer and autumn precipitation over eastern Canada, resulting in a run off some 40 p.c. below the 25 year average. This necessitated restrictions on power use in Ontario, both during 1948 and into 1949, but national output again pointed upward in the latter year, and forward to a new peak in the year just ended at nearly 57.4 billion kilowatt hours. The increase from 1951 at 16.4 billion kilowatt hours was thus 41.0 billion, or 250 p.c. The industry took the loss of several heavy consuming electric street railways in its stride as many transit systems were converted to motor bus operation during the period charted.

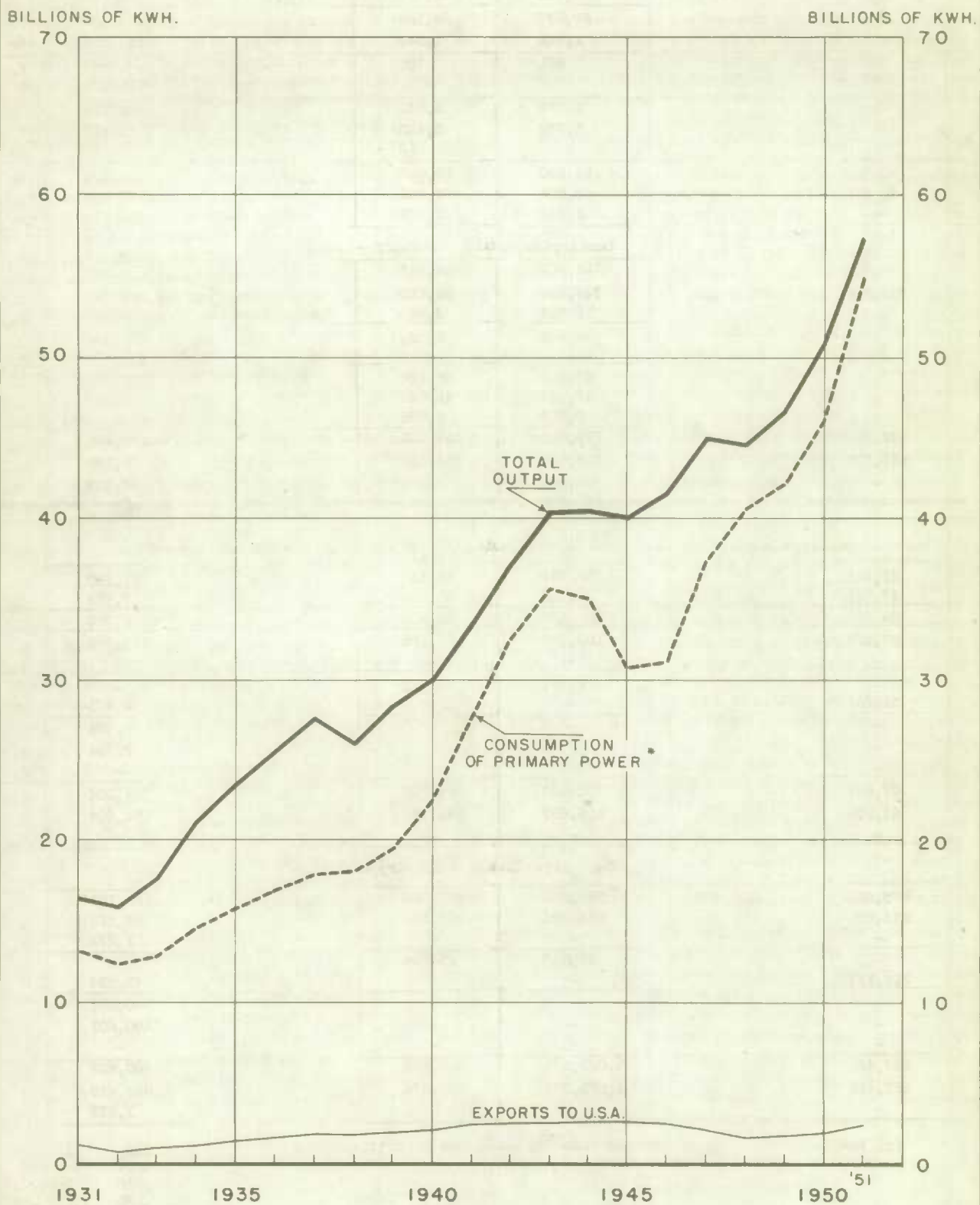
The consumption of primary power, which is computed by deducting exports and consumption of secondary power from the total output (and consequently includes the line losses), followed output quite closely up to 1933 when the market for secondary power and the station capacity permitted larger sales of secondary power. For the following 6 years this secondary power output, which is used principally in steam boilers, continued heavy but with the imperative demand for firm power for use in plants producing munitions of war, it was reduced and the primary power consumption steadily approached the total output. With the easing of war requirements late in 1944 and still more so in 1945, primary power consumption dropped from 35.7 billion kilowatt hours in 1943 to 35.1 billions in 1944 and 30.8 billions in 1945. There was a steady rise, however, to 37.4 billions in 1947, 40.6 billions in 1948, 42.1 billions in 1949, 46 billions in 1950 and to 51.9 billions in 1951.

Secondary power is power delivered to the consumer as and when it is available. It is interruptable and in Canada the greater part of it is used by pulp and paper mills in electric boilers where short interruptions can be tolerated. Power stations on rivers, which are not regulated, such as the Niagara and St. Lawrence, are able to produce many more kilowatt hours with the equipment and water available when they have customers ready to accept secondary power. Thus, at night when the demand for firm power falls off, water, which otherwise would be wasted, can be used to produce secondary power. But in times of power shortages, such as were experienced in the closing months of 1948 and 1949, some industries changed their operating schedules to take advantage of the low consumption periods during the night and weekends and thus used power which normally would be sold as secondary or surplus. Consequently the ratio of secondary power to total output was 13.9 p.c. in 1947 and declined to 5.9 p.c. in 1948, and rose to 6.9 p.c. in 1949 as conditions eased slightly with the addition of new plants and better rainfall. However, heavy primary demand during 1950 reduced the percentage to under 6.5 p.c., which recovered to 6.8 p.c. in 1951.

Transportation Section
Public Finance and Transportation Division
Dominion Bureau of Statistics

OUTPUT OF CENTRAL ELECTRIC STATIONS

(SUMMARY OF MONTHLY REPORTS)



* OUTPUT LESS EXPORTS AND CONSUMPTION OF SECONDARY POWER

D.B.S.

CENTRAL ELECTRIC STATIONS

Month of December, 1951

(000 Kw.hrs.)

Nova Scotia		New Brunswick		Quebec		
1951	1950	1951	1950	1951	1950 (x)	
37,057	41,930	45,089	40,962	2,500,636	2,403,079	A.
43,561	51,326	23,332	19,787	129	80	B.
80,618	73,256	68,421	60,749	2,500,765	2,403,159	C.
80,618	73,256	66,575	59,204	2,344,910	2,272,883	D.
-	-	1,846	1,545	155,855	130,276	E.
-	-	871	785	725	242	F.
-	-	-	-	396,552	445,400	G.
-	-	3,752	3,532	51,331	53,397	H.
-	-	3,752	3,520	51,331	53,397	I.
-	-	-	12	-	-	J.
80,618	73,256	65,540	58,002	2,053,607	1,904,604	K.
80,618	73,256	63,694	56,469	1,897,752	1,774,328	L.
-	-	1,846	1,533	155,855	130,276	M.

Cumulative Totals - January - December

875,380	763,869	756,929	696,218	29,791,550	27,475,570	N.
875,380	763,869	746,836	686,220	27,910,943	25,588,067	O.
-	-	10,093	9,998	1,880,607	1,887,503	P.
-	-	9,546	9,030	6,083	2,289	Q.
-	-	-	-	5,025,763	5,210,480	R.
-	-	49,560	46,126	646,893	641,688	S.
-	-	47,447	42,040	646,893	641,688	T.
-	-	2,113	4,086	-	-	U.
875,380	763,869	716,915	659,122	24,124,977	21,625,691	V.
875,380	763,869	708,935	653,210	22,244,370	19,738,188	W.
-	-	7,980	5,912	1,880,607	1,887,503	X.

Saskatchewan		Alberta (x)		British Columbia		
51,355	44,152	66,793	34,455	404,871	371,150	A.
47,924	41,033	35,715	50,654	9,236	7,619	B.
99,279	85,185	102,508	85,109	414,107	378,769	C.
99,279	85,185	102,508	85,109	414,107	378,769	D.
-	-	-	-	-	-	E.
-	-	1,391	4,671	-	-	F.
51,355	44,152	-	-	1,391	4,671	G.
-	-	-	-	23,805	9,594	H.
-	-	-	-	23,805	9,594	I.
-	-	-	-	-	-	J.
47,924	41,033	103,899	89,780	388,911	364,504	K.
47,924	41,033	103,899	89,780	388,911	364,504	L.
-	-	-	-	-	-	M.

Cumulative Totals - January - December

973,608	897,902	984,025	857,380	4,404,595	4,194,593	N.
973,608	897,902	984,025	857,380	4,404,595	4,193,361	O.
-	-	-	-	-	1,232	P.
-	-	37,052	43,294	-	-	Q.
516,143	500,721	-	-	37,052	43,294	R.
-	-	-	-	180,571	190,601	S.
-	-	-	-	180,571	190,601	T.
-	-	-	-	-	-	U.
457,465	397,181	1,021,073	900,674	4,186,972	3,960,698	V.
457,465	397,181	1,021,073	900,674	4,186,972	3,959,466	W.
-	-	-	-	-	1,232	X.

(x) Revised.

Gross imports from United States to British Columbia:

	1951	1950
	Kw.hrs.	Kw.hrs.
December:	115,536	160,517
January - December:	7,677,181	1,350,000



1010659777

CENTRAL ELECTRIC STATIONS
(Thousands of Kilowatt Hours)
PRODUCTION

Month	1947	1948	1949	1950 ⁽¹⁾	1951 ⁽¹⁾
January	3,851,111	3,754,174	3,699,472	4,080,989	4,784,409
February	3,589,361	3,492,823	3,399,725	3,780,016	4,375,847
March	3,956,905	3,758,566	3,923,721	4,185,643	4,910,294
April	3,727,377	3,727,459	4,150,340	4,070,021	4,895,491
May	3,917,499	4,072,973	4,271,027	4,425,140	5,130,278
June	3,756,104	3,717,619	4,018,065	4,312,667	4,707,449
July	3,750,881	3,657,119	3,729,920	4,200,615	4,629,009
August	3,641,476	3,686,938	3,798,459	4,198,697	4,595,761
September	3,589,497	3,598,154	3,753,055	4,121,496	4,404,416
October	3,862,696	3,774,021	3,975,153	4,394,941	4,919,654
November	3,613,726	3,634,307	3,914,482	4,457,930	4,938,505
December	3,729,731	3,694,696	4,039,795	4,674,364	5,110,757
Total 12 months	44,986,364	44,568,849	46,673,214	50,902,519	57,399,668

EXPORTS TO THE UNITED STATES (Gross)

January	168,163	136,292	151,583	128,075	172,499
February	151,786	122,526	161,796	151,521	164,805
March	183,125	140,019	175,018	175,805	220,900
April	186,580	166,052	179,869	190,634	208,203
May	188,648	185,842	184,554	199,351	231,344
June	192,227	169,890	155,169	167,627	224,611
July	217,171	157,395	168,067	158,877	237,823
August	198,014	144,836	140,955	149,660	159,726
September	155,707	129,483	120,252	143,000	134,692
October	147,164	126,217	119,623	139,664	202,694
November	137,630	123,019	95,331	143,570	205,756
December	140,271	141,536	104,535	177,996	214,387
Total 12 months	2,066,481	1,743,107	1,756,752	1,925,780	2,375,420

CONSUMPTION OF PRIMARY POWER

(Production less Net Exports and Secondary Power)

January	3,091,417	3,397,380	3,406,608	3,783,224	4,368,068
February	2,871,102	3,171,019	3,112,488	3,434,183	3,982,387
March	3,144,747	3,466,686	3,601,670	3,800,633	4,394,913
April	3,001,561	3,318,715	3,517,466	3,655,915	4,227,187
May	3,154,143	3,454,902	3,587,721	3,803,521	4,407,377
June	3,017,163	3,330,957	3,481,039	3,706,014	4,241,971
July	3,048,202	3,355,431	3,362,283	3,714,553	4,204,847
August	3,060,134	3,408,334	3,533,662	3,848,764	4,314,959
September	3,073,808	3,363,082	3,495,738	3,851,637	4,147,536
October	3,296,972	3,537,516	3,627,613	4,102,159	4,510,928
November	3,227,370	3,387,713	3,629,358	4,142,642	4,470,729
December	3,388,899	3,415,014	3,746,898	4,241,458	4,624,310
Total 12 months	37,375,518	40,606,749	42,102,584	46,084,703	51,895,212

(1) Includes Newfoundland.