

Equipment of Central Electric Stations.—The main-plant primary power equipment of all central electric stations aggregated 7,119,272 h.p. in 1936. This included water wheels and turbines, steam reciprocating engines and turbines, and internal combustion engines. The hydraulic power machines greatly predominated over the other prime movers, providing 95.7 p.c. of the total capacity, with steam turbines, steam reciprocating engines and internal combustion engines making up the remaining 4.3 p.c. Not included in the above were steam engines and internal combustion engines with a capacity of 200,621 h.p., or 2.8 p.c. of the total power capacity, installed as auxiliary or standby equipment.

Central electric stations that have no water power, but are operated by steam and internal combustion engines, are on the whole small stations. Of the 52 main-plant steam reciprocating engines in central electric stations in 1936, only 9 in number were over 500 h.p. The steam turbines averaged approximately 4,400 h.p. with 18 units averaging 9,500 h.p., but there were only 60 steam turbines in the industry and these were confined to 22 stations, whereas the 809 water wheels and turbines averaged 8,400 h.p., including 4 at 65,000 h.p. and 5 at 66,000 h.p. each.

The majority of the fuel-using stations are primarily for lighting purposes, using the cheapest fuel procurable, generally local coal. In the Prairie Provinces bituminous and lignite coals are used for the steam engines and gasolene, oil distillates and producer gas for the internal combustion engines.

Of the 340 main-plant internal combustion engines in central electric stations in 1936, 189, or 56 p.c., were in Saskatchewan, 62 or 18 p.c. in Alberta, and 30 or 9 p.c. in Manitoba.

During 1936, the thermal engines produced 496,577,000 kilowatt hours at a cost for fuel of \$2,303,786, an average of 0.46 cents per kilowatt hour. This production was, however, less than 2 p.c. of the total output.

5.—Main-Plant Equipment of Central Electric Stations, by Provinces, and Total Auxiliary Equipment, 1936.

NOTE.—K.V.A. means Kilo-volt-amperes.

Type of Equipment and Province.	No. of Power Plants.	Water Wheels and Turbines.			Steam Engines, Steam Turbines and Internal Combustion Engines.			Dynamos.		
		No.	Capacity.	Average Capacity.	No.	Capacity.	Average Capacity.	No.	Capacity.	Average Capacity.
			h.p.	h.p.		h.p.	h.p.		K.V.A.	K.V.A.
MAIN-PLANT EQUIPMENT.										
P. E. Island.....	9	7	336	48	7	5,730	819	13	4,669	359
Nova Scotia.....	45	54	84,994	1,574	26	55,963	2,154	80	122,038	1,525
New Brunswick..	14	17	105,985	6,234	15	33,387	2,226	32	118,490	3,703
Quebec.....	96	260	3,352,776	12,895	8	2,640	330	268	2,993,210	11,169
Ontario.....	133	339	2,201,136	6,493	16	1,365	853	351	1,769,280	5,041
Manitoba.....	27	39	437,800	11,226	39	3,556	912	78	354,552	4,546
Saskatchewan....	115	Nil	—	—	216	143,112	663	212	121,362	572
Alberta.....	62	18	69,920	3,884	96	59,799	623	107	105,000	982
British Columbia and Yukon.....	60	75	557,713	7,436	29	3,060	106	106	437,365	4,126
Totals.....	561	809	6,810,660	8,419	452	308,612	683	1,247	6,025,999	4,832
AUXILIARY-PLANT EQUIPMENT.										
	—	Nil	—	—	132	200,621	1,520	127	172,327	1,357
Grand Totals...	561	809	6,810,660	8,419	584	509,233	872	1,374	6,198,326	4,512

Provincial Distribution of Electric Energy.—The distribution by provinces of the electric energy generated in central electric stations throughout Canada is shown in Table 6 for the calendar years 1931-36. In the latest year over 82 p.c. of the total generated electric energy was produced in the leading industrial provinces