In 1939 central electric stations engaged in the public sale of energy controlled 88 p.c. of all developed water powers, as compared with 70 p.c. in 1922. The energy they supply drives 83 p.c. of the electric motors and 66 p.c. of all the power equipment used in manufacturing industries. The total amount of capital invested in central electric stations was greater than that invested in any other manufacturing industry, while in wages and salaries paid they ranked second in total value. Almost the whole, or 98 p.c., of the output was hydro-electric power while 95·2 p.c. of the primary power equipment of these stations was hydraulic.

Included in the statistics of central electric stations are those of a few stations engaged primarily in other industries, such as mining, manufacturing of pulp and paper, etc., which sell surplus power. For such plants, the statistics pertaining to the central electric station phase of the industry only have been given as far as possible.

Subsection 1.—Historical and General Statistics

The growth of the central electric stations industry, has been almost continuous since 1919, when statistics of kilowatt hours generated were first made available. The depression that occurred in the early 1930's resulted in decreased output of power for several years but this proved to be a temporary condition and output has now recovered and is again increasing in the same manner as characterized the years immediately preceding 1930. The record amount of power generated in 1939, was over 400 p.c. greater than the amount generated in 1919 and 57 p.c. greater than 1930 figures.

The number of customers has increased each year since 1920, with the exception of 1933 and 1934 when small decreases were shown, the net increase from 1920 to 1939 being over 117 p.c. Domestic service customers account for the large majority of customers and for over 80 p.c. of this increase. The domestic service consumption of electricity, however, is only around 9 p.c. of the total consumption in Canada.

The central electric stations industry is one that is particularly suited to large-scale operation, because of the huge outlays of capital necessary. As the industry grows, stations tend to become larger in size; there are now three stations with capacities of over 500,000 h.p. and several with capacities of over 200,000 h.p. Capital invested and total horse-power installed increased almost continuously even during the depression years, mainly because large power projects planned before the depression were in process of construction during the early years of the past decade.

The number of persons employed and salaries and wages paid in central electric stations decreased considerably during the depression years. Figures since 1934 show improvement in each year, however, even though at a slower rate than shown by other statistics of the industry.

The total output of electricity generated by central electric stations in 1939 was 28,338,030,000 kwh., an increase of 8·4 p.c. compared with 1938. This output was, however, only 49·8 p.c. of the rated capacity of the equipment installed. Of course, a ratio of 100 p.c. is not possible with varying loads.

Off-peak or secondary power produced for consumption in electric boilers, which, in 1939, amounted to 6,590,378,000 kwh., or 23 p.c. of the total output of power, showed an increase of 839,028,000 kwh. over the 1938 figure, and an increase of 34,702,486 kwh. was also shown in the off-peak and surplus power exported to the United States. Firm power increased by 1,310,140,000 kwh. The pulp and paper industry took 9,377,528,000 kwh., or 32 p.c. of the total output. This consisted of 5,152,790,000 kwh. of secondary power for boilers (78 p.c. of the total quantity so used) and 4,224,738,000 kwh. of firm power for power and light. This was 18·7 p.c. more than the 1938 consumption by pulp and paper mills.