to produce peat coke the drying process is carried farther in the same chamber by raising the temperature of the gases to the necessary degree of heat for carbonizing the peat, the liquors and tarry substances in the peat being duly recovered and the coke removed into and cooled in other chambers. The plant has been partly completed, and is expected to be in operation this summer.

Power Generation and Distribution.

The power plant at Welland includes two steam boilers of 120-h. p. each, one of which has sufficient capacity for the present plant; a horizontal engine of 175-h. p.; the necessary pumps for supplying the boiler and press water-jacket; and a small auxiliary portable boiler with super-mounted engine for operating the dryer plant when the remainder of the machinery is not in use. The fuel used is air-dried peat, of which 4 tons per day were consumed when the tests were made, the cost to dig and deliver being $1.359 per day. One engineer was required whose wages were $2.00 per day. Lubricating oil for the entire plant was used at the rate of two gallons per day, costing $0.34. The total cost therefore of generating power for the entire plant was $3.70 per day, or $0.2113 per ton of finished fuel.

The grate bars of the boiler which were designed for burning peat were fitted with ¼-inch space and 5-16 inch bars, thus lessening draught and preventing the fine particles of peat dropping into the ash-pit below. The distance between the grate bars and bottom of the boiler had been reduced to 18 inches, and between boiler and fire wall at the back of the grate to 6 inches, the reason for the latter changes being that peat, both in the air-dried form and briquettes, burns with a short flame. When firing with compressed peat fuel a depth of not more than 4 inches is maintained over the entire surface of the grate. The bottom layer of an inch in depth will be fine ash gradually dropping through the grate spaces as the peat is consumed. The heat is easily and quickly regulated by means of the chimney draught. It is necessary when using briquettes to replenish the fire every 5 minutes.

The fuel employed at Beaverton was dried cedar cordwood, one cord weighing 1700 lb., and costing $1.50. One cord was required for a day's run. Air-dried peat would have been cheaper, but the grate of the boiler was not adapted for burning it. Delivering fuel to the boiler occupied half of one man's time at $1.40 per day, and the engineer in charge was paid at the same rate Four gallons of oil are consumed in the whole plant per day, costing $0.68. The power cost for the entire process, including field operations, is made up as follows:

	per day
Fuel	$1.50
Delivery of fuel	.70
Attendance	1.40
Oil	.68
Total	$4.28

Mr. J. J. Milne, mechanical engineer, Toronto, also examined and reported on the Beaverton plant and found the power required for operating it to be 40-h. p., distributed among the various plant units as follows:

Briquetting press and elevator	13	horse power.
Tram car	4	" "
Excavator	8	" "
Dryer, breaker, conveyors and exhaust fan	14	" "
Total	40	" "

From these figures the proportionate costs for power for the several parts of the process have been deduced in this report.