

The Campbellton Graphic

THE CAMPBELLTON GRAPHIC, CAMPBELLTON NEW BRUNSWICK, THURSDAY, AUGUST 28, 1924

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NEW BRUNSWICK CAN BECOME A LAND OF BUSY FACTORIES AND LARGE PAPER MILLS

Statement Made by Engineer Weston of N. B. Electric Power Commission at Municipalities Convention—Energy to be Developed Under Proposed Plan Would be Cheap and Reach Every Part of Province—Paper Industry Discussed

That the people of New Brunswick had apparently awakened to a realization of the industrial possibilities of this province was a statement made here Friday by E. R. Weston, chief engineer of the New Brunswick Electric Power Commission, in his address on the power resources of New Brunswick, delivered before the convention of the New Brunswick Union of Municipalities.

Mr. Weston went on to say that with the provision of cheap power contemplated in the development scheme of the Provincial Government there was no reason to suppose that this province would not become an important centre for the manufacture of goods from raw materials imported from all parts of the world.

He mentioned specially the opportunities which cheap power would provide to enable New Brunswick to have several large paper-making mills. At present there was only one in this province, that of the Bathurst Company, Limited, at Bathurst, with a capacity of 60 tons of newsprint a day.

Foresees More Paper Mills

Mr. Weston in the course of an address in which he explained clearly the proposal to energize the whole province with a unified system of hydro-electric plants, with Grand Falls as the great throbbing heart of the system, declared that New Brunswick, faced by the competition of lumber brought through the Panama Canal from the Pacific coast, would have to find new use for its woods.

Spruce and fir could be made into paper. The annual growth of spruce and fir, he said, was, at a low estimate, 100,000 cords. This would be sufficient to make 300,000 tons of paper annually or 1,000 tons a day for 200 days a year.

One hundred thousand horse power of cheap power would be required to manufacture that amount of paper, and it was only under a plan of hydro-electric development such as the Government contemplated, and he outlined that that could be produced from our water power sites, he declared. The proposed development would furnish that power, and the hope that the power would stimulate the paper industry would stimulate itself to justify the undertaking, he declared.

Text of Address

Mr. Weston's address in part follows:

At Grand Falls, on the St. John river all three conditions essential to a water power of the first magnitude exist, in that there is a drainage area of 8,700 square miles, with fairly heavy precipitation and consequent stream flow with a natural drop or head of 119 feet at Grand Falls, which head can be increased artificially to about 132 feet.

There is, however, a limiting feature to all the water power sites in New Brunswick, and that is the lack of natural regulation to the stream flow. In spring, with the rains and melting snow the flow of water is at a maximum while again in the fall the flow is greater than the average for the year. In summer and winter the flow is often very low. This condition of course is the result of a quick run-off following precipitation due to the lack of extensive lake storages.

The best regulated stream in the world is the Niagara River, draining the basin of four of the Great Lakes. The latter form so large a proportion of the drainage area, and the Niagara River is so narrow that the elevation of the water varies only slightly throughout the year.

100,000 Continuous Horse Power

In contrast we have in New Brunswick small rivers with comparatively large annual run-off and good head sites, but no lake storage. Unless there is opportunity to erect dams for the creation of artificial lakes for storage purposes only high power is available.

On the St. John River above Grand Falls and on many of the other streams in New Brunswick it is possible to create artificial storage for stream regulation, and this must be considered in connection with all our power sites.

From the knowledge already obtained with reference to drainage areas, stream flow and storage facilities we find that at Grand Falls there are all the ultimate storage facilities available from 60,000 to 70,000 continuous horse power when the flow is developed. So that in the whole of the province, including Fokioke, Shagmooche, Musquash, Tetagouche, Nepisiquit, and the other 120,000 horse power of equipment would be required, be installed in the province, and operated only part time.

Obviously on the whole the capital cost per horse power would be that of a small station as only one shift would be required, viz., during that time of day when day and night loads interlap to produce a total

maximum demand.

Climate Diversity and Advantage

A glance at the map will show how well the shape of the province is adapted to this scheme. A single high voltage line will encircle the whole province and the maximum transmission distance from Grand Falls will not exceed 275 miles.

You will notice that from a few stepdown transformer stations on the high voltage lines low tension lines can be extended to practically every inhabited section of the province. Again the smaller power sites are located near the route of the high tension line that every one of them can be used as required to supplement the power supply from Grand Falls.

One natural advantage of no mean importance in connection with the linking up of these various sites is the diversity of climate conditions between the north and south of New Brunswick. In the last month more than three inches of rain fell at Grand Falls and only one inch in St. John. There is today a good flow of water in the Green River, tributary of the St. John at Edmundston and the municipal plant there is operating at full capacity without any artificial storage. The same is true on the Nepisiquit River, where the rainfall has been the heaviest in the province during July.

There is for this season of the year a high run of water over Grand Falls, while the Nashua River has recently reached low water pitch. This diversity of precipitation, which is of frequent occurrence, will permit of the production of a great deal more total power from all sites combined in one system than the sum total of the output of all the sites segregated, for in the latter case it would be useless to install capacity greater than is warranted by the low minimum annual regulated flow. These physical conditions result of more complete and efficient use of the water powers in New Brunswick than in any other province of Canada.

Views of Best Method

I have tried to show that in the interest of economy and conservation these water powers should not be treated separately but as far as possible as generating units. If transmission is concerned, they must be treated collectively as integral parts of one complete system.

It is therefore, to discuss the best method of obtaining that complete system. As previously stated private capital is interested only in those power sites nearest the market where the market profits are to be obtained. The fact that private enterprise has done so little in this direction in our own province leaves little to hope for from these sources. Our province is so limited in extent that the most widespread distribution must be secured for power, and a large amount of capital will be required to carry out the plan. We are therefore, as you are doubtless aware that capital charges form by far the greater part of the cost of producing hydro-electric power. Fortunately, we have first hand information to illustrate this point.

In February, last, interest, sinking fund and depreciation fund on the \$1,000,000 loan to the St. John River Power Commission amounted to \$100,000. On the other hand, the operating expenses including operating payrolls amounted to \$13,000. This is a saving of \$87,000. The power was made up of fuel, capital invested, and operating expenses. The saving was \$87,000.

The argument is frequently used by opponents of public enterprises that they are over-run and carry higher operating costs than private enterprise. Our province is so limited in extent that there is any need for such a statement and I do know that in the operation of the present hydro system there is not an employee more than is required for efficient operation.

But for the sake of argument let us assume that operating expenses were increased 100 per cent, which is about the extreme of extravagance that might be anticipated by the most reactionary mind. In the above example 100 per cent increase in operating expenses would result in 6.3 per cent increase in the cost of power. But it would require only 6.3 per cent increase in capital costs to produce a like increase in power costs.

Fifty-seven per cent of the total cost of power in this month was made up of interest and 13 per cent increase in interest rates would have the same effect upon power cost as doubling the operating expenses.

We are paying on the average of 5.2 per cent interest on a capital invested. If we had to pay 6 per cent interest instead the cost of power would be increased hereby to a greater extent than by doubling the operating costs.

Favorable Public Ownership

In a larger plant where operating expenses would be a little higher than at Musquash, but the capital expenditure greater, the cost of power would be a greater proportion of the price of power. Now, it is conceivable that the Province of New Brunswick might borrow money for the development of our water powers at less than 5 per cent interest and it is equally inconceivable that a private corporation would undertake such an enterprise upon less than 9 per cent on the capitalization.

The supplying of electrical power for the most widespread uses industrial and domestic and under equi-

table conditions to all is just as essential to the progress of private enterprises as the Highways, the Post Office Service and Public Water Supply. Fortunately in the case of hydro-electric service it is possible to meter the service rendered and to divide the cost among those who directly benefit thereby, viz., the consumers. In this respect the public development of electric power differs from any other provincial undertaking for the cost is borne by the consumers and not by the general taxpayer.

New Vision, He Thinks

There has apparently come to the people of this province, none to soon, a new optimism and a realization of their industrial possibilities. Such optimism as expressed by the press and public men is justified. The principal export industry of this province has had to do with the manufacture of timber. We are all familiar with the changed condition of this industry, due to the importation of western timber which has been made possible by the opening of the Panama Canal. The lumbermen of New Brunswick are beginning to realize that the future of the forest industry lies in the production of newsprint paper to which our spruce and fir are peculiarly adapted. The growth of the paper manufacture of Canada in the last fifteen years is remarkable.

Since 1908 to the end of 1922 the production of pulp (both ground wood and chemical) has increased six times to a grand total for 1922 of 2,150,251 tons. During the same period ground-wood production increased 1 1/2 times.

In the province of New Brunswick we have today only one newsprint paper mill producing about 60 tons per day, and that has been operating only a little more than a year. It has been pointed out by the lumbermen of the country that a wider market exists for newsprint than for craft paper as there is no tariff against the former entering the United States of America. But the production of newsprint requires a great amount of cheap power. A single paper unit of 10 tons per day output requires for all processes approximately 5,000 H. P. throughout the 24 hours.

Wood and Paper

On the Crown Lands of New Brunswick there is, according to reliable estimates, fourteen billion feet of spruce and fir. The annual growth on this timber is from two to three per cent. At the lower rate of two per cent the annual increment is about 470,000 cords, sufficient to produce 300,000 tons of paper annually or 1,000 tons per day for 300 days of the year. 100,000 H. P. of cheap power would be required to manufacture that paper and it is only under such a plan as has been outlined that that could be produced from our water power sites.

For the 200,000,000 feet of lumber that might today be sawn into timber all the interests in the province

do not receive more than \$30 per thousand, or \$8,500,000.

For the same amount of timber manufactured into paper the value at the present prices would be \$21,000,000, the extra return to be made up of earnings of labor and capital invested all within the province.

The hope that the provision of cheap and abundant power will stimulate the development of the paper industries in New Brunswick would therefore seem in itself to justify the undertaking.

But in addition to stimulating this one basic industry there is no reason to suppose that New Brunswick with its favorable geographical position, its excellent climate, and its splendid type of manhood, supplemented by cheap power available in all sections, will not become an important centre for the manufacture of goods from raw materials imported from all parts of the world.

In addition to the industrial benefits of power development there will follow all the advantages that accompany the use of electrical appliances in thousands of homes throughout this province. Already 11,000 of these are connected to hydro service and with the completion of the system outlined that number should be increased at least five-fold. The credit of the province that today stands so high cannot be employed in a more useful provincial service.

15 ARE DEAD IN ILLINOIS STORMS

Property Damage Exceeding \$2,000,000 Was Caused on Thursday

Chicago Aug. 26.—More than half a dozen persons are dead, a score injured and property damage estimated at upwards of \$2,000,000 was caused as the result of terrific storms Thursday night and yesterday in Wisconsin, Iowa and Illinois.

Wisconsin, which was hardest hit, reported six deaths, while the loss of life in that state from storms during the week amounted to 15.

Hundreds of farmers were left practically destitute, the deluge of water destroying crops, flooding farm houses, and washing out more than 200 bridges.

Illinois and Iowa were visited by a heavy downpour yesterday that added to the damage already done. In Chicago the rain was driven by a 54 mile gale.

Mrs. John Elliott returned home last week from visiting her son, the Rev. George Elliott at the Methodist Parsonage, Buetouche, N. B.

Many friends regret to hear of the death of Mr. Fred Gaudin which occurred at his home on the 26th of July. He was much esteemed.

Mr. Henry Gaudin of Campbellton is visiting at his old home here.

Mr. Thomas Fairweather of New Brunswick is the guest of the Rev. George Anderson.

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