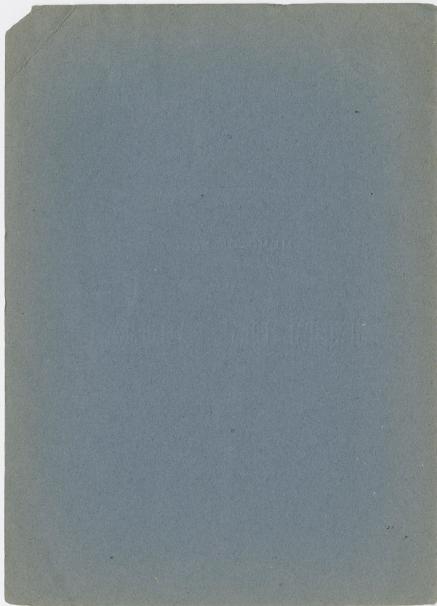


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MUNICIPAL POWER DEVELOPMENT.



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Municipal Power Development

TORONTO, December 28th, 1903.

To the Chief Officers of the Municipal Corporations of Ontario :

GENTLEMEN,—At the last session of the Ontario Legislature, "An Act to provide for the construction of Municipal Power Works and the transmission, distribution and supply of electrical and other power and energy," was passed and is embodied in Chapter 25 of the Ontario Statutes for 1903. The Act in question confers large powers upon Ontario Municipalities in regard to the development, transmission and sale of power, including heat and light.

A meeting of representatives from a number of Municipalities interested in the question was held on the 12th August, 1903, at the City Hall, Toronto. At that meeting the following resolution was adopted :

"That this meeting recommends the appointment by the Municipalities which desire to co-operate under the 'Act to provide for the construction of Municipal Power Works, etc.,' of E. W. B. Suider, P. W. Ellis, Adam Beck and W. F. Cockshutt, and such electrical engineer as they may select to act with them, and shall recommend to the Municipalities for that purpose, as Commissioners under Section 2 of the said Act, to exercise the powers and perform the duties defined by Section 3 and following sections of the Act, for the information and benefit of the Municipalities so desiring to co-operate ; and to report as provided by the Act to the Municipalities joining in their appointment."

Pursuant to this resolution, considerable attention has been given by the Acting Commissioners to this very important question of power. You will shortly be called upon to take some definite action with regard to the furtherance of the public good in the matter. Against, and for the purpose of aiding in, such decision, I beg to submit for your consideration the annexed memorandum bearing on the question.

On behalf of the Acting Commissioners.

(Signed) P. W. ELLIS.

POWERS OF MUNICIPALITIES.

Under the Act of last session municipalities singly and jointly are permitted:

(a) "To secure the acquisition, construction, maintenance and operation of all necessary works, plant, machinery and appliances for the development, generation, transmission, transformation, distribution and supply of electrical and other power and energy, including heat and light for their own corporate use . . . and for the use of such persons, firms and corporations as may desire the same."

(b) "To appoint a commission consisting of one electrical engineer . . . and not less than two nor more than four other persons, who shall be business or professional men of good repute," to report upon the mode and cost of exercising the aforesaid powers.

2. It is to be noted that there is no limitation in the Act as to the place or location of operation. Although the Niagara Water Power is thought of and spoken of in connection with the Legislative authority, it would seem that authority is bestowed upon municipalities to acquire or develop such energy in any convenient place.

3. Under the Municipal Act there is a certain power of expropriation given to municipalities whereby existing electric lighting, gas and water companies may be acquired. Attention is drawn to this power because it may prove of substantial assistance in obtaining the consent of certain municipalities to join in the larger undertaking when they possess the means of buying out existing companies already established in their midst.

PRESENT CONDITION OF NIAGARA POWER DEVELOPMENT.

Available Quantity.—The total power available at Niagara Falls, as estimated by American engineers, is about five and a half millions H.P.

Chartered Quantity.—There are two American companies in operation, and three Canadian companies, as follows:

The American Niagara Falls Power Co. (U.S.A.).	} About 300,000 H.P.
The Niagara Falls Hydraulic Co. (U.S.A.).	
The Canadian Niagara Power Co.	100,000 H.P.
The Toronto and Niagara Power Co.	125,000 H.P.
The Ontario Power Co.	150,000 H.P.

Total 12½ per cent. of whole, or 675,000 H.P.

N.B.—The Commissioners report 22 per cent., but there is something wrong with their figures.

Residue.—It is clear that there is an enormous surplus still available without encroaching upon scenic effect, and it has also been established by Mr. Randolph, of Chicago, that there are at least four highly desirable sites still available on the Canadian side, within the limits of the Government Park, the aggregate energy of which will very closely approximate 350,000 H.P.

Ontario Consumption.—A guess at the Ontario consumption within the limits of practicable transmission cannot be hazarded, but by common consent the 375,000 H.P., already in process of development by the three Canadian corporations, is considerably in excess of all demands for many years to come. The fact that the City of Toronto, with all its lighting, electric railway and manufacturing demands upon power, consumes only in the region of 30,000 H.P., is a partial index of the margin between consumption and development.

VALUE TO MUNICIPALITIES OF POWER CONCESSION.

Average Present Cost.—Very few users of power have any idea of its true cost per unit of horse power. The reason is that the various elements of cost, consisting of fuel, firing, water, maintenance and depreciation of boilers, engines, connections, buildings, etc., are seldom grouped together in such a way as to disclose the total outlay thereon. Again, even when this is done there is very seldom, if ever, a correct record kept of the actual consumption of power for the period. Indicator tests, which are the only reliable means of ascertaining consumption, are most rarely made. Electric power is leased at rates ranging from \$20 per H.P. per annum for a few hours daily up to special rates for small consumers, running as high as \$100 and upwards per H.P. per annum. Probably the most economical steam power plant in Ontario costs, after allowing for all proper elements therein, not less than \$28 to \$30 per H.P. per annum. The great majority, however, are very far from being up-to-date, modern, economical plants. To be on the safe side, let the average all round cost of power to Ontario consumers be placed at, say, \$35 per H.P. per annum.

Maximum Cost Under Properly Managed Municipal Development.—The Shawinigan Power Company, of Quebec, has quite an expensive development. The Montreal Power Company contracted to take its whole output at a uniform rate of \$15 per H.P. per annum, delivered at Montreal, 89 miles from point of development, which is sufficient to pay interest on bonds and dividend on capital stock. It may be assumed, therefore, that municipal power developed under the most competent supervision, and charged with bond interest only at a low rate, may be produced at a maximum cost of \$15 per H.P. per annum.

Saving to Consumers.—Estimating the consumption tentatively at 150,000 H.P. and the saving at \$20 per H.P. per annum (that is the difference between estimated present average cost of \$35 and estimated maximum cost of \$15), the net annual value to Ontario consumers of power developed and sold at cost is \$3,000,000, which capitalized at 4 per cent. per annum, represents a capital value of \$75,000,000. The actual money value to the manufacturers of the Province of their share in this amount is considerably in excess of their arithmetical proportion of it. Cheapening of production means a lowering of selling price. A lowering of selling price means—within certain limits—an increased consumption. An increased consumption represents a stimulus of trade and in consequence a further reduction in cost of production because of increased manufacture and so on. Although a growth of trade cannot always be traced to or visibly connected with a reduced cost of production, it nevertheless remains true that under the pressure of competition and far-seeing self-interest every element of reduced cost tends to and

takes final expression in a reduced selling price, with the effects aforesaid. This economic law is of course interrupted frequently for temporary periods by the artificial action of combines, trade arrangements, etc., but this fact does not alter the argument. There is also the important collateral effect of the attraction to the Province of manufacturers because of cheap power, bringing in its wake a further development of the country's resources and an increase in domestic trade and exporting enterprise. It is difficult to stop the citation of sequences because each advantage begets another. It may be remarked, however, that the increase of trade and consequent production, and the attraction of manufacturers because of cheap power, will confer great advantages upon the municipalities corporately, by reason of the increased population, increased works necessary for carrying on operations, increased taxable realty and personality, and in consequence diminished rate of taxation that will ensue.

POSSIBLE COURSES OPEN TO MUNICIPALITIES.

1. Independent development at Niagara Falls and elsewhere to suit the needs of municipalities joining for the purpose.
2. Acquisition of some one of the three existing undertakings at Niagara Falls.
3. The purchase from existing corporations of power :
 - (a) Delivered to consumers.
 - (b) Delivered at vendors' power house, subject to transmission at cost and risk of municipalities.
4. The acquisition of available power sites—assuming present arrangement under clause 3 hereof—to hold against future contingencies.

SOME QUESTIONS INVOLVED.

- (a) The selection of suitable power sites.
- (b) The ascertaining of costs thereof and procuring of options at ascertained figures.
- (c) The estimating of amount of demand that may be expected.
- (d) The scale, mode and cost of development.
- (e) The mode, limits and cost of transmission.
- (f) The probable cost of expropriation of existing lighting companies holding municipal contracts or franchise.
- (g) The utilization in the consolidated scheme of the plants so expropriated.
- (h) The preparation of a scale of prices adapted to the varying conditions and needs of municipalities and private consumers, including cost of expropriation of existing companies where such is a condition of municipal co-operation.
- (i) The dovetailing into the larger plan of any scheme which any municipality may have already entered into for a similar purpose.

(j) The consolidation or the separation of different undertakings in order to secure the maximum of justice and economy to each municipality.

(k) The reduction of the whole question to the simplest possible plan or plans for recommendation to the various municipal interests concerned, including a perfect scheme of financing which shall provide for every charge and the repayment of capital within a legitimate period.

MODE OF DEALING.

The consideration of the above and other necessary but unspecified matters is a necessary preliminary to united action. Such consideration, however, can only be given to the subject by a committee of experts, whose appointment, therefore, should be agreed upon by all municipalities, even to the smallest whose sole interest might consist in a reduced lighting bill. The saving to such will be approximately in the same proportion as that of other municipalities with much heavier interests. Under section 2 of the Municipal Power Act such a committee of experts may be appointed by any one or more municipal corporations.

