have installed a storage or reservoir system to govern the flow. In the report of the United States chief of engineers, it is stated that the reservoir system has already directly benefited the milling interests of Minneapolis to the extent of $500,000 annually, the production of flour by water-power amounting to 16,000,000 barrels at less than 1 cent a barrel, which by steam would cost 5 cents. The preservation of our forest areas at the head of the streams is also essential to the maintenance of our water-powers. Power will be required along the route for canal purposes, for lighting, for the operation of the locks, &c. The plans which have been presented create at least 12 water-powers, which consume the entire head of the river from Mattawa to the Lake of Two Mountains, aside from the possible two powers on the Back river should that route be selected for the waterway. It is also pointed out that this water-power would materially assist in paying interest on the total cost of construction.

It is clear that, ultimately, owing to the work of the federal government, the energy available will be from 15 to 20 times more valuable than it is at present, and it would seem to be good business for the Dominion to acquire the powers now if they could be reasonably purchased.

The industries which would utilize the water-powers: Pulp and paper mills. Electric smelting. Electrification of railways, Chemical works.

On page 295 of the report I find the following with regard to this waterway:

Ideal sites for the location of flour mills for milling in transit will also be available and, no doubt, many other manufacturers will be attracted by the combination of cheap power and transportation. The advantages of these two combined have been shown particularly at the Soo and Niagara. In neither of these cases can the power be considered as cheap as can be developed in other portions of the country. But the advantage of cheap transportation and local market has developed these before the other cheaper powers have been touched.

The construction of the canal will furnish one of the principal reasons for the development of the powers by giving cheap transportation both for the raw material and the finished product. The powers will be still better adapted for the manufacture of paper and pulp with a waterway both to the American and European markets.

It would seem advisable, in view of the above circumstances, that if there is a probability of the canal being constructed, that immediate control of the various water-powers be acquired by the Dominion government.

A study of the intimate relations between the proper development of the powers and the construction of the canal will show the truth of this statement.

Then I have here some figures with regard to the powers along the route in their present condition, and what they could develop after the canal was constructed:

Proceeding by way of Ste. Anne, the first power will be located at Pointe Fortune, near Carillon, 49½ miles from Montreal. The present low water head is 13½ feet, which, with a discharge of 17,400 cubic feet per second, is capable of developing 19,300 electrical horse-power. After the canal is constructed, there will be concentrated here the fall of the series of rapids above, making a head of 40 feet, which with a regulated discharge of 43,950 cubic feet per second is capable of developing 148,000 electrical horse-power. This power would, undoubtedly, be of great value as being in such close proximity to Montreal, where the market for electrical energy is rapidly increasing.

The next power site is situated at Hawkesbury, which is 60 miles from Montreal and 10½ miles from the Pointe Fortune power just described. On the Quebec shore, the Hawkesbury Lumber Company have developed some 1,200 horse-power under an 8-foot head. Canal regulation works will maintain a maximum fall of 25 feet, but, allowing six feet for slope of the water surface in the 67 miles above, friction, losses, &c., an effective head of 19 feet can be utilized and 71,800 electrical horse-power developed. The large cost of this development, as tabulated, is owing to the heavy expense in the construction of outer works, the main channels of the river being taken up by sluice-gates for the proper maintenance of the canal levels; also the head being comparatively low, the adoption of smaller electrical units is necessary. This improved power at Hawkesbury would most likely be used in different lumber and pulp manufactories for the district below Ottawa.

The next lift at the Chaudière Falls is 126·8 miles from Montreal. There is at present a turbine installation of about 50,000 horse-power under heads varying from 16 to 27 feet. Those present powers are being greatly improved by the construction of a massive stop-log dam across the river, just above the falls. The canal dam will, probably, be placed about three-quarters of a mile above the falls, and, in order not to interfere with the present interests, a development has been figured on with a twenty-foot head which will be the difference in the level between the water in the reach above Ottawa, and the water surface to be maintained by the power owners' dam. Hence, with a regulated discharge of 28,000 cubic feet will be an additional 45,000 electrical horse-power available at the Chaudière after the canal is constructed. This increase of power would be welcomed, as even at the present time the supply of hydro-electrical power is insufficient.

By the erection of the canal dam at Ottawa, the Deschenes rapids will be drowned out.

The Chats Falls is the next power site situated twenty-eight miles above Ottawa and 155 miles from Montreal. A thorough study being made of a development here, it is proposed to raise the head water sufficiently to drown out the Chats rapids above. Under a 48-foot head, there is at present 43,300 horse-power available here. In contrast to this, the conditions when the canal is built, will be a regulated low water flow of 27,400 cubic feet per second which, with on effective head of 48·5 feet is capable of generating 113,500 horse-power. For both present and future developments, it is proposed to construct a canal head race, 2,100 feet in length on the Quebec side. The Chats Falls are situated within