

and having a climate not surpassed and hardly equalled anywhere, and suited to a degree to manufacturing purposes, the possibilities of the colony are almost beyond the bounds of fancy. The opening of the Orient and the demands it will make on civilised nations will be something marvellous. If New Zealand wants to share in this business you must prepare her for it. Your products should be exploited carefully, and instead of shipping away any raw material it should all be put in a finished condition at home. Your wool should all be in condition for immediate use; instead of being shipped in the bale it must be worked up somewhere. Why not at home? Why cannot raw material be shipped into the country and, after being worked into the finished article, be forwarded for consumption?

Your advantages are numerous—we might say unequalled. You have splendid harbours, which means easy access by sea. You have a superabundance of reliable and cheap power, and an excellent climate. The ships of the world should stop at your doors and contribute their share to your advancement. They will do it if you insist. You have already a great deal of wise legislation on other subjects; bring to the question of the advancement of the colony and its growth as a manufacturing centre this same energy and thought, and great results will not be lacking. In order to carry out this plan suitable working relations with consuming nations must be established. Make concessions to them, and see that you get concessions in return. The cold countries need meats and wool; you have them both. Put them into such good shape that people simply cannot get along without them; but have this work done at home, where, with your water-powers developed, you can do the work better and cheaper than it can be done elsewhere. I do not wish to disparage what you have already accomplished, for you certainly have achieved wonders, and almost accomplished the impossible. You deserve the greatest compliments for the results you have achieved, but there is so much possible in the immediate future that your efforts should be redoubled.

ESTIMATE FOR LAKE COLERIDGE DEVELOPMENT.

This location impressed me favourably from the start—first, on account of the possibility of storage; second, on account of the head available in a very short distance; third, on account of the possibility of connecting the pressure-pipes direct to the lake so that water would be used only as needed; fourth, on account of its nearness to a large centre of industry. On the whole, the surveys have more than realised my hopes.

The present development recommended is that of 10,000-horse power in four units of 2,500-horse power each—about one-ninth of the maximum possible development. There will have to be a tunnel through the hill, the cost of which I cannot give because no sections were forwarded. The inside section of the tunnel should be at least 42 square feet. This will provide for a development of over 25,000-horse power, with a minimum head of 469.3 ft., without raising the level of the lake. If a dam 30 ft. high is erected this can be increased to nearly 30,000-horse power. I have entered as the cost of this tunnel and headworks, with pipes down to the power-house wall, \$400,000, which I think ought to cover it unless some unusual unforeseen contingency should arise.

It is exceedingly unfortunate that "Longitudinal Section 1," as indicated on P.W.D. 20697, was omitted from the papers forwarded to me. In the hurry occasioned by the approaching holidays it probably was overlooked. However, I have estimated the cost of all the other items from the power-house to and including the sub-stations; however, I have not counted in the cost of the attendance of these stations. As I understand, you expect to sell energy to the local people and let them retail it.

Detail Cost.

	\$
Generators, 2,000 kw., four of ...	57,200
Exciters, four of ...	3,064
Transformers, 750 kw., twelve of ...	42,260
Switchboards and lightning-arresters ...	9,501
Water-wheels and rigging ...	75,000
Cranes, two 25-ton and one 1-ton ...	7,500
Transformer, water system ...	1,200
„ oil system ...	1,000
Lubricating-oil system ...	1,300
Power-house building ...	18,000
Foundations ...	37,920
Dwellinghouses ...	10,500
Shop building ...	1,000
Warehouse ...	1,000
Shop tools ...	5,000
Haulage from railway to power-site ...	11,288
Erection of machinery ...	9,050
Freight ...	33,276
Wire for transmission-line, double line, seventy miles ...	142,500
Line-supports ...	126,000
Insulators ...	67,200
Eight sub-stations ...	95,000
Emergencies ...	4,241
	\$760,000
Allowing for cost of balance of water system ...	400,000
	\$1,160,000

This equals per horse-power \$116.