

invariably leads to new industries springing up. I have asked numerous manufacturers why they did not make so-and-so, and the general reply was that the cost of power was so high that they could not compete with people outside.

158. Take calcium-carbide—what is that?—It is a combination of coke and lime ground fine into powder, and by means of electrical treatment you get the chemical compound of calcium-carbide. If that is put into water it liberates a gas called acetylene, which is a hydrocarbon.

159. Can you tell me whether that can be properly manufactured without power being generated by water and electricity?—It cannot be generated in any place where coal is as dear as it is here; where it is as high as in any part of the world, as far as I know.

160. Can you say whether there is any prospect of a factory for the manufacture of calcium-carbide being established in Dunedin if your company is admitted?—I have been in correspondence with a company that wishes to get into Dunedin to manufacture it.

161. What power do they ask for?—They ask for 2,000-horse power for the only plant which they could work economically, which means about 2,000 tons of calcium-carbide per year.

162. Are there any other industries that you think might be created if this power were available in Dunedin?—Many other industries could be created. There is carborundum, which is a compound used for grinding purposes. There are many chemical compounds which can only be manufactured economically by electrical means. There is, for instance, bleach, which is used in paper-mills, and which we now have to import from Germany.

163. You have estimated that to supply the electrical light to Greater Dunedin would require 5,000-horse power; you say that 2,000-horse power is suggested for the manufacture of calcium-carbide, and you think that 1,600-horse power already used by steam would become electrical motive power?—Yes.

164. We have had it admitted that the tram service of Dunedin will require 580-horse power and the arc lighting 250, so that already we have over 9,000-horse power accounted for without the further industries which you say may arise from the adoption of electrical power. It is suggested by Mr. Hay that there is a municipal gas company in Dunedin: do you know from your experience whether the introduction of the electrical light in a town necessarily kills the gas company?—In some of the fifteen towns I have mentioned that are supplied by the Bay Counties Power Company there were existing both electric-light plants and gas plants before the advent of the company. The gas companies sold out to the Bay Counties Power Company, and the electric-light companies did the same. Then the Bay Counties Company immediately doubled the capacity of the gas—first, by introducing modern methods and thereby reducing the cost, and, secondly, by decreasing the price of gas to the consumer. In that way the former outputs of the gas plants, which in some towns did not pay, were made to pay by the Company.

165. They had the electric light and gas side by side?—Yes.

166. And the advent of the company referred to resulted in the gas plants being doubled?—Yes.

167. Did they thrive continuously after that?—They did.

168. Is the calculation you have given us of one sixteen-candle-power lamp per capita made on the assumption that the gas company in Dunedin will continue to exist?—Yes, after we have put in our sixteen-candle-power lamps.

169. I do not suppose you have gone into the wider consideration of what power could be supplied, including Dunedin?—I have not gone into the question as to the whole area.

170. You have dealt with what you consider Dunedin may reasonably be expected to consume—the total for all purposes for Greater Dunedin?—Yes; somewhere over 9,000-horse power.

171. And that merely includes the 2,000-horse power for the calcium-carbide factory, and not the other manufactories referred to?—Yes.

172. Is it an advantage in the way of security to have a double supply for fear of one supply failing?—Most assuredly. In all concerns it is always best to have what is called two strings to your bow.

173. Take New York, for instance: it is made an objection to allowing a second company to come in, that it would mean breaking up the ground in the streets, and so on. In New York, how many power companies are operating?—When I was there there were five or six large companies operating on Manhattan Island, and there were numerous companies that supplied several blocks with light.

174. Five or six companies operating in the one area?—Yes.

175. And with their plants and wiring in the same streets?—Yes, and in a great many cases they were duplicated on the same street.

176. Is it not possible, and in practice common, that where there is a failure of one supply, the other one is switched on?—Yes. We had an agreement with companies to buy and sell, and in three different instances when one supply was crippled the other would simply hook on without any trouble; the men simply went and did it.

177. It is suggested that for the tramway system the steam-power of 900-horse power should be held in reserve against accidents. Supposing you were allowed into the city along with the city's own plant, do you think it would be necessary to keep that steam-power as a stand-by?—No. It is highly improbable that with the two different sources of power any accidents could occur to knock them both out at the same time.

178. It has been suggested that there might be competition between the city and the company. It was put by Mr. Hay yesterday that you had to carry your power twice as far as that of the city, and that that would increase the cost to you?—That is so. Our distance is practically twice that of the city.

179. So that in the event of any competition the city should be able to undersell you?—Yes. The question of the two-power supply is shown on this map of the locality where the Bay Counties Company operates.