

the actual works cost of generation by the most modern gas plant in the Christchurch drainage-pumping station is 1.11d. per unit. In these two cases the proposed rate of 0.66d. per unit (that is, on a 50-per-cent. load-factor, £12 per kilowatt per annum, or £9 per horse-power per annum) would capture the business with profit to both parties.

Allowing for the normal growth in demand, I estimate the demand and the revenue from these sources in five years' time as follows:—

	Wellington.	Auckland.	Christchurch.	Dunedin.
Pumping,—				
Maximum horse-power	1,200	800	600	400
Maximum kilowatts	900	600	450	300
Units used per annum	3,960,000	2,640,000	1,980,000	1,320,000
Revenue	£11,000	£7,350	£5,500	£3,680
Harbour requirements,—				
Maximum horse-power	600	500	500	500
Maximum kilowatts	450	375	375	375
Units per annum	1,180,000	980,000	980,000	980,000
Revenue	£4,900	£4,100	£4,100	£4,100
Railway workshops,—				
Maximum horse-power	200	160	600	360
Maximum kilowatts	150	120	450	270
Units per annum	330,000	260,000	980,000	590,000
Revenue	£1,380	£1,080	£4,100	£2,460
Total output	5,470,000	3,880,000	3,940,000	2,890,000
Total revenue	£17,280	£12,530	£13,700	£10,246
Average load-factor (per cent.)	57	60	55	59
Maximum load (kilowatts)	1,100	740	810	560

GENERAL MOTOR-POWER.

Coming now to motive power for factories and general purposes, the total existing power in each city, excluding the classes of power already dealt with, is approximately as follows:—

	Wellington.	Auckland.	Christchurch.	Dunedin.
Steam-engine	10,200	10,000	7,600	7,000
Gas and oil	6,420	5,900	3,140	2,100
Electric motors	5,200	1,400	2,250	6,200
	21,820	17,300	12,990	15,300

The present output of the municipal electric-supply plants in each city for power purposes, and the charges and revenue per unit, are as follows:—

	Wellington.	Auckland.	Christchurch.	Dunedin.
Horse-power of motors connected	2,937	..	520	3,000
Units sold for power purposes	851,158	..	412,314	3,860,000
Load-factor of motors (per cent.)	3.3	..	8.9	14.6
Charges per unit	3d. to 1½d.	..	3d. to 2½d.	2d. to ½d.
Total revenue	£9,774	£1,984	£4,379	£16,669
Average revenue per unit sold	2.66	..	2.55	0.58
Units per rated horse-power per annum	290	..	792	1,285

Considering the low load-factor, the Dunedin charges are too low for general adoption. They are no doubt justified there in order to develop the motor-load; and in special cases, when power is taken largely at periods of very light load, a very low charge is justified. But, the charges for general motor-load operating at a maximum of forty-eight hours per week, and from that down to a few hours per week, as with lifts, the charges should be graded from 3d. down to ½d. per unit to yield an average revenue of 2d. per unit distributed, or 1½d. per unit at the substation, in order to give a satisfactory return. In the cities where the power is distributed by the local authorities this would still leave a reasonable margin of profit to those bodies in retailing at an average of 2d. per unit to cover the cost of distributing-network. Large consumers taking power direct from the various substations or the