COMMONWEALTH BUREAU OF CENSUS AND STATISTICS,

CANBERRA, AUSTRALIA

MANUFACTURING INDUSTRIES

1961-62

No. 31. ELECTRIC LIGHT AND POWER WORKS

Prepared Under Instructions from

THE RIGHT HONORABLE THE TREASURER

by

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EXPLANATORY NOTES

GENERAL: The range of bulletins in this series for 1961-62 is the same as for 1960-61, and a complete list is shown inside the back cover of this bulletin.

Where a number of industries are combined in one bulletin, the introductory paragraph on page 3 specifies the industries so included.

CLASSIFICATION OF FACTORIES. For purposes of industry classification, factories in Australia are classified according to the nature of their product. Where two or more distinct types of industrial activity are carried on in one establishment, a separate return is obtained, wherever practicable, for each activity, in order to allow classification on this basis. In cases where this is not practicable, factories are classified according to predominant activity. These cases are encountered most frequently in the Metal Trades, (e.g. General Engineering firms also producing Agricultural Implements or Stoves, etc.), and to a lesser degree in factories concerned with Skins, Leather, Clothing and Wood products.

Each of the summaries in the "Manufacturing Industries" series relates, generally, to the operations of factories classified to the industry specified. However, figures in the tables showing details of articles produced represent total recorded production of the articles listed, and include quantities produced, as subsidiary production, in industries otherwise classified.

BASIS OF THE STATISTICS. The scope of the factory statistics is fully explained in the annual Secondary Industries Bulletin.

Briefly, a "factory" is defined as an establishment in which four or more persons are employed or where power (other than manual) is used in any manufacturing process. The figures do not include details relating to small establishments not classified for statistical purposes as factories.

All persons employed in the manufacturing activities of the factory are counted as factory employees. The figures relating to employment, therefore, include working proprietors as well as "out-workers", but exclude all those engaged in selling and distribution, such as salesmen, travellers, collectors, carters engaged solely on outward delivery of manufactured goods, and retailing storemen.

The value of materials used includes the value, in the usual sense, of the materials used, stores used, containers, tools replaced and materials used in repairs to plant. In general, it does not include the value of customers' articles or materials repaired, assembled or treated by the factory.

The value of power fuel etc. used includes the cost of light, lubricants and water used.

The value of output is the selling value at the factory (exclusive of all delivery costs and charges and excise duties, but inclusive of bounty and subsidy payments to the manufacturer of the finished article) of all goods made during the year. In addition, it includes the value of other work done, such as repair work, assembling and making-up for customers.

The value of production is the value added to raw materials by the process of manufacture. It is calculated by deducting from the value of factory output the value (at the factory) of the materials used, containers and packing, power, fuel and light used, tools replaced and materials used in repairs to plant (but not depreciation charges). The value of production is the source from which, in addition to wages and salaries, such items as interest, depreciation, profits, taxation, advertising and other sundry charges are met. As details of these other costs of production are not collected, the amounts of profit resulting from factory operations cannot be ascertained from the figures contained herein.

MANUFACTURING INDUSTRIES, AUSTRALIA, 1961-62

ELECTRIC LIGHT AND POWER WORKS

1. SUMMARY OF STATISTICS: The following table provides a summary of the principal statistics of the establishments generating electricity in Australia in the form of a comparative summary for the years 1957-58 to 1961-62 and a dissection by Ownership for 1961-62.

TABLE 1. - ELECTRIC LIGHT AND POWER WORKS : AUSTRALIA

Particulars	Factories (1)	Persons Employed (a)(2)	Salaries and Wages Paid (b) (3)	Power, Fuel and Light, etc. Used (c) (4)	Value of Materials etc. Used (d) (5)	Value of Production (e) (6)	Value of Output (7)
TOTAL : YEARS 1957-58 TO 1961-62							
	Number	Number	£'000	£'000	£'000	£'000	£'000
Year 1957-58	319	12,833	13,467	40,261	4,740	55,514	100,515
" 1958-59	305	13,124	14,011	39,383	4,744	63,422	107,549
" 1959-60	304	12,810	14,564	40,756	4,839	68,582	114,177
" 1960-61	290	12,298	15,018	42,106	4,976	73,224	120,306
" 1961-62	285	12,441	15,916	41,680	5,287	76,579	123,546
DISSECTION BY TYPE OF OWNERSHIP : 1961-62							
Government	74	9,008	11,713	29,229	2,578	64,169	95,976
Local Authority	119	2,310	2,770	7,883	1,428	9,821	19,132
Companies	92	1,123	1,433	4,568	1,281	2,589	8,438

(a) Average over whole year; includes Working Proprietors.
(b) Excludes amounts drawn by Working Proprietors.
(c) Includes Water and Lubricating Oil.
(d) Includes value of tools replaced and repairs to plant.
(e) Value of Production equals column (7) less total of columns (4) and (5).

In the following table, particulars are given for each State for the year 1961-62.

TABLE 2. - ELECTRIC LIGHT AND POWER WORKS : STATES, 1961-62

Particulars	N.S.W.	VIC.	Q'LD.	S.A.	W.A.	TAS.	AUSTRALIA
	No.	No.	No.	No.	No.	No.	No.
Factories	55	41	52	34	89	14	285
Persons Employed -							
Males	4,341	3,510	1,639	(a)	1,037	(a)	12,304
Females	41	31	9	(a)	15	(a)	137
TOTAL	4,382	3,541	1,648	(a)	1,052	(a)	12,441
	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Salaries and Wages Paid	5,558	4,791	1,990	(a)	1,316	(a)	15,916
Value of -							
Power, Fuel and Light, etc. Used	14,877	11,903	7,134	(a)	3,622	(a)	41,680
Materials, etc. Used	1,951	767	1,466	(a)	402	(a)	5,287
Production	38,168	16,508	6,936	(a)	4,467	(a)	76,579
Output	54,996	29,178	15,536	(a)	8,491	(a)	123,546
Land and Buildings (b)	148,195(c)	23,813	12,216	(a)	4,238	(a)	245,389
Plant and Machinery (b)	92,143	92,713	42,569	(a)	15,774	(a)	291,537

(a) Not available for publication, included with total for Australia.
(b) Depreciated or book values at end of year.
(c) A substantial part of the increase in 1961-62 is attributable to new generating capacity brought into use in the Snowy Mountains Hydro-Electric Scheme.
See also notes to Table 1 above.

2. AVERAGE SALARIES, OUTPUT AND PRODUCTION: Particulars of the average salary and wage paid, together with the average values per employee of output and production are shown in the following table for the years 1957-58 to 1961-62.

TABLE 3. - ELECTRIC LIGHT AND POWER WORKS : AVERAGE SALARIES AND WAGES PAID, OUTPUT, ETC. PER EMPLOYEE : AUSTRALIA

Year	Salaries and Wages per Employee (a)	Value of Output per Person Engaged (b)	Value of Production per Person Engaged (b)	Ratio of Salaries and Wages to Value of Production
	£	£	£	%
1957-58	1,053	7,833	4,326	24.26
1958-59	1,071	8,195	4,833	22.09
1959-60	1,142	8,913	5,354	21.24
1960-61	1,226	9,783	5,954	20.51
1961-62	1,284	9,931	6,155	20.78

(a) Excludes Working Proprietors and amounts drawn by them.
(b) Includes Working Proprietors.

3. ELECTRICITY GENERATED: In the next two tables details are given of the electricity generated in Australia during 1961-62 according to ownership of Generating Stations and in total for each State during the years 1957-58 to 1961-62 and the eleven months ending May, 1963.

TABLE 4. - ELECTRICITY GENERATED : AUSTRALIA, 1961-62

('000 kWh.)

Particulars	Government	Local Authorities	Companies	Total
Electric Light and Power Works -				
(i) Sold or used outside Generating Station	18,153,122	2,505,451	1,100,284	21,758,857
(ii) Used in Generating Station	1,236,385	179,562	54,590	1,470,537
(iii) Lost	1,845,608	345,414	32,845	2,223,867
Total Sold, Used or Lost (a)	21,235,115	3,030,427	1,187,719	25,453,261
Electricity Generated in Other Works (b)				821,916
TOTAL GENERATED				(c)26,275,177

(a) Net after adjustment for inter-station transfers and sales.

(b) In factories not classified as Electric Light and Power Works and used mainly within these works.

(c) Of this amount Hydro-Electric generation represented 4,967,565 thousand kWh. and Thermal generation 21,307,612 thousand kWh.

TABLE 5. - TOTAL ELECTRICITY GENERATED : AUSTRALIA

(Million kWh.)

Period	N.S.W.	VIC.	Q'LD.	S.A.	W.A.	TAS.	AUSTRALIA
Year - 1957-58	7,595	5,321	2,133	1,581	829	2,338	19,797
1958-59	8,275	5,704	2,305	1,583	876	2,456	21,199
1959-60	9,200	6,198	2,467	1,864	938	2,532	23,199
1960-61	10,000	6,556	2,693	1,898	1,036	2,631	24,814
1961-62	10,683	6,739	2,837	2,173	1,110	2,733	26,275
Eleven months ended May, 1963	11,049.5	6,431.4	2,765.4	2,173.3	1,106.7	2,899.9	26,426.2

4. EMPLOYMENT: The number of employees, shown in Tables 1, 2 and 7, has been adjusted to represent the average employment over the whole year in those cases where short time was worked. In the following table, the factories have been classified for the years 1957-58 to 1961-62 according to the average number employed during the actual period worked.

TABLE 6. - ELECTRIC LIGHT AND POWER WORKS : FACTORIES CLASSIFIED ACCORDING TO PERSONS EMPLOYED : AUSTRALIA

Number of Persons Employed in each Factory	1957-58		1958-59		1959-60		1960-61		1961-62	
	No. of Fac-tories	No. Em-ployed	No. of Fac-tories	No. Em-ployed	No. of Fac-tories	No. Em-ployed	No. of Fac-tories	No. Em-ployed	No. of Fac-tories	No. Em-ployed
Under 4	151	233	148	223	151	234	141	206	137	216
4	14	56	8	32	12	48	11	44	13	52
5 to 10	68	456	62	410	56	371	45	281	45	301
11 to 20	25	367	25	373	23	338	26	392	26	390
21 to 50	20	665	16	485	16	498	18	545	22	733
51 to 100	15	1,134	17	1,198	18	1,238	23	1,349	16	1,137
101 to 200	11	1,527	15	2,219	14	2,075	9	1,248	10	1,516
201 to 300	4	1,002	4	1,065	3	820	4	969	4	1,009
301 and over	11	7,443	10	7,209	11	7,225	13	7,275	12	7,119
TOTAL	319	12,883	305	13,214	304	12,847	290	12,309	285	12,473
Average Number Employed per Factory	40		43		42		42		44	

Further details of employment are furnished in the two tables which follow. In Table 7 the numbers of males employed are shown for the years 1957-58 to 1961-62 according to the nature of their employment.

TABLE 7. - ELECTRIC LIGHT AND POWER WORKS : PERSONS EMPLOYED : MALES CLASSIFIED ACCORDING TO OCCUPATIONAL STATUS : AUSTRALIA

Occupational Status	1957-58	1958-59	1959-60	1960-61	1961-62
Males					
Working Proprietors	47	42	52	43	43
Managerial and Clerical Staff, including Salaried Managers and Working Directors	709	734	714	629	616
Chemists, Draftsmen and other Laboratory and Research Staff	187	202	225	212	191
Foremen and Overseers	996	1,099	1,104		
Workers in Factory (Skilled and Unskilled)	10,666	10,818	10,475	11,279(a)	11,454(a)
Carters (excluding Delivery only), Messengers and Persons working regularly at Home	101	97	103		
TOTAL (Males)	12,706	12,992	12,673	12,163	12,304
TOTAL (Females) (b)	127	132	137	135	137
TOTAL (Persons)	12,833	13,124	12,810	12,298	12,441

(a) Separate details no longer collected.
(b) Mainly Clerical Staff.

In the following table the number of persons employed in June for each of the years 1958 to 1962 are shown according to age and sex distribution.

TABLE 8. - ELECTRIC LIGHT AND POWER WORKS : DISTRIBUTION OF EMPLOYEES ACCORDING TO AGE AND SEX : AUSTRALIA

(Excluding Working Proprietors)

June (a)	Under 16 Years	16 Years	17 Years	18 Years	19 Years	20 Years	Total 16 to 20 Years	21 Years and over	Total all Ages
MALES									
1958	26	73	83	101	92	71	420	12,349	12,795
1959	14	64	94	107	97	80	442	12,590	13,046
1960	10	78	106	111	119	96	510	11,892	12,412
1961	9	(b)	(b)	(b)	(b)	(b)	499	11,702	12,210
1962	7	(b)	(b)	(b)	(b)	(b)	552	11,662	12,221
FEMALES									
1958	..	5	3	8	9	2	27	101	128
1959	..	4	6	6	10	10	36	96	132
1960	1	2	8	9	7	7	33	97	131
1961	1	(b)	(b)	(b)	(b)	(b)	31	102	134
1962	..	(b)	(b)	(b)	(b)	(b)	42	90	132

(a) On last pay-day in June.
(b) Separate details no longer collected.

5. POWER EQUIPMENT: Statistics of the power equipment of stations are given in the next table for the years 1960-61 and 1961-62. Particulars refer to the rated horsepower of Prime Movers installed, and the kilowatt capacity and the equivalent in terms of horsepower, in various types of Generators installed.

The terms "Total Installed" and "Effective Capacity" so far as they relate to Generators, are defined as follows:-

Total Installed is the kilowatt capacity of all serviceable generators installed, including spares and standby.

Effective Capacity is the kilowatt capacity of all generators which can be linked up at any one time.

The definitions apply to all generating stations including hydro electric plants, except that the effective capacity of the latter is based on the quantity of water available under average conditions.

TABLE 9. - ELECTRIC LIGHT AND POWER WORKS : CAPACITY OF ENGINES AND GENERATORS : AUSTRALIA

Particulars	Steam Engines		Internal Combustion Engines			Water	Total
	Reciprocating	Turbine	Gas	Petrol or other Light Oils	Heavy Oils		
1960-61							
	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.
Engines Installed -							
Total Installed	2,800	6,653,074	6,718	39,148	276,479	2,094,370	9,072,589
	kW.	kW.	kW.	kW.	kW.	kW.	kW.
Generators Installed -							
Kilowatt Capacity -							
Total Installed	2,084	4,919,922	4,588	26,305	189,722	1,522,310	6,664,931
Effective Capacity	2,024	4,672,978	2,671	23,727	172,981	1,483,901	6,358,282
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Horsepower Equivalent -							
Total Installed	2,794	6,595,058	6,150	35,260	254,319	2,040,626	8,934,207
Effective Capacity	2,713	6,264,034	3,580	31,806	231,877	1,989,149	8,523,159
1961-62							
	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.
Engines Installed -							
Total Installed	2,350	6,990,352	9,290	37,849	282,128	2,523,215	9,845,184
	kW.	kW.	kW.	kW.	kW.	kW.	kW.
Generators Installed -							
Kilowatt Capacity -							
Total Installed	1,760	5,163,122	6,383	26,186	191,682	1,826,310	7,215,443
Effective Capacity	1,700	4,937,818	3,945	23,424	173,810	1,820,801	6,961,498
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Horsepower Equivalent -							
Total Installed	2,360	6,921,062	8,556	35,102	256,946	2,448,131	9,672,157
Effective Capacity	2,279	6,619,047	5,288	31,400	232,988	2,440,748	9,331,750

6. POWER, FUEL AND LIGHT, ETC. USED: Details of the quantities and values of the various items of power, fuel and light, etc. used during the years 1959-60 to 1961-62 are shown in the following table.

TABLE 10. - ELECTRIC LIGHT AND POWER WORKS : POWER, FUEL AND LIGHT, ETC. USED : AUSTRALIA

Particulars	Unit of Qty.	Quantity			Value (£)		
		1959-60	1960-61	1961-62	1959-60	1960-61	1961-62
Power, Fuel and Light -							
Coal - Black	ton	7,397,977	7,419,725	7,869,307	26,206,497	24,662,735	24,773,534
Brown	"	9,299,531	8,758,712	10,386,041	5,112,789	4,526,976	4,971,903
Brown Coal Briquettes	"	316,748	903,043	937,348	1,354,345	5,625,859	5,823,672
Coke	"	..	..	..	..	..	..
Wood	"	117,534	126,281	128,783	127,853	104,458	130,470
Fuel Oil	gal.	110,756,057	96,842,507	71,476,731	6,124,969	5,152,240	3,936,833
Tar (Fuel)	"	818,070	467,670	710,430	26,332	15,468	13,947
Gas (a)	-	(b)	(b)	(b)	602,703	741,203	764,223
Other (Charcoal, etc.)	-	(b)	(b)	(b)	449,793	417,212	361,261
Water and Lubricating Oil Used	-	(b)	(b)	(b)	750,324	860,332	904,563
TOTAL		(b)	(b)	(b)	40,755,605	42,106,483	41,680,406

(a) A change in the method of valuation (at works) of gas produced in certain works and used in other plants and/or branches of those works, was introduced in 1959-60. (b) Value only available.

7. VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY: Particulars of the book values of premises occupied and plant installed at the 30th June for the years 1958 to 1962 are shown in the next table. Details of the values of additions and replacements made and depreciation allowed during the year are also shown. It should be noted that the amounts shown are those recorded by factories which were operating during each year and that changes in their number, as well as other factors, affect comparison from year to year. These data exclude the value of premises and plant connected with the distribution of electricity.

TABLE 11. - ELECTRIC LIGHT AND POWER WORKS : VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY : AUSTRALIA

(£)

Year Ended 30th June	Book Values as at 30th June (a)		Additions and Replacements made during year		Depreciation Allowed during year	
	Land and Buildings	Plant and Machinery	Land and Buildings	Plant and Machinery	Land and Buildings	Plant and Machinery
1958	107,162,492	222,542,216	7,387,535	32,999,021	2,320,355	8,368,456
1959	125,858,218	246,164,541	20,386,470	35,239,474	3,456,603	9,271,109
1960	136,086,995	259,899,214	18,478,044	43,017,063	3,931,976	14,148,336
1961	139,789,879	278,006,921	7,612,230	29,731,880	4,914,816	16,169,878
1962	(b)245,389,404	291,536,589	(b)104,728,596	29,620,017	5,426,998	14,787,185

(a) Includes estimated value of rented premises and machinery.
(b) A substantial part of the increase in 1961-62 is attributable to new generating capacity brought into use in the Snowy Mountains Hydro-Electric Scheme.

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