COMMONWEALTH BUREAU OF CENSUS AND STATISTICS, CANBERRA
AUSTRALIA

MANUFACTURING INDUSTRIES

1954-55

NO. 31. ELECTRIC LIGHT AND POWER WORKS

Prepared Under Instructions from
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by

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MANUFACTURING INDUSTRIES : 1954-55

P R E F A C E

1. GENERAL: The Bulletins in the series for 1954-55 are listed on the back of the cover of this Bulletin and incorporate the same range of industries as the 1953-54 series.

Where a number of industries are combined in one Bulletin the introductory paragraph on Page 3 specifies the industries so included.

2. 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 and 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. Figures shown in the quantity tables herein represent total recorded production of the articles listed and include quantities produced, as subsidiary production in industries otherwise classified.

3. 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. It should be noted that details relating to small establishments not classified for statistical purposes as factories are not included in the figures shown herein.

All persons employed in the manufacturing activities of the factory are counted as factory employees. The figures relating to employment, therefore, 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 figures, however, do include, proprietors who work in their own businesses as well as "out-workers".

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 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 such items as wages, interest, depreciation, profits, taxation, advertising and other sundry charges are met. As full details of costs of production are not collected, the amount of profit resulting from factory operations cannot be ascertained from the figures contained herein.

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MANUFACTURING INDUSTRIES AUSTRALIA 1954-55

ELECTRIC LIGHT AND POWER WORKS

1. SUMMARY OF STATISTICS: The following table furnishes a summary of the principal statistics of the establishments generating electricity in Australia in the form of, (A) a comparative summary for the years 1938-39, 1945-46 and 1952-53 to 1954-55 and, (B) a dissection by Ownership for 1954-55.

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)
	Number	Number	£'000	£'000	£'000	£'000	£'000
(A) Comparative Summary							
Year 1938-39	395	6,498	1,877	3,239	519	8,725	12,483
" 1945-46	372	7,071	2,588	6,399	1,029	12,718	20,146
" 1952-53	349	10,891	9,675	32,205	3,296	24,582	60,083
" 1953-54	351	11,395	10,308	35,083	4,800	30,098	69,981
" 1954-55	351	11,927	11,457	36,548	4,171	37,567	78,286
(B) Dissection by Type of Ownership : 1954-55							
Type of Ownership							
Government	61	8,286	8,042	25,097	1,611	27,776	54,483
Local Authority	158	2,346	2,103	7,074	1,687	5,878	14,639
Companies	132	1,295	1,312	4,377	873	3,913	9,163

(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 during the year 1954-55.

TABLE 2 : ELECTRIC LIGHT AND POWER WORKS : STATES, 1954-55

Particulars	N.S.W.	VIC.	Q'LD.	S.A.	W.A.	TAS.	AUSTRALIA
Factories	No. 85	No. 62	No. 59	No. 42	No. 94	No. 9	No. 351
Persons Employed							
Males ..	5,325	2,878	1,349	(a)	926	(a)	11,832
Females ..	37	13	1	(a)	19	(a)	95
Total:	5,362	2,891	1,350	(a)	945	(a)	11,927
	£'000	£'000	£'000		£'000		£'000
Salaries and Wages Paid ..	5,253	2,791	1,178	(a)	923	(a)	11,457
Value of -							
Power, Fuel and Light, etc. Used	14,687	9,461	5,251	(a)	3,353	(a)	36,548
Materials etc. Used	1,579	457	1,550	(a)	306	(a)	4,171
Production ..	18,397	9,128	3,402	(a)	2,603	(a)	37,567
Output ..	34,663	19,046	10,203	(a)	6,262	(a)	78,286
Land & Buildings (b)	17,791	12,411	6,689	(a)	3,187	(a)	60,121
Plant & Machinery (b)	45,994	47,397	21,735	(a)	9,513	(a)	146,274

(a) Not available for publication, included with total for Australia.
(b) Depreciated or book values at end of year.

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 1938-39, 1945-46 and 1952-53 to 1954-55.

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
	£	£	£	%
1938-39	293	1,921	1,341	21.54
1945-46	370	2,849	1,799	20.35
1952-53	895	5,517	2,257	39.36
1953-54	910	6,141	2,641	34.25
1954-55	966	6,564	3,150	30.50

(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 1954-55 according to ownership of Generating Stations and in total for each State during the years 1938-39, 1945-46 and 1952-53 to 1954-55.

TABLE 4 : ELECTRICITY GENERATED : AUSTRALIA, 1954-55
('000 kWh.)

Particulars	Government	Local Authorities	Companies	Total
Electric Light and Power Works -				
(i) Sold or used outside Generating Station ..	9,393,608	1,701,624	1,345,453	12,440,685
(ii) Used in Generating Station	650,581	74,750	72,718	798,049
(iii) Lost	1,047,418	278,735	36,947	1,363,100
Total Sold, Used or Lost (a):	11,091,607	2,055,109	1,455,118	14,601,834
Electricity Generated in Other Works (b)				569,738
Total Generated:				(c)15,171,572

(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 2,007,000 thousand kWh and Thermal generation 13,164,572 thousand kWh.

TABLE 5 : TOTAL ELECTRICITY GENERATED : AUSTRALIA

(Million kWh.)

Year	N.S.W.	VIC.	Q'LD.	S.A.	W.A.	TAS.	AUSTRALIA
1938-39	1,948	1,223	387	256	307	567	4,688
1945-46	2,832	1,904	613	402	339	820	6,910
1952-53	4,868	3,193	1,349	822	569	1,244	12,045
1953-54	5,450	3,693	1,511	955	627	1,471	13,707
1954-55	5,951	4,152	1,658	1,119	703	1,589	15,172
1955-56(a)	6,497	4,647	1,804	1,239	758	1,843	16,788

(a) Preliminary subject to revision.

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 1938-39, 1945-46 and 1952-53 to 1954-55 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

No. of Persons Employed in each Factory	1938-39		1945-46		1952-53		1953-54		1954-55	
	No. of Factories	No. Employed	No. of Factories	No. Employed	No. of Factories	No. Employed	No. of Factories	No. Employed	No. of Factories	No. Employed
Under 4	203	383	184	335	165	264	167	262	163	262
4	44	176	36	144	21	84	20	80	21	84
5 to 10	82	513	87	547	86	585	78	534	77	520
11 to 20	28	415	20	285	25	353	31	433	35	508
21 to 50	20	675	19	529	22	713	24	871	18	602
51 to 100	9	671	13	924	13	931	14	977	18	1,312
101 to 200	9	3,685	5	770	4	565	4	625	6	860
201 to 300			4	1,085	2	419	2	479	2	489
301 and over			4	2,456	11	7,014	11	7,220	11	7,322
TOTAL:	395	6,518	372	7,075	349	10,928	351	11,481	351	11,959
Average Number Employed per Factory	17		19		31		33		34	

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 1938-39, 1945-46 and 1952-53 to 1954-55 according to the nature of their employment. Because of the change in classification of occupational status adopted in 1945-46, group comparison between 1938-39 and the later years shown is not possible.

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

Occupational Status	1938-39	1945-46	1952-53	1953-54	1954-55
Males					
Working Proprietors	84	80	75	70	68
Managerial and Clerical Staff, including Salaried Managers and Working Directors	6,144	465	625	706	720
Chemists, Draftsmen and other Laboratory and Research Staff ..		78	143	151	180
Foremen and Overseers ..		334	644	746	753
Workers in Factory (Skilled & Unskilled)		5,997	9,244	9,568	10,026
Carters (excl. Delivery only) Messengers and Persons working regularly at Home	107	48	79	68	85
TOTAL Males:	6,335	7,002	10,810	11,309	11,832
TOTAL Females (a):	163	69	81	86	95
TOTAL PERSONS:	6,498	7,071	10,891	11,395	11,927

(a) Mainly Clerical Staff.

In the following table the number of persons employed in June for each of the years 1939, 1946 and 1953 to 1955 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	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									
1939 (a)	15	(b)	(b)	(b)	(b)	(b)	351	5,890	6,256
1946 (a)	21	57	70	94	81	66	368	6,935	7,324
1953 (c)	13	45	85	102	91	70	393	10,528	10,934
1954 (c)	20	34	63	77	102	73	349	11,201	11,570
1955 (c)	18	47	66	70	85	98	366	11,645	12,029
FEMALES									
1939 (a)	1	(b)	(b)	(b)	(b)	(b)	58	91	150
1946 (a)	-	3	4	5	4	5	21	41	62
1953 (c)	-	1	2	4	7	1	15	65	80
1954 (c)	1	3	1	5	7	5	21	65	87
1955 (c)	-	2	6	7	6	4	25	72	97

(a) Pay-day nearest 15th June.
(b) Details not collected.
(c) On last pay-day in June.

5. POWER EQUIPMENT: Statistics of the power equipment of stations are given in the next table for the years 1953-54 and 1954-55. Particulars refer to the rated horse-power of Prime Movers installed, and the kilowatt capacity and the equivalent in terms of horse-power, in various types of the 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		
1953-54							
Engine Installed -	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.
Total Installed ,,	10,313	3,841,909	16,597	9,916	324,183	531,156	4,734,074
Generators Installed -	kW.	kW.	kW.	kW.	kW.	kW.	kW.
Kilowatt Capacity -							
Total Installed	7,281	2,794,973	11,425	7,378	214,843	380,709	3,416,609
Effective Capacity	6,921	2,527,587	8,775	5,837	195,781	376,334	3,121,235
Horse Power Equivalent -	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Total Installed	9,759	3,746,606	15,314	9,889	287,993	510,333	4,579,894
Effective Capacity	9,277	3,388,180	11,762	7,823	262,441	504,469	4,183,952
1954-55							
Engines Installed -	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.	Rated H.P.
Total Installed	7,226	4,255,372	14,524	11,383	347,235	793,738	5,429,478
Generators Installed -	kW.	kW.	kW.	kW.	kW.	kW.	kW.
Kilowatt Capacity -							
Total Installed	5,085	3,126,212	10,188	8,092	231,756	572,505	3,953,838
Effective Capacity	4,725	2,874,229	8,188	6,007	212,526	566,375	3,672,050
Horse Power Equivalent -	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
Total Installed	6,816	4,190,625	13,657	10,847	310,664	767,432	5,300,041
Effective Capacity	6,333	3,852,846	10,976	8,052	284,887	759,214	4,922,308

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 1938-39, 1953-54 and 1954-55 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 (£)		
		1938-39	1953-54	1954-55	1938-39	1953-54	1954-55
Power, Fuel & Light							
Coal - Black	ton	1,927,240	5,836,338	5,915,872	2,035,953	24,233,640	24,915,327
Brown	"	2,178,610	5,306,825	5,898,793	311,856	3,429,476	3,864,048
Brown Coal Briquettes	"	(a)	427,197	384,816	(a)	1,873,029	1,637,261
Coke	"	18,536	12,226	15,047	10,726	80,641	92,452
Wood	"	206,516	66,390	38,976	168,591	170,121	95,723
Fuel Oil	gal.	17,329,303	60,433,291	76,326,253	497,958	4,577,460	5,194,909
Tar (fuel)	"	(b)	170,444	171,641	(c)	2,901	2,925
Gas	-	(d)	(d)	(d)	75,682	121,183	127,563
Other (Charcoal etc.)	-	(d)	(d)	(d)	9,144	91,578	71,251
Water & Lubricating Oil Used	-	(d)	(d)	(d)	129,318	502,955	546,211
TOTAL:		(d)	(d)	(d)	3,239,228	35,082,984	36,547,670

(a) Included with Brown Coal. (b) Not available. (c) Included with "Other (Charcoal, etc.)". (d) 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 1938-39, 1945-46 and 1952-53 to 1954-55 are shown in the next table. Details of the values of additions and replacements made and depreciation allowed during the same period 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	Book Value 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
1938-39	8,388,057	27,751,494	685,815	4,002,306	202,274	925,801
1945-46	9,234,673	32,130,749	381,879	3,288,214	169,929	1,580,037
1952-53	29,531,349	94,169,264	8,799,407	29,163,587	453,273	2,130,079
1953-54	47,369,225	122,773,375	18,545,180	32,858,110	758,481	3,969,760
1954-55	60,120,947	146,273,460	13,797,559	28,300,103	1,002,203	4,790,886

(a) Includes estimated value of rented premises and machinery.

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