

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS

CANBERRA, AUSTRALIA

MANUFACTURING INDUSTRIES

1960-61

NO. 32 GAS WORKS

Prepared Under Instructions from

THE RIGHT HONORABLE THE TREASURER,

by

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COMMONWEALTH STATISTICIAN

PREFACE

1. GENERAL: The range of Bulletins in this series for 1960-61 is the same as for 1959-60 and a complete list is shown on the back of the 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.

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. 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, 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 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, 1960-61

GAS WORKS

1. **SUMMARY OF STATISTICS:** The following table furnishes a summary of the principal statistics of the factories classified as Gas Works in Australia in the form of (A) a comparative summary for the years 1956-57 to 1960-61 and (B) a dissection by Ownership for 1960-61.

TABLE 1. - GAS WORKS : AUSTRALIA

Year	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 (f)(7)
	Number	Number	£'000	£'000	£'000	£'000	£'000
(A) COMPARATIVE SUMMARY							
1956-57	94	4,138	4,448	2,591	15,598	9,894	28,083
1957-58	88	3,783	4,309	2,720	15,030	10,577	28,327
1958-59	88	3,917	4,298	2,712	14,996	11,239	28,947
1959-60	88	3,790	4,367	2,942	14,738	12,037	29,717
1960-61	84	3,733	4,582	3,012	14,890	13,541	31,443

(B) ACCORDING TO OWNERSHIP : 1960-61

Type of Ownership -							
Government	8	1,240	1,660	570	4,066	3,234	7,870
Local Authority	22	194	222	172	469	416	1,057
Companies	54	2,299	2,700	2,270	10,355	9,891	22,516

(a) Average over whole year; includes Working Proprietors. (b) Excludes amounts drawn by Working Proprietors. (c) Includes Water and Lubricating Oil but excludes the value of coke produced and used in own works in some States. (d) Includes value of containers, packing, etc., replacement of tools and repairs to plant. (e) Value of Production equals column (7) less total of columns (4) and (5). (f) Value of gas and other goods produced. Gas is valued at point of consumption less costs of distribution. Other articles produced are valued at selling value at works, excluding all delivery costs and charges.

In the following table particulars are given for each State during the year 1960-61.

TABLE 2. - GAS WORKS : STATES, 1960-61

Particulars	N.S.W.	Vic.	Q'ld.	S.A.	W.A.	Tas.	Aust.
	No.	No.	No.	No.	No.	No.	No.
Factories	35	25	16	3	(a)	(a)	84
Persons Employed -							
Males	1,281	1,462	326	418	(a)	(a)	3,703
Females	14	8	3	5	..	..	30
Total:	1,295	1,470	329	423	(a)	(a)	3,733
	£'000	£'000	£'000	£'000	£'000	£'000	£'000
Salaries and Wages Paid	1,622	1,896	322	500	(a)	(a)	4,582
Value of -							
Power, Fuel and Light, etc. used	2,219	524	41	88	(a)	(a)	3,012
Materials, etc. used	5,919	5,323	1,142	1,765	(a)	(a)	14,890
Production	7,015	4,163	1,107	824	(a)	(a)	13,541
Output	15,153	10,010	2,290	2,677	(a)	(a)	31,443
Land and Buildings (b)	1,915	3,969	782	238	(a)	(a)	7,235
Plant and Machinery	8,051	13,630	2,085	3,750	(a)	(a)	29,347
	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.	H.P.
H.P. of Engines ordinarily in use	16,477	17,856	2,917	7,631	(a)	(a)	46,363

(a) Not available for publication. These figures are included in the 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 of output and production per person engaged and the ratio of salaries and wages to the value of production, are shown in the following table for the years 1956-57 to 1960-61.

TABLE 3. - GAS 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 %
1956-57	1,075	6,787	2,391	44.96
1957-58	1,139	7,488	2,796	40.74
1958-59	1,097	7,390	2,869	38.24
1959-60	1,152	7,841	3,176	36.28
1960-61	1,227	8,423	3,627	33.84

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

3. MATERIALS USED AND ARTICLES PRODUCED: In the following table details are given of the quantities and values of materials used and town gas produced in Australia for the year 1960-61.

TABLE 4. - MATERIALS USED AND GAS PRODUCED IN GAS WORKS : AUSTRALIA, 1960-61

Particulars	Quantity	Value (£)
<u>Materials Used -</u>		
Coal carbonized (a)	1,725,776 tons	10,033,544
Petroleum Gas purchased	3,884,606 '000 cubic feet	1,978,561
	55,004 Equiv. in '000 therms	
Oil (b)	14,494,062 gallons	752,454
	'000 cubic feet	Equivalent in '000 therms (c)
<u>Town Gas Produced -</u>		
Gas sold	43,965,212	229,106
Gas used in gas works	199,825	1,010
Gas lost	6,518,526	33,448
Total Gas Sold, Used or Lost:	50,683,563	263,564

(a) Black Coal - excludes Brown Coal Briquettes used as material in Victorian Gasworks.
(b) Used as Material, not as Fuel. (c) 1 Therm = 100,000 British Thermal Units (B.T.U.)

The following table shows details of the principal by-products of Gas Works. Some of the items are also produced in other works, and the table has accordingly been extended to show separately (i) production in Gas Works and (ii) production in all Australian factories.

TABLE 5. - PRINCIPAL BY-PRODUCTS OF GAS WORKS : AUSTRALIA, 1960-61

Particulars	Unit of Quantity	Produced in Gas Works		Produced in All Factories	
		Quantity	Value (£)	Quantity	Value (£)
Coke	ton	764,626	(a)	(b) 3,503,131	(a)
Coke Breeze	"	132,591	(a)	376,123	(a)
Tar - Crude (c)	gallon	(d) 57,132,117	(a)	57,132,117	(a)
Refined, for sale	"	(d) 29,674,655	(d) 1,521,420	29,674,655	1,521,420
Ammoniacal Liquor	"	(a)	(d) 75,909	(a)	75,909
Sulphate of Ammonia	ton	(e)	(e)	98,988	1,818,389

(a) Not available. (b) Includes 2,738,505 tons of Metallurgical Coke. (c) Includes quantities produced and used in works producing them. (d) Includes production in other works, details of which are not available for separate publication. (e) Sections of Gasworks producing Sulphate of Ammonia are separately classified and total production in all factories is shown in the last two columns.

The following table gives particulars of the quantities of (i) materials used and (ii) gas produced in Gas Works in Australia during the years 1956-57 to 1960-61.

TABLE 6. - GAS WORKS : MATERIALS USED AND GAS PRODUCED : AUSTRALIA

Year	Materials Used				Gas Produced	
	Coal (a)		Purchased Petroleum Gas		Cubic Feet	
	'000 Tons	'000 Cub. Ft.	'000 Therms (b)	'000 Gallons	'000	'000
1956-57	1,546	2,850,277	34,698	6,533	46,652,513	236,798
1957-58	1,779	3,424,095	40,563	7,703	47,655,346	240,428
1958-59	1,761	3,261,607	39,989	11,183	48,567,069	244,721
1959-60	1,744	3,546,679	47,876	12,983	49,593,165	256,427
1960-61	1,726	3,884,606	55,004	14,494	50,683,565	263,564

(a) Excludes Brown Coal Briquettes used in Victoria. (b) Equivalent in terms.

1 Therm = 100,000 British Thermal Units (B.T.U.).

Note: Preliminary figures for Gas produced for the year ended 30th June, 1962 was 50,630,700,000 cubic feet, equivalent to 266,341,600 therms.

4. **EMPLOYMENT:** The number of employees shown in Tables 1, 2, 8 and 9 has been adjusted to represent the average number employed over the whole year. In the following table, the factories have been classified for the years 1956-57 to 1960-61 according to the average number employed during the actual period worked.

TABLE 7. - GAS WORKS : CLASSIFIED ACCORDING TO PERSONS EMPLOYED : AUSTRALIA

No. of Persons employed in each Factory	1956-57		1957-58		1958-59		1959-60		1960-61	
	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	10	27	5	15	5	14	5	13	8	21
4	7	28	8	32	8	32	8	32	6	24
5 to 10	33	225	32	216	32	215	33	225	30	217
11 to 20	17	260	17	257	18	266	19	285	17	250
21 to 50	12	328	12	337	11	311	9	270	10	326
51 to 100	4	277	4	264	3	167	5	358	5	401
101 to 200	7	1,087	6	866	7	979	5	747	4	646
201 and over	4	1,967	4	1,797	4	1,935	4	1,871	4	1,848
TOTAL:	94	4,199	88	3,784	88	3,919	88	3,801	84	3,733
Average Number employed per Factory	45		43		45		43		44	

Further details of employment are furnished in the next three tables. In Table 8, the number of persons employed are shown according to the nature of their employment for the year 1960-61.

TABLE 8. - GAS WORKS : PERSONS EMPLOYED ACCORDING TO OCCUPATIONAL STATUS :

AUSTRALIA : 1960-61

Occupational Status	Type of Ownership			
	Government	Local Authority	Other	Total
Working Proprietors	..	..	..	..
Managerial and Clerical Staff, including Salaried Managers and Working Directors	95	24	145	264
Chemists, Draftsmen and Other Laboratory and Research Staff	60	1	75	136
Foremen and Overseers	}	(a)1,085	(a)169	(a)2,079
Workers in Factory (Skilled and Unskilled)				
Carters (incl. Delivery only), Messengers and Persons Working regularly at Home				
TOTAL:	1,240	194	2,299	3,733

(a) Separate details no longer collected.

In Table 9, the number of males employed are shown for the years 1956-57 to 1960-61 according to the nature of their employment.

TABLE 9. - GAS WORKS : PERSONS EMPLOYED : MALES CLASSIFIED ACCORDING TO OCCUPATIONAL STATUS : AUSTRALIA

Occupational Status	1956-57	1957-58	1958-59	1959-60	1960-61
MALES -					
Working Proprietors	..	..	..	..	..
Managerial and Clerical Staff including Salaried Managers and Working Directors	249	238	245	243	244
Chemists, Draftsmen and Other Laboratory and Research Staff	129	122	133	126	130
Foremen and Overseers	211	200	226	225	} 3,329(a)
Workers in Factory (Skilled and Unskilled)	3,418	3,107	3,243	3,125	
Other (Carters, Messengers, etc.)	104	91	46	44	
(Males:	4,111	3,758	3,893	3,763	3,703
TOTAL : (Females: (b)	27	25	24	27	30
(Persons:	4,138	3,783	3,917	3,790	3,733

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

In the following table the number of persons employed in June, in each of the years 1957 to 1961 is shown according to age and sex distribution.

TABLE 10. - GAS WORKS : DISTRIBUTION OF EMPLOYEES ACCORDING TO AGE AND SEX : AUSTRALIA
(Excluding Working Proprietors)

Last Pay Day in 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									
1957	2	6	8	7	18	13	52	4,002	4,056
1958	..	7	5	5	6	12	35	3,664	3,719
1959	1	4	9	6	7	10	36	3,861	3,905
1960	1	8	4	8	14	12	46	3,762	3,809
1961	4	(a)	(a)	(a)	(a)	(a)	53	3,665	3,722
FEMALES									
1957	..	..	..	2	2	2	6	20	26
1958	..	3	..	1	2	1	7	18	25
1959	..	1	3	1	2	1	8	17	25
1960	..	1	1	2	1	4	9	18	27
1961	..	(a)	(a)	(a)	(a)	(a)	9	21	30

(a) Separate details no longer collected.

5. **POWER EQUIPMENT:** Statistics of the power equipment installed are given in the next table. The details show the rated horsepower of the engines ordinarily in use together with those in reserve or idle.

TABLE 11. - GAS WORKS : TYPES AND RATED HORSEPOWER OF ENGINES : AUSTRALIA

Class of Engine	Rated Horsepower of Engines					
	Ordinarily in Use			In Reserve or Idle		
	1958-59	1959-60	1960-61	1958-59	1959-60	1960-61
Steam -						
Reciprocating	9,463	8,509	7,575	1,871	2,641	2,523
Turbine	8,329	8,780	9,008	8,420	6,926	7,050
Internal Combustion -						
Gas	1,783	1,744	1,712	271	361	355
Petrol or other Light Oils	1,216	1,309	1,315	561	614	466
Heavy Oils	..	..	..	25	3	9
Total, Prime Movers:	20,791	20,342	19,610	11,148	10,545	10,403
Motors driven by electricity -						
Purchased	25,952	25,716	26,753	3,779	3,731	4,349
Own Generation	(a)5,202	(a)5,053	(a)4,551	1,409	670	1,904
Total, Electricity:	31,154	30,769	31,304	5,188	4,401	6,253
TOTAL POWER EMPLOYED:	46,743	46,058	46,363	16,336	14,946	16,656

(a) These motors are driven by electricity generated by Prime Movers and to avoid duplication are excluded from statistics of total power employed.

6. **POWER, FUEL AND LIGHT, ETC. USED:** Details of the quantities and values of the various items of power, fuel and light, etc., used are shown in the following table for the years 1958-59 to 1960-61.

TABLE 12. - GAS WORKS : POWER, FUEL AND LIGHT, ETC. USED : AUSTRALIA

Particulars	Unit of Quantity	Quantity			Value (£)		
		1958-59	1959-60	1960-61	1958-59	1959-60	1960-61
Power, Fuel and Light -							
Coal - Black	ton	5,964	2,153	1,908	39,317	14,437	10,394
Brown	"	54,092	57,539	60,477	91,404	97,806	102,800
Coke	"	247,742	250,864	249,907	1,580,183	1,716,520	1,710,687
Wood	"	984	1,700	553	2,450	3,684	1,748
Fuel Oil	'000 gals.	2,347	2,567	1,699	93,649	96,751	60,162
Tar (Fuel)	"	2,833	3,133	3,737	147,098	157,771	191,549
Electricity	-	(a)	(a)	(a)	419,193	523,793	544,571
Coal Gas	-	..	..	(a)	..	..	18
Other (Charcoal, etc.)	-	(a)	(a)	(a)	175,128	141,597	173,795
Water and Lubricating Oil Used	-	(a)	(a)	(a)	163,287	189,505	216,600
TOTAL:		(a)	(a)	(a)	2,711,709	2,941,864	3,012,324

(a) Value only available.

7. VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY: Particulars of the book values of premises occupied and plant installed at 30th June for the years 1956-57 to 1960-61 are shown in the next table. Details of the values of additions and replacements made and depreciation allowed during the same periods 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.

TABLE 13. - GAS WORKS : VALUE OF LAND AND BUILDINGS, PLANT AND MACHINERY :

AUSTRALIA

(£)

Year	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
1956-57	5,188,866	27,666,648	2,549,119	8,199,727	76,392	1,015,205
1957-58	5,709,535	26,823,186	233,136	1,939,677	117,086	943,572
1958-59	6,078,535	28,126,930	215,378	1,986,507	139,333	1,138,482
1959-60	5,945,770	29,346,201	187,176	2,799,692	166,427	1,249,481
1960-61	7,234,720	29,346,502	361,946	1,451,420	165,746	1,241,224

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

COMMONWEALTH BUREAU OF CENSUS AND STATISTICS
CANBERRA. A.C.T. 21ST SEPTEMBER, 1962

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NOTE: - Inquiries concerning these statistics may be made in Canberra by telephoning UO413 Extension 301 or, in each State Capital, by telephoning the office of the Bureau of Census and Statistics.