## 7 Manufacturing,

 Mining, and Energy

## MANUFACTURING

## Overview

Manulacturing remains the most significant industry in terms of its contribution to the State's Gross Domestic Product (GDP) at factor cost. However, its share of GDP has been steadily declining, dropping from 23.1 per cent in 1982 to 21.2 per cent in 1988-89.

A simitar patlern occurred at the national Icvel with manufacturing's share of GDP at factor cost dropping from 18.6 per cent to 17.4 per cent.

## Victoria compared with Australia

In 1988-89, Victorian manufacturing industry contributed 50 per cent or more of the Australian manufacturing industry's turnover in the Transport equipment (51 per cent), Clothing and footwear (53 per cent), and Textiles ( 52 per cemt) ASIC subdivisions.
Victorian based establishments accounted for 52 per cent of employment within the Australian Textiles, and Clothing and footwear manufacturing industrics during 1988-89.

Vietorian manufacturing industry invested $\$ 2,698 \mathrm{~m}$ in private new fixed capital expenditure during 1988-89. This compared with $\$ 2,595 \mathrm{~m}$, in 1987-88.

## Number of establishments

Over the period 1982-83 to 1988-89, the number of Victorian manufacturing establishments with four or more persons employed increased from 8,392 to 9,771 ( 16.4 per cent).
However, the increase applied predominantly to estublishments in the employment size range of 4 to 100 persons, where the number of establishments increased by 11.1 per cent. The largest increase in the number of manufacturing establishments occurred between 1986-87 (9,109 establishments operating) and 1987-88 (9,858 operating).

## Employment

During May 1989, manufacturing employment comprised 19.6 per cent of the Victorian labour force, compared with 24.2 per cent in May 1982.
Between 1982-83 and 1988-89 cmployment in the Victorian manufacturing sector increased from 349,679 persons to 367,376 an increase of 0.5 per cem. The year to year movements have fluctuated considerably, ranging from a decrease of 10.1 per cent in $1982-83$ to an increase of 2.9 per cent in 1987-88.

On an industry sub-division basis, the only decrease in employment between 1982-83 and 1988-89 occurred in the Chemical, petroleum, and coal products sub-division (down 1,139 or 5.6 per cent). Conversely the Paper, paper products, printing and publishing sub-division rccorded an increase of 4,118 persons ( 12.4 per cent) employed during the period under review.

## Melbourne Statistical Division (MSD)

The number of manufacturing establishments with four or more employees in the MSD increased from 6,734 in 1982-83 to 7,884 in 1988-89; however manufacturing employment fell from 300,741 persons to 296,562 persons during the same period.

In 1988-89, 80.7 per cent of persons cmployed by the Victorian manufacturing industry worked for establishments located within the Melbourne Statistical Division.

## Turnover and value added

Turnover of Victorian manufacturing establishments at current prices increased by 86.2 per cent between 1982-83 and 1988-89. Value addel increased by 46.4 per cent between 1982-83 and 1986-87 in current price terms. Data for valuc added by Victorian manufacturing establishments were not collected in respect of 1987-88 and 1988-89.

Within individual industry subdivisions, the greatest percentage increase in turnover at current prices was 121.2 per cent in the Non-metallic mineral products sub-division, Collowed by the Paper, paper products, printing and publishing sub-division with an increase of 101.0 per cent.
In constant price terms, the Non-metallic mincral products sub-division reported the greatest increase in turnover at 55.3 per cent. Other significant increases were 44.4 per cent for the Paper, paper products, printing and publishing sub-division, and 36.9 per cent for the Basic metal products sub-division. At the other end of the scale, the Wood, wood products and furniture sub-division showed a reduction of 6.1 per cent in turnover at constant prices between 1982-83 and 1988-89.

## Wages and salaries

Despite the decline in employment within Victorian manufacturing establishments, wages and salaries paid increased by 7.0 per cent (from $\$ 8,302 \mathrm{~m}$ to $\$ 8,885 \mathrm{~m}$ ) over the period 1987-88 to 1988-89. On the other hand, turnover at current prices increased by 13.4 per cent over the same period. Between 1982-83 and 1988-89 wages and salaries increased by 49.3 per cent, while turnover at current prices increased by 86.2 per cent.

## Major manufacturing industries

In 1988-89, the Transport cequipment inclustry made the greatest contribution to Victorian manulacturing industry in terms of employment and turnover. It provided 14.2 per cent and 14.5 per eent respectively.

The Wood, wood products, and furniture and Fabricated metal products industry subdivisions contained the greatest number of manufacturing establishments with 1,385 and 1,305 , respectively.

## Industry profile - Transport equipment Victoria (ASIC subdivision 32)

At 30 June 1989, there were 451 cstablishments classified to the Transport equipment ASIC subdivision. These establishments contributed 14.2 per cent of Victoria's manufacturing employment. Victorian based establishments accounted for 45.1 per cent ol cmployment within the Australian Transport equipment industry.

Between 1983 and 1989, Victorian employment within the subdivision decreased by 3.8 per cent while the number of manufacturing establishments increased by 20.6 per cent.

Wages per person employed rose by 41.0 per cent during this period.
During the six year period under review, the motor vehicle and parts industry group showed an overall increase in the number of establishments and employment, by 13.4 and 4.1 per cent respectively. The other transport equipment industry group provided a 52.9 per eent increase in the number of establishments, but experienced a drop in employment of 25.1 per cent. Turnover for both industry groups increased, by 95.1 per cent for motor vehicles and parts, and by 42.8 per cent for other transport.

TABLE 7.1 MANUFACTURING ACTIVITY, VICTORIA, 1901 TO 1967-68

| Year | Manufactwring establishments | Employment (a) | Wages and salaries. paid (b) | Turnover (c) | Materials and fuel used | $\begin{aligned} & \text { Value } \\ & \operatorname{added}(d) \end{aligned}$ | $\begin{array}{r} \text { Fixed capital } \\ \text { expenditure } \\ \text { less disposals (e) } \end{array}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | number | number | \$m | Sm | \$m | \$m | \$m |
| 1901 | 3,249 | 66,529 | n.a. | n.a. | п.a. | n.a. | 25 |
| 1911 | 5,126 | 111,948 | 18 | 84 | 51 | 32 | 28 |
| 1920-21 | 6,532 | 140,743 | 43 | 212 | 135 | 77 | 71 |
| 1932-33 | 8,612 | 144,428 | 42 | 204 | 122 | 82 | 136 |
| 1946-47 | 10,949 | 265,757 | 156 | 631 | 368 | 263 | 244 |
| 1953-54 | 15,533 | 331,277 | 472 | 1,971 | 1,154 | 817 | 679 |
| 1960-61 | 17,173 | 388,(050 | 776 | 3,332 | 1,914 | 1,418 | 1,642 |
| 1965-66 | 17,980) | 439,149 | 1,077 | 4,625 | 2,597 | 2,028 | 2,386 |
| 1967-68 | 18,030) | 449,945 | 1,244 | 5,351 | 2,957 | 2,395 | 2,685 |

(a) Average over whole year, including working proprictors.
(b) Excludes drawings of working proprictors.
(c) Outpur, excluding other revenue.
(d) Value added in process of production (ic. value of output less value of materials and fuel, etc, used).
(e) Comprises land, buildings, plant, and machinery.

TABLE 7.2 MANUFACTURING ACTIVITY, VICTORIA, 1968-69 TO 1988-89

|  | Manufacturing establishments (a) | Eimploy. ment (b) | Wages and salaries paid (c) | Turnover | Purchases, tranyjers in and selected expenses | Value added (d) | Fixed capital expenditure less disposals |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | number | number | Sm | Sm | Sm | Sm | \$m |
| 1968-69 | 11,563 | 440,236 | 1,342 | 6,336 | 3,861 | 2,542 | 278 |
| 1969-70 | 11,393 | 450,.352 | 1,497 | 6,998 | 4,307 | 2,799 | 300 |
| 1980-81 | 8,726 | 391,801 | 5,032 | 23,856 | 14,814 | 9,440 | 712 |
| 1981-82 | 8,916 | 388,872 | 5,757 | 27,208 | 17,031 | 10,578 | 1,046 |
| 1982-83 | 8,392 | 349,679 | 5,950 | 27,747 | 17,060 | 10,649 | 998 |
| 1983-84 | 8,404 | 354,409 | 6,059 | 30,081 | 18,405 | 11,779 | 779 |
| 1984-85 | 8,499 | 357,989 | 6,551 | 33,436 | 20,782 | 13,154 | 1,035 |
| 1986-87 | 9,107 | 354,771 | 7,390 | 39,829 | 24,591 | 15,596 | n.a. |
| 1987-88 | 9,858 | 367,603 | 8,302 | 45,577 | n.a. | n.a. | n.a. |
| 1988-89 | 9,771 | 367,376 | 8,885 | 51,680 | n.a. | n.a. | n.a. |

[^0]TABLE 7.3 MANUFACTURING ES'IABLISIIMENTS ( $a$ ) BY INDUSTRY SUBDIVISION, VICTORIA, 1988-89

| ASIC code | Industry subdivision | stablishments operaling at 30 June | Employment (b) | Wages and salaries paid (c) | Turnover |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | number | '000 | \$m | \$m |
| 21 | Food, beverages, and tobacco | 1,136 | 52.4 | 1,193 | 9,767 |
| 23 | Textiles | 302 | 17.4 | 400 | 2,110 |
| 24 | Clothing and footwear | 1,059 | 38.2 | 712 | 2,742 |
| 25 | Wood, wood products, and furniture | 1,385 | 22.0 | 445 | 1,995 |
| 26 | Paper, paper products, printing, and publishing | 1,071 | 37.4 | 986 | 4,743 |
| 27 | Chemical, petroleum, and coal products | 309 | 19.0 | 586 | 4,387 |
| 28 | Non-metallic mineral products | 378 | 11.5 | 326 | 1,956 |
| 29 | Basic metal products | 214 | 13.0 | 389 | 3,922 |
| 31 | Fabricated metal products | 1,305 | 32.8 | 777 | 3,700 |
| 32 | Transport equipment | 451 | 52.3 | 1,310 | 7,514 |
| 33 | Other machinery and equipment | 1,271 | 45.3 | 1,142 | 5,542 |
| 34 | Miscellaneous manufacluring | 890 | 26.0 | 619 | 3,297 |
|  | Total | 9,771 | 367.3 | 8,885 | 51,675 |

(a) AU manufacturing establishments owned by multi-cstablishment enterprises and single establishment manufacturing enterprises with four or more persons employed.
(b) Al 30 June including working proprictors.
(c) Excludes drawings of working proprictors.

TABLE 7.4 MANUFACTURING ESTABLISHMENTS (a) BY INDUSTRY SUBDIVISION, PERCENTAGE OF AUSTRALIAN TOTALS, VICTORIA, 1988-89
(per cent)

| $\begin{aligned} & \text { ASIC } \\ & \text { code } \end{aligned}$ | Indusiry subdivision | Fistablishments operaling at 30 June | Employment (b) | Wages and salarie.s paid (c) | Turnover |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | Food, beverages, and tobacco | 30 | 30 | 30 | 32 |
| 23 | Textilcs | 42 | 54 | 56 | 52 |
| 24 | Clothing and footweir | 46 | 52 | 54 | 53 |
| 25 | Wood, wood products, and lurniture | 29 | 26 | 27 | 25 |
| 26 | Paper, paper products, printing, and publishing | + 31 | 33 | 34 | 35 |
| 27 | Chemical, petrolcum, and coal products | 33 | 36 | 37 | 32 |
| 28 | Non-metallic mineral products | 25 | 27 | 29 | 27 |
| 29 | Basic metal products | 36 | 18 | 17 | 20 |
| 31 | Fabricaled metal products | 27 | 30 | 32 | 31 |
| 32 | Transporl equipment | 28 | 45 | 46 | 51 |
| 33 | Other machincry and equipment | 31 | 33 | 34 | 36 |
| 34 | Miscellancous manufacturing | 34 | 39 | 41 | 40 |
|  | Total manulacturing | 31 | 34 | 35 | 34 |

[^1]
## MANUFACTURING ESTABLISHMENTS: SELECTED VARIABLES BY INDUSTR Y SUBDIVISION, PERCENTAGE OF AUSTRALIAN TOTALS, 1988-89



TABLE 7.5 MANUFACTURING ESTABLISHMENTS ( $a$ ), 1988-89

|  | $\begin{array}{r}\text { Establishments } \\ \text { operating at } \\ \text { 30 une }\end{array}$ | $\begin{array}{r}\text { Wages and } \\ \text { salaries } \\ \text { paid (c) }\end{array}$ |  |  |
| :--- | ---: | ---: | ---: | ---: | Turnover $\left.\begin{array}{l}\text { Employment (b) }\end{array}\right)$

[^2]TABLE 7.6 NUMBER OF MANUFACTURING ESTABLISHMENTS (a) IBY INDUSTRY SUBDIVISION VICTORIA

| $\begin{aligned} & \text { ASIC } \\ & \text { code } \end{aligned}$ | Indusiry sub-division | 1982-83 | 1983-84 | 1984-85 | 1986.87 | 1987-88 | 1988-89 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | Food, beverages, and lobacco | 966 | 991 | 1,003 | 1,102 | 1,242 | 1,136 |
| 23 | Textiles | 307 | 295 | 304 | 300 | 313 | 302 |
| 24 | Clothing and footwear | 943 | 932 | 955 | 1,030 | 1,089 | 1,059 |
| 25 | Wood, wood products, and furniture | 1,074 | 1,086 | 1,124 | 1,261 | 1,363 | 1,385 |
| 26 | Paper, paper products, printing, and publishing | 881 | 889 | 899 | 947 | 1,023 | 1,071 |
| 27 | Chemical, petroleum, and coal products | 289 | 288 | 278 | 284 | 301 | 309 |
| 28 | Non-metallic mineral products | 392 | 390 | 388 | 421 | 439 | 378 |
| 29 | Basic metal products | 191 | 177 | 175 | 203 | 202 | 214 |
| 31 | Fabricated metal products | 1,086 | 1,079 | 1,074 | 1,139 | 1,283 | 1,305 |
| 32 | Transport equipment | 374 | 381 | 383 | 403 | 421 | 451 |
| 33 | Other machinery and equipment | 1,159 | 1,162 | 1,173 | 1,189 | 1,317 | 1,271 |
| 34 | Miscellancous manufacturing | 730 | 734 | 743 | 828 | 865 | 890 |
|  | Total | 8,392 | 8,404 | 8,499 | 9,107 | 9,858 | 9,771 |

(a) See footnote to Table 7.2.

TABLE 7.7 MANUFACTURING ESTABLISHMENTS (a) CLASSIFIED ACCORDING TO NUMBER OF PERSONS EMPLOYED (INCLUDING WORKING PROPRIETORS), VICTORIA

| Manufacturing establishments employing persons nurnbering - | A 30 Inne 1988 |  | Al 30 June 1089 |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Number of extablishments | Number of persons employed | Number of cstablishments | Number of persons employed |
| Less than 10 | 4,656 | 56,361 | 6,818 | 56,791 |
| 10 to 19 | 2,202 |  | \} |  |
| 20 to 49 | 1,568 | 47,450 | 1,538 | 46,541 |
| 50 to 99 | 680 | 48,051 | 656 | 46,091 |
| 100 to 199 | 428 | 58,817 | 414 | 56,893 |
| 200 to 499 | 243 | 70,825 | 258 | 74,613 |
| 500 to 999 | 55 | 37,327 | 61 | 42,134 |
| 1,000 and over | 26 | 39,423 | 26 | 44,313 |
| Total | 9,858 | 358,254 | 9,771 | 367,376 |

[^3]TABLE 7.8 PERSONS EMPLOYED (a) IN MANUFACTURING ESTABLISHMENTS, BY INDUSTRY SUBDIVISION, VICTORIA

| ASIC code | Industry subdivision | 1982.83 | 1983-84 | 1984-85 | 1986-87 | 1987-88 | 1988.89 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | Food, beverages, and tobacco | 48,867 | 48,604 | 49,246 | 48,802 | 51,700 | 52,389 |
| 23 | Textiles | 17,150) | 17,794 | 18,009 | 19,129 | 19,420 | 17,417 |
| 24 | Clothing and footwear | 40,887 | 43,189 | 42,926 | 41,475 | 40,145 | 38,251 |
| 25 | Wood, wood products, and furniture | 17,743 | 18,520 | 19,466 | 21,215 | 21,952 | 22,037 |
| 26 | Paper, paper products, printing, and publishing | 33,335 | 34,106 | 34,201 | 35,221 | 36,078 | 37,453 |
| 27 | Chemical, petroleum, and coal products | 20,160 | 19,699 | 19,759 | 19,329 | 19,568 | 19,021 |
| 28 | Non-metallic mineral products | 10,802 | 10,472 | 10,280 | 10,625 | 11,001 | 11,491 |
| 29 | Basic metal products | 12,734 | 12,747 | 12,579 | 13,431 | 14,734 | 12,984 |
| 31 | Fabricated metal products | 30,612 | 30,163 | 29,789 | 30,445 | 32,930 | 32,787 |
| 32 | Transport equipment | 51,368 | 53,927 | 55,403 | 47,959 | 50,401 | 52,292 |
| 33 | Other machinery and equipment | 43,512 | 42,271 | 43,295 | 43,773 | 45,162 | 45,253 |
| 34 | Miscellancous manulacturing | 22,509 | 22,917 | 23,036 | 23,367 | 24,512 | 26,001 |
|  | Total | 349,679 | 354,409 | 357,989 | 354,771 | 367,603 | 367,376 |

(a) Employment at 30 June including working proprictors.

TABLE 7.9 MANUFACTURING ESTABLISHMENTS (a), TYPE OF EMPLOYMENT, VICTORIA

| At 30 June | Working <br> proprielars | Administrative, office, sales, <br> and distribution employces $(b)$ | Production and <br> all other employees $(b)$ | Total |  |
| :--- | ---: | ---: | ---: | ---: | ---: |
| 1982 | 3,475 | 98,178 | 287,219 | 388,872 |  |
| 1983 | 2,869 | 89,517 | 257,293 | 349,679 |  |
| 1984 | 2,906 | 88,879 | 262,624 | 354,409 |  |
| 1985 | 2,630 | 88,809 | 266,550 | 357,989 |  |
| 1987 | 1,954 | 98,059 | 354,758 | 354,771 |  |
| 1988 | 2,815 |  | 364,788 |  | 367,603 |
| 1989 | 2,484 |  | 364,892 | 367,376 |  |

(a) See footnote to Table 7.2.
(b) Scparate data is not available for 1987-88 and 1988-89.

TABLE 7.10 MANUFACTURING ESTABLISHMENTS ( $a$ ), TYPE OF EMPLOYMENT BY INDUSTRY SUBDIVISION, VIC'TORIA, AT 30 JUNE 1989

| ASIC | Industry subdivision | Working <br> proprietors | Employees (b) | Total |
| :--- | :--- | ---: | ---: | ---: |
| 21 | Food, beverages, and tobacco | 560 | 51,829 | 52,389 |
| 23 | Textiles | 40 | 17,377 | 17,417 |
| 24 | Clothing and footwear | 335 | 37,916 | 38,251 |
| 25 | Wood, wood products, and furniture | 445 | 21,592 | 22,037 |
| 26 | Paper, paper products, printing, and publishing | 209 | 37,244 | 37,453 |
| 27 | Chemical, petroleum, and coal products | 21 | 19,000 | 19,021 |
| 28 | Non-metallic mincral products | 71 | 11,420 | 11,491 |
| 29 | Basic metal products | 35 | 12,949 | 12,984 |
| 31 | Fabricated metal products | 300 | 32,487 | 32,787 |
| 32 | Transport cquipment | 96 | 52,196 | 52,292 |
| 33 | Other machinery and cquipment | 203 | 45,050 | 45,253 |
| 34 | Miscellancous manulacturing | 169 | 25,832 | 26,001 |
|  | Total | $\mathbf{2 , 4 8 4}$ | $\mathbf{3 6 4 , 8 9 2}$ | $\mathbf{3 6 7 , 3 6 7}$ |

(a) See footnote to Table 7.2.
(b) Sec footnote to Table 7.9.

TABLE 7.11 MANUFACTURING ESTABLISHMENTS ( $a$ ), TURNOVER (b) BY INDUSTRY SUBDIVISION, VICTORIA
(Sm)

| $\begin{aligned} & \text { ASIC } \\ & \text { code } \end{aligned}$ | Industry subdivision | 1982-83 | 1983-84 | 1984-85 | 1986-87 | 1987.88 | 1988.89 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | Food, beverages, and tobacco | 5,959 | 6,266 | 6,673 | 7,734 | 8,884 | 9,767 |
| 23 | Textilcs | 1,087 | 1,219 | 1,370 | 1,750 | 1,963 | 2,110 |
| 24 | Clothing and footwear | 1,717 | 1,926 | 2,(057 | 2,392 | 2,444 | 2,742 |
| 25 | Wood, wood products, and furniture | 1,014 | 1,115 | 1,292 | 1,587 | 1,798 | 1,995 |
| 26 | Paper, paper products, printing, and publishing | 2,262 | 2,499 | 2,833 | 3,612 | 4,097 | 4,743 |
| 27 | Chemical, petrolcum, and coal products | 2,451 | 2,668 | 2,876 | 3,400 | 3,837 | 4,387 |
| 28 | Non-metallic mineral products | 884 | 1,001 | 1,188 | 1,393 | 1,597 | 1,956 |
| 29 | Basic metal products | 1,721 | 2,116 | 2,397 | 3,082 | 3,460 | 3,922 |
| 31 | Fabricated metal products | 1,953 | 2,037 | 2,186 | 2,548 | 3,113 | 3,700 |
| 32 | Transport equipment | 4,014 | 4,269 | 5,159 | 5,624 | 6,762 | 7,514 |
| 33 | Other machinery and equipment | 2,987 | 3,055 | 3,325 | 4,253 | 4,809 | 5,542 |
| 34 | Miscellaneous manufacluring | 1,701 | 1,911 | 2,080 | 2,457 | 2,814 | 3,297 |
|  | Total | 27,747 | 30,081 | 33,436 | 39,829 | 45,577 | 51,675 |

(a) See footnote to Table 7.2.
(b) Turnover includes sales of goods whether proxiuced by an establishinent or not, transfers out of goods to other estabishments of the same enterprise, boumics and subsidies on produclion plus all other operating revenue from outside the enterprise.

TABLE 7.12 MANUFACTURING ESTABLISHMENTS (a), PURCHASES, TRANSFERS IN, AND SELECTED ITTEMS OF EXPENSE (b) BY INDUSTRY SUBDIVISION, VICTORIA
(Sin)

| ASIC code | Indussry subdivision | 1982-83 | 1983.84 | 1984-85 | 1986.87 | 1987.88 | 1988-89 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | Food, beverages, and tobacco | 4,145 | 4,198 | 4,495 | 5,112 | n.a. | n.a. |
| 23 | Textiles | 658 | 741 | 863 | 1,040 | n.a. | n.a. |
| 24 | Clothing and footwear | 894 | 1,030 | 1,115 | 1,294 | n.a. | n.a. |
| 25 | Wood, wood products, and furniture | 571 | 628 | 744 | 942 | n.a. | n.a. |
| 26 | Paper, paper products, printing, and publishing | 1,213 | 1,325 | 1,530 | 1,841 | n.a. | n.a. |
| 27 | Chemical, petrolcum, and coal products | 1,5]8 | 1,619 | 1,711 | 2,061 | n.a. | n.a. |
| 28 | Non-meuallic mineral products | 47() | 515 | 629 | 797 | n.a. | n.a. |
| 29 | Basic metal products | 1,258 | 1,592 | 1,885 | 2,339 | n.a. | n.a. |
| 31 | Fabricated metal products | 1,(076 | 1,137 | 1,234 | 1,444 | n.a. | n.a. |
| 32 | Transport equipment | 2,601 | 2,760 | 3,468 | 3,828 | n.a. | n.a. |
| 33 | Other machinery and equipment | 1,618 | 1,703 | 1,856 | 2,408 | n.a. | n.a. |
| 34 | Miscellancous manufacturing | 1,037 | 1,156 | 1,252 | 1,487 | n.a. | n.a. |
|  | Total | 17,060 | 18,405 | 20,782 | 24,591 | n.a. | n.a. |

[^4]TABLE 7.13 MANUFACTURING ESTABLISHMENTS ( $a$ ), STOCKS (b) BY INDUSTRY SUBDIVISION, VICTORIA
(Sm)

| $\begin{aligned} & \text { ASIC } \\ & \text { code } \end{aligned}$ | Industry subdivision | 1982-83 | 1983-84 | 1984-85 | 1986.87 | 1987-88 | 1988-89 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| OPENING STOCKS |  |  |  |  |  |  |  |
| 21 | Food, beverages, and tobaceo | 646 | 741 | 744 | 657 | n.a. | n.a. |
| 23 | Textiles | 204 | 192 | 212 | 270 | n.a. | n.a. |
| 24 | Clothing and footwear | 289 | 280 | 316 | 374 | n.a. | n.a. |
| 25 | Wood, wood products, and furniture | 140 | 136 | 151 | 201 | n.a. | n.a. |
| 26 | Paper, paper products, printing, and publishing | 291 | 285 | 291 | 358 | n.a. | n.a. |
| 27 | Chemical, petrolcum, and coal products | 404 | 420 | 452 | 610 | n.a. | n.a. |
| 28 | Non-metallic mineral products | 121 | 132 | 120 | 144 | n.a. | n.a. |
| 29 | Basic metal products | 293 | 258 | 273 | 307 | n.a. | n.a. |
| 31 | Fabricated metal products | 364 | 306 | 316 | 343 | n.a. | n.a. |
| 32 | Transport equipment | 674 | 709 | 660 | 885 | n.a. | n.a. |
| 33 | Other machinery and equipment | 781 | 720 | 682 | 979 | n.a. | n.a. |
| 34 | Miscellancous manufacturing | 274 | 266 | 269 | 290 | n.a. | n.a. |
|  | Total | 4,480 | 4,444 | 4,486 | 5,418 | n.a. | n.a. |
| CLOSING STOCKS |  |  |  |  |  |  |  |
| 21 | Food, beverages, and tobacco | 722 | 764 | 769 | 690 | n, a, | n.a. |
| 23 | Textiles | 195 | 211 | 242 | 310 | n.a. | n.a. |
| 24 | Clothing and footwear | 287 | 320 | 345 | 422 | n.a. | n.a. |
| 25 | Wood, wood products, and furniture | 140 | 155 | 174 | 231 | n.a. | n.a. |
| 26 | Paper, paper products, printing, and publishing | 291 | 286 | 343 | 380 | n.a. | n.a. |
| 27 | Chemical, perrolcum, and coal products | 425 | 463 | 471 | 652 | n.a. | n.a. |
| 28 | Non-metallic mineral products | 132 | 119 | 125 | 148 | n.a. | n.a. |
| 29 | Basic metal products | 275 | 268 | 311 | 334 | n.a. | n.a. |
| 31 | Fabricated metal products | 320 | 324 | 336 | 378 | n.a. | n.a. |
| 32 | Transport equipment | 665 | 677 | 780 | 960 | n.a. | n.a. |
| 33 | Other machinery and equipnent | 737 | 686 | 789 | 944 | n.a. | n.a. |
| 34 | Miscellancous manufacturing | 25.3 | 273 | 301 | 328 | n.a. | n.a. |
|  | Total | 4,442 | 4,546 | 4,986 | 5,777 | n.a. | n.a. |

(a) Sce footnote to Table 7.2.
(b) Figures include finished geods, work-in-progress and shocks of matcrials, fucls, ctc. Note that due to reporting differences on individual returns and variations in number of establishnents from year to year the closing stocks in one year may differ from the opening stocks in the following year.

TABLE 7.14 MANUFACTURING ESTABLISHMENTS (a), VALUE ADDED (b) BY INDUSTRY SUBDIVISION, VICTORIA
(Sm)

| ASIC code | Industry subdivision | 1982-83 | 1983-84 | 1984-85 | 1986.87 | 1987-88 | 1988-89 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 21 | Food, beverages, and tobaceo | 1,890) | 2,092 | 2,203 | 2,654 | n.a. | n.a. |
| 23 | Textiles | 420 | 497 | 538 | 749 | n.a. | n.a. |
| 24 | Clothing and footwear | 821 | 937 | 973 | 1,146 | n.a. | n.a. |
| 25 | Wood, wood products, and furniture | 443 | 505 | 572 | 675 | n.a. | n.a. |
| 26 | Paper, paper products, printing, and publishing | 1,049 | 1,174 | 1,354 | 1,792 | n.a. | n.a. |
| 27 | Chemical, petrolcum, and coal products | 953 | 1,093 | 1,184 | 1,380 | n.a. | n.a. |
| 28 | Non-metallic mineral products | 425 | 473 | 563 | 600 | n.a. | n.a. |
| 29 | Basic metal products | 445 | 534 | 549 | 769 | n.a. | п.a. |
| 31 | Fabricated metal products | 833 | 918 | 973 | 1,139 | n.a. | п.a. |
| 32 | Transport equipment | 1,403 | 1,476 | 1,811 | 1,871 | n.a. | n.a. |
| 33 | Other machinery and equipment | 1,324 | 1,319 | 1,575 | 1,811 | n.a. | n.a. |
| 34 | Miscellancous manufacturing | 643 | 761 | 859 | 1,008 | n.a. | n.a. |
|  | Total | 10,649 | 11,779 | 13,154 | 15,596 | n.a. | n.a. |

(a) Sce foomote to Table 7.2.
(b) Value added is calculated by adding to turnover the incerease (or deducting the decrease) in value of stock and deducting the value of purchases and selected items of experaditure.

TABLE 7.15 MANUFACTURING ESTABLISHMENTS (a) BY STATISTICAL DIVISION, VICTORIA, AT 30 JUNE 1988

| Statistical division | Establishments operaling at 30 . June | Eimployment at 30 June |  |  | Wages and salaries paid | Turnover |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Mates | Females | Persons |  |  |
|  | number | number | number | number | \$m | \$m |
| Mclbourne | 7,884 | 203,782 | 92,780 | 296562 | 7,246 | 40,887 |
| Barwon | 347 | 14,744 | 4,843 | 19,587 | 493 | 3,126 |
| South Western | 133 | 4,547 | 1,480 | 6,027 | 145 | 1,218 |
| Central Highlands | 219 | 5,960) | 2,220 | 8,180 | 192 | 899 |
| Wimmera | 67 | 886 | 531 | 1,417 | 25 | 135 |
| Northern Mallec | 108 | 1,182 | 386 | 1,568 | 30 | 249 |
| Loddon-Campaspe | 256 | 6,748 | 3,594 | 10,342 | 209 | 1,009 |
| Goulburn | 249 | 5,145 | 2,063 | 7,208 | 163 | 1,211 |
| North Eastern | 144 | 4,911 | 1,701 | 6,612 | 153 | 1,251 |
| East Gippsland | 105 | 1,592 | 540 | 2,132 | 39 | 263 |
| Central Gippsland | 191 | 4,397 | 1,539 | 5,936 | 151 | 1,112 |
| East Central | 68 | 1,268 | 537 | 1,805 | 38 | 315 |
| Total | 9,771 | 255,162 | 112,214 | 367,376 | 8,885 | 51,675 |

[^5]TABLE 7.16 NUMBER OF MANUFACTURING ESTABLISHMENTS (a) AND PERSONS EMPLOYED IN EACH STATISTICAL DIVISION,
CLASSIFIED ACCORDING TO INDUSTRY SUB-DIVISION, VICTORIA, 1988-89

| $\begin{aligned} & \text { ASIC } \\ & \text { code } \end{aligned}$ | Industry sub-division | Statistical division |  |  |  |  |  |  |  |  |  |  |  | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Melbourne | Barwon | South <br> Western | Ceniral llighlands | Wimumera | Northern <br> Mallec | Loddon- <br> Campaspe | Goulburn | North <br> Eastern | East <br> Gippsland | Central Gippsland |  |  |
| NUMBER OF MANUFACTURING ESTABLISHMENTS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | Food, beverages, and tobacco | 695 | 46 | 36 | 45 | 22 | 32 | 61 | 72 | 40 | 24 | 46 | 17 | 1,136 |
| 23 | Textiles | 243 | 20 | п.р. | 7 | n.p. | n.p. | 7 | 6 | n.p. | n.p. | 5 | n.p. | 302 |
| 24 | Clothing and footwear | 963 | 30 | 5 | 9 | n.p. | n.p. | 15 | 13 | n.p. | n.p. | 10 | n.p. | 1,059 |
| 25 | Wood, wood products, and fumiture | 1,060 | 63 | 22 | 34 | 11 | 13 | 25 | 42 | 24 | 38 | 33 | 20 | 1,385 |
| 26 | Paper, paper products, printing, and publishing | 90.4 | 23 | 12 | 12 | 7 | 14 | 31 | 25 | 13 | 9 | 15 | 6 | 1,071 |
| 27 | Chemical, petrolcum, and coal products | 269 | 17 | n.p. | n.p. | - | n.p | 5 |  | n.p. | - |  | n.p. | 309 |
| 28 | Non-metallic mineral products | 210 | 23 | 10 | 22 | 6 | 12 | 28 | 21 | 12 | 8 | 20 | 6 | 378 |
| 29 | Basic metal products | 165 | 14 | n.p. | 7 | n.p. | n.p. | 8 | n.p. | n.p. | n.p. | n.p. | - | 214 |
| 31 | Fabricated metal products | 1,106 | 46 | 10 | 25 | 4 | 5 | 30 | 21 | 31 | 9 | 30 | n.p.. | 1,305 |
| 32 | Transpor equipment | 374 | 14 | 7 | 12 | - | 7 | 11 | 13 | n.p. | n.p. | 6 | n.p. | 451 |
| 33 | Oher mathinery and equipment | 1,100 | 25 | 10 | 28 | 5 | 13 | 22 | 22 | 20 | 7 | 15 | 4 | 1,271 |
| 34 | Miscellaneous manufacuring | 794 | 26 | 8 | 15 | 5 | 5 | 13 | 8 | 7 | n.p. | 5 | n.p. | 890 |
|  | Total | 7,884 | 347 | 133 | 219 | 67 | 108 | 256 | 243 | 144 | 105 | 191 | ${ }_{68}$ | 9,771 |
| NUMBER OF PERSONS EMPLOYED |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 | Food, bevcrages, and tobacco | 31,906 | 1,525 | 2,348 | 2,148 | 492 | 725 | 2,816 | 3,982 | 3,084 | 766 | 1,668 | 929 | 52,389 |
| 23 | Tcxuiles | 12,100 | 1,866 | n.p. | 315 | n.p. | n.p. | 654 | 278 | n.p. | n.p. | 282 | n.p. | 17,417 |
| 24 | Clothing and footwear | 31,095 | 2,316 | 716 | 472 | n.p. | n.p. | 1,874 | 519 | n.p. | n.p. | 566 | n.p. | 38,521 |
| 25 | Wood, wood producs, and fumiture | 16,976 | 795 | 510 | 935 | 114 | 94 | 310 | 560 | 310 | 775 | 469 | 189 | 22,037 |
| 26 | Paper, paper products, printing, and publishing | 32,151 | 781 | 268 | 313 | 97 | 223 | 639 | 508 | 501 | 175 | 1,675 | 138 | 37,453 |
| 27 | Chemical, petroleum, and coal products | 16,873 | 1,637 | n.p. | n.p. | - | n.p. | 32 | n.p. | n.p. | - | n.p. | n.p. | 19,021 |
| 28 | Non-metallic mineral products | 8,448 | 1,310 | 61 | 537 | 45 | 52 | 363 | 170 | 184 | 62 | 213 | 13 | 11,491 |
| 29 | Basic metal producis | 8,626 | 2,488 | n.p. | 450 | n.p. | n.p. | 226 | n.p. | n.p. | n.p. | 80 | - | 12,984 |
| 31 | Fabricated metal products | 28,707 | 463 | 214 | 395 | 40 | 49 | 906 | 354 | 310 | 76 | 575 | 198 | 32,787 |
| 32 | Transport equipment | 44,382 | 4,950 | 68 | 1,341 | - | 126 | 1,105 | 217 | n.p. | n.p. | 49 | n.p. | 52,292 |
| 33 | Other machinery and equipruent | 40,835 | 752 | 366 | 1,106 | 96 | 183 | 823 | 464 | 421 | 40 | 126 | 650 | 45,253 |
| 34 | Miscellaneous manufacluring | 24,299 | 204 | 177 | 131 | 86 | 34 | 594 | 71 | 126 | n.p. | 127 | n.p. | 26.001 |
|  | Total | 296,562 | 19,587 | 6,027 | 8,180 | 1,417 | 1,568 | 10,342 | 7,208 | 6,612 | 2,132 | 5,936 | 1,805 | 367,376 |

[^6]TABLE 7.17 SELECTED ARTICLES MANUFACTURED, 1989-90

|  |  |  |  | Victoria as a <br> percentage |
| :--- | ---: | ---: | ---: | ---: |
| Article | Unil | Victoria | Australia | of Australia |

## Exports

Between 1986-87 and 1988-89, the value of Victorian manufactured goods exported increased by 22.5 per cent at market prices. Victoria's contribution to the Australian total also increased during this period, from 23.5 per cent to 28.1 per cent.

Basic metal products showed a significant increase in exports of 93.8 per eent during the period under revicw. Its share of total manufacturing exports also increased, from 16.7 per cent to 26.4 per cent.

Other sub-divisions to show a significant increase for Victoria during the period 1986-87 to 1988-89 were Miscellancous manufacturing ( 88.4 per cent) and Clothing and footwear ( 66.5 per cent).

Food, beverages and tobaceo retained its place as the largest export earner for Victoria, despite the fact that it increased by only 1.7 per cent over the two ycar period. Two of the twelve ASIC sub-divisions registered a decrease in cxports between 1986-87 and 1988-89. Wood, wood products, and furniture fell by 28.7 per cent, whilst Transport equipment decreased by 17.2 per cent.

EXPORTS OF TABLE 7.18 FOREIGN TRADE OF MANUFACTURED GOODS: EXPORTS OF MANUFACTURED GOODS BY INDUSTRY SUB-DIVISION, VICTORIA

| ASIC Sub-division | 1986-87 |  | 1987-88 |  | 1988.89 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Sin | \% | Sm | \% | \$m | \% |
| Food, beverages and tobacco | 1,534.1 | 34.4 | 1,646.0 | 29.5 | 1,560.3 | 28.5 |
| Textiles | 433.1 | 9.7 | 581.7 | 10.4 | 512.6 | 9.4 |
| Clothing and footwear | 19.7 | 0.4 | 27.5 | 0.5 | 32.8 | 0.6 |
| Wood, wood products, and furniture | 20.2 | 0.5 | 18.1 | 0.3 | 14.4 | 0.3 |
| Paper, paper products, printing and publishing | 73.5 | 1.6 | 76.5 | 1.4 | 81.6 | 1.5 |
| Chemical, petrolcum and coal products | 447.2 | 10.0 | 539.8 | 9.6 | 534.9 | 9.8 |
| Non-metallie mineral products | 33.7 | 0.8 | 37.6 | 0.7 | 34.3 | 0.6 |
| Basic metal products | 745.7 | 16.7 | 1,276.7 | 22.8 | 1,445.5 | 26.4 |
| Fabricated metal products | 82.7 | 1.9 | 104.6 | 1.9 | 123.8 | 2.3 |
| Transport equipment | 501.7 | 11.2 | 603.8 | 10.8 | 415.6 | 7.6 |
| Other machinery and equipment | 496.7 | 11.1 | 559.0 | 9.9 | 568.9 | 10.4 |
| Miscellancous manufacturing | 75.2 | 1.7 | 125.6 | 2.2 | 141.7 | 2.6 |
| Total Victoria (a) | 4,463.5 | 100.0 | 5,596.9 | 100.0 | 5,466.4 | 100.0 |
| Total Australia (a) | 18,961.8 | 100.0 | 22,713.8 | 100.0 | 19,458.0 | 100.0 |

(a) In some cases, division aggregates slighty exceed sums of sub-divisions due to unclassified confidential items.

## MINING

In 1988-89 the Victorian mining industry contributed 18.8 per cent of the Australian mining component of Gross Domestic Product (GDP) at factor cost. The mining industry represented 2.9 per cent of Victoria's GDP at factor cost in 1988-89.

The term 'mining' as used in GDP at factor cost estimates includes the extraction of minerals occurring naturally as solids, such as coals and ores, liquids such as crude petroleum, and gases such as natural gas.

## Oil and gas production

In 1988-89, the Gippsland Basin produced 63 per cent of Australia's crude oil and 34 per cent of its natural gas.

## Brown coal

The majority of Australia's measured resources of brown coal is located in Victoria's Latrobe Valley, with 52,000 Megatonnes which is considered economically viable. Brown coal is by far Victoria's most valuable solid mineral commodity, with production in 1987-88 valued at $\$ 320.2 \mathrm{~m}$.

Gold

Victoria's production of gold bullion increased rapidly in recent years. Only 41 kilograms were produced during 1979-80, rising to 150 kilograms in 1983-84. Victorian gold production increased dramatically from this low base, largely as a result of the Wonga open cut mine at Stawell coming on stream. By 1987-88, Victorian production was 1,634 kilograms and was valued at $\$ 32.9 \mathrm{~m}$.

TABLE 7.19 MINING ACTIVITY (a), VICTORIA

| Year | Establishments at 30 June | Eimployment (b) | Wages and salaries (c) | Turnover | Stocks |  | Purchases, transfers in and selecled expenses | Value added (d) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  | Opening | Ciosing |  |  |
|  | number | number | Sin | \$m | \$m | \$m | \$m | \$m |
| 1983-84 | 230 | 5,663 | 152.5 | 2,533.9 | 61.6 | 59.7 | 281.3 | 2,250.7 |
| 1984-85 | 221 | 5,737 | 160.3 | 3,104.9 | 65.9 | 62.6 | 281.9 | 2,819.7 |
| 1985-86 | 207 | 5,567 | 171.7 | 3,384.0 | 61.1 | 70.3 | 323.5 | 3,069.7 |
| 1986-87 | 208 | 5,783 | 182.1 | 2,525.6 | 65.9 | 72.3 | 293.0 | 2,239.0 |
| 1987-88 | 208 | 5,901 | 204.9 | 2,923.5 | 75.2 | 85.2 | 327.9 | 2,605.5 |
| 1988-89 (e) | 12 | 1,507 | 73.3 | 1,616.1 | 46.1 | 49.5 | 140.1 | 1,479.3 |

(a) ASIC Subdivisions not available for scparate publication.
(b)(c)(d) Sec footnotes 10 Table 7.2.
(e) The 1988-89 (truncated) consus differs from previous mining censuses in that the construction materials and other nonmetallic mincrals industries have been excluded.

## TABLE 7.20 ROYALTIES FROM OHL AND GAS PRODUCTION, VICTORIA

(Sm)

| Year | Amount <br> received | Amount paid 10 <br> Commonwealh | Amount retained <br> by Victoria |
| :--- | :---: | ---: | ---: |
| $1983-84$ | 257.9 | 84.2 | 173.7 |
| $1984-85$ | 293.9 | 96.5 | 197.5 |
| $1985-86$ | 302.2 | 99.4 | 202.8 |
| $1986-87$ | 218.7 | 71.4 | 147.2 |
| $1987-88$ | 213.9 | 69.8 | 144.1 |
| $1988-89$ | 139.5 | 46.0 | 93.5 |

Source: Depanment of Manufacturing and Industry Development, Victoria: Annual Report.

TABLE 7.21 CRUDE OHL PRODUCTION (a), VICTORIA

| Year | Barrels (000) |  | Megalires |  |
| :---: | :---: | :---: | :---: | :---: |
|  | During year | Average barrels per day | During year | Average megalitres per day |
| 1984 | 159,395 | 436 | 25,342 | 69.4 |
| 1985 | 177,776 | 487 | 28,264 | 77.4 |
| 1986 | 145,350 | 398 | 23,109 | 63.3 |
| 1987 | 151,571 | 415 | 24,098 | 66.0 |
| 1988 | 133,194 | 364 | 21,176 | 57.9 |
| 1989 | 113,383 | 311 | 18,027 | 49.4 |

(a) After processing.

Source: Australian Institute of Petroleum: Oil and Alesiralia

TABLE 7.22 ESTIMATED HYDROCARBON RESERVES, VICTORIA
(million cu. metres)

| Item | (million cu. metres) |  |  |
| :--- | :---: | :---: | ---: |
| Crude oil | 1987 | 1988 | 1989 |
| Natural gas | 161 | 163 | 148 |
| Condensate | 159 | 161 | 167 |
| LPG | 22 | 21 | 23 |

[^7]TABLE 7.23 MINERAL PRODUCTION, VICTORIA

| Mineral | Unit | 1984-85 | 1985-86 | 1986.87 | 1987-88 | 1988.89 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Brown coal | kilotonnes | 38,501 | 36,319 | 41,799 | ז44,288 | 48,663 |
| Metallic mincrals - |  |  |  |  |  |  |
| Bauxite | tonnes | 4,409 | 4,584 | 7,882 | 7,345 | 6,211 |
| Gold bullion (a) | kilograms | 902 | 1,272 | 1,179 | r1,716 | 2,511 |
| Non-metallic mincrals - |  |  |  |  |  |  |
| Diatomite (b) | lonnes | 776 | - | - | r8,000 | 2,137 |
| Gypsum | kilotonnes | 247 | 139 | 187 | r203 | 241 |
| Kaolin (b) | kilotonnes | 89 | 36 | 41 | r101 | 53 |

(a) Gold bullion is not yet refined and may contain small amounts of other metals such as silver.
(b) Refined and unrefined

Source: Department of Manufacturing and Industry Development, Victoria: Annual Report.

TABLE 7.24 MINERAL, PRODUCTION AND VALUE,VICTORIA, 1988-89

| Mineral | Unil | Production | Value <br> $(000)$ |
| :--- | ---: | ---: | ---: |
| Bauxite | lonnes | 6,211 | 102 |
| Brown coal | kilotonnes | 48,663 | 357,774 |
| Gold | kilograms | 2,511 | 33,435 |
| Gypsum | kilotonnes | 241 | 2,276 |
| Kaolin | kilotonnes | 117 | 13,402 |
| Total |  |  | 406,989 |

Source: Deparment of Industry, Victoria: Annual Report.

TABLE 7.25 STONE PRODUCTION, VICTORIA, 1988-89

| Ifem | Establishments operating | Total Victorian production |  |
| :---: | :---: | :---: | :---: |
|  | Number | Production | Value |
|  |  | 000 tonnes | \$'000 |
| Clays - |  |  |  |
| Brick clay and shale | 10 | 1,751 | 5,927 |
| Fireclay | 2 | 5 | 47 |
| White and other clays | 12 | 144 | 1,282 |
| Total clays | 24 | 1,991 | 7,256 |
| Crushed and broken stone - |  |  |  |
| Basalt | 51 | 13,794 | 144,131 |
| Dacite, rhyolite, and rhyodacite | 3 | 1,967 | 29,073 |
| Granite | 16 | 2,602 | 27,169 |
| Hornfels | 5 | 1,182 | 16,916 |
| Limestonc | 10 | 1,007 | 4,756 |
| Sandstone, quartzite | 24 | 1,884 | 10,728 |
| Shale and schist, other | 4 | 327 | 999 |
| Total crushed and broken stone | $1 / 3$ | 22,763 | 233,772 |

TABLE 7.25 STONE PRODUCTION, VICTORIA, 1988-89 - continued

| $\underline{\text { nem }}$ | Establishments operating | Total Victorian production |  |
| :---: | :---: | :---: | :---: |
|  | Nurnber | Production | Value |
|  |  | 000 tonnes | \$ 000 |


| Dimension stone - |  |  |  |
| :---: | :---: | :---: | :---: |
| Basalt, granite, sandstone and other | 8 | 17 | 608 |
| Earth and soil | 20 | 455 | 2,564 |
| Gravel | 58 | 3,753 | 13,941 |
| Limestone - |  |  |  |
| For agriculture | 15 | 139 | 3,690 |
| For cement | 3 | 2,438 | 14,079 |
| For other purposes | 4 | 70 | 5,414 |
| Total limestone | 22 | 2,684 | 23,183 |
| Salamander and filling | 23 | 720 | 4,605 |
| Sand | 126 | 7,339 | 60,855 |
| Scoria | 20 | 1,024 | 8,445 |
| Tuff | 6 | 206 | 769 |
| Grand total | 420 | 40,952 | 355,998 |

Source: Deparment of Manufacturing and Industry Development, Victoria: Annual Report.

## ENERGY

## Overview

In 1988-89, Victoria contributed 30.8 per cent of the Electricity, gas, and water component of Australia's Gross Domestic Product (GDP) at factor cost. The Electricity, gas, and water industries represented 4.0 per cent of Victoria's GDP at factor cost in 1988-89.
The Electricity, gas, and water component of GDP includes the transmission and distribution of gas through reticulation systems. It does not include the extraction of crude petroleum or natural gas.

## Electricity generated

The State Electricity Commission of Victoria (SEC) is Australia's largest electricity supply authority and individual coal producer. It is a semi-government authority with the principal responsibility of generating or purchasing electricity for supply throughout Victoria.
At 30 June 1989, it distributed electricity directly to $1,555,000$ customers and indirectly to a further 286,500 through 11 metropolitan councils which buy power in bulk for retail distribution under franchises granted by Victorian Government before the SEC's establishment.
Victorian production of electricity in 1989-90 was $37,804 \mathrm{GWh}$, a rise of 4.6 per cent over the 1988-89 figure. Victoria's electricity system is based upon the State's extensive brown coal resource in the LaTrobe Valley in Central Gippsland, which is one of the largest single brown coal deposits in the world, amounting to 200,000 megatonnes, of which 52,000 are presently economically recoverable.

All the major brown coal fired generating plants in the system are located in the LaTrobe Valley. These plants generate three-quarters of the State's electricity requirement.

Other thermal stations include a gas turbine station in the LaTrobe Valley and a gas fired station in Melbourne. There are hydro-electric power stations in north-castern Victoria, and the State is also entilled to about 30 per cent of the output of the Snowy Mountains hydro-electric scheme and half of the output of the Hume hydro-clectric station near Albury.

Main transmission is by $500,330,220$ and 66 kv lines which supply the principal sub-transmission centres and interconnection between generating sources.

## Gas reticulation

The Gas and Fucl Corporation of Victoria is the largest gas underlaking in Australia, the sole reticulator of gas in Victoria, and a major marketer of liguefied petroleum gas (LPG).
Commercial rescrves of natural gas were discovered in the off-shore Gippsland Basin in 1965 by EssoBHP from which the Corporation purchases, under agreement, the State's natural gas requirements.

Supply is drawn from the Marlin, Barracouta, and Snapper fields in Bass Strait, and transported by pipeline to an onshore treatment plant at Longford, near Sale.

The Corporation reticulates gas, 99 per cent of which is natural gas, through a 20,000 kilometre network of underground transmission pipelines and mains to more than one million industrial, commercial, and domestic consumers.

## Petroleum marketed

Motor spirit (super, standard and unleakled) marketed in Victoria during 1989-90 amounted to 4,817 megalitres. This represented a 0.9 per cent rise over the 1988-89 figure.

TABLE 7.26 POWER STATIONS: LOCATIONS, RATING, AND PRODUCTION, VICTORIA

| Station | Maximum output achieved (MW) |  | Electricity generated (GWh) |  |
| :---: | :---: | :---: | :---: | :---: |
|  | 1988-89 | 1989.90 | 1988-89 | 1989-90 |
| Brown coal thermal stations - |  |  |  |  |
| Hazelwood | 1,320 | 1,30) | 8,397 | 6,995 |
| Yallourn | 103 | - | 27 | - |
| Yallourn W | 1,485 | 1,476 | 8,570 | 8,463 |
| Morwell | 140 | 112 | 835 | 531 |
| Loy Yang A | 2,066 | 2,093 | 13,616 | 14,920 |
| Total | .. | . | 31,445 | 30,909 |
| Other thermal stations - |  |  |  |  |
| Newport D | 507 | 506 | 1,606 | 3,122 |
| Jecralang | 492 | 473 | 559 | 928 |
| Total | .. | . | 2,165 | 4,050 |
| Hydro stations - |  |  |  |  |
| Kicwa | 192 | 250 | 413 | 332 |
| Eildon-Rubicon (incl, Cairn-Cuman) | 136 | 149 | 203 | 354 |
| Dartmouth | 150 | 176 | 72 | 117 |
| Total | . | . | 688 | 803 |
| Stations operated by other bodies | 1,261 | 1,473 | 1,841 | 2,042 |
| Total input to system | .. | - | 36,139 | 37,804 |

[^8]TABLE 7.27 REFINING CAPACITY, VICTORIA, AT 1 JULY 1990

| Refinery | Location in Victoria and year refinery came on stream | Primary processing capacily (a) |
| :---: | :---: | :---: |
| Shell Refining (Australia) | Corio near Geclong 1954 | 110,000 to 132,000 BSD |
| Pty Lid |  | (5,000,000 Lonnes/ycar) |
| Shell Lubricating oil plant | Corio near Geclong 1954 | 3,000 BSD |
|  |  | (145,000 tonnes/year) |
| Petrolcum Relincrics | Altona near Melbourne 1949 | 108,000 BSD |
| (Australia) Ply Lid |  | (5,000,000 ionnes/year) |

(a) BSD: barrels per stream day.
Source: Australian Institutc of Petroleum I.d: Oil and Australia.

TABLE 7.28 PRINCIPAL PETROLEUM PRODUCTS MARKETED, VICTORIA
(megalitics)

| Ifem | 1987.88 | 1988.89 | $1989-90$ |
| :--- | ---: | ---: | ---: |
| Aviation gasoline | 18.80 | 19.40 | 21 |
| Motor spirit - |  |  |  |
| $\quad$ Super | $3,994.29$ | $3,779.38$ | 3,517 |
| Unleaded | 668.22 | 973.85 | 1,301 |
| Total | $4,662.51$ | $4,773.23$ | 4,817 |
|  |  |  |  |
| Aviation turbine fucl | 556.66 | 549.04 | 541 |
| Heating oil | 39.06 | 35.35 | 32 |
| Automotive distillate | $1,533.84$ | 1704.86 | 1,762 |
| Industrial diescl fucl | 104.44 | 106.25 | 81 |
| Fuel oil | 358.92 | 366.68 | 373 |
| Grand total $(a)$ | $7,274.23$ | $7,568.20$ | 7,606 |

[^9]
## REFERENCES

## Data sources

The latest year for which ABS estimates ate available for gross product at factor cost is 1988-89. However, State details are restricted becaluse G.D.P. by industry excludes the general government gross operating surplus component.

Major sources of manulacuring data are the Censuses of Manufacturing Establishments which have been conducted in Vietoria since 1901, and the monthly surveys of selected manulacturing production. No Manufacturing Census was conducted for the year 1985-86.

Manulacturing statistics collected simee 1908-69 are classilied by industry according to Division C of the Australian Standard Indusurial Classilication (ASIC). Division C broadly relates to the physical or chemical transformation of materials or components into new products, whether the work is performed by power driven machines or by hand.

## ABS publications

Census of Manufacturing Establishmems: Sumnary of Operations by Industry Subdivision, Australia, Preliminary (8201.0)
Manufacturing Establishments: Summary of Operalions by Industry Class, Australia (8202.0)
Manufacturing Establishments: Selected Itcms of Data by Industry and Employment Size. Vicloria (8202.2)

Manufacturing Establishments: Details of Operations by Industry Class, Australia (8203.0)
Manifacturing Establishments: Sinall Area Statistics, Victoria (8203.2)
Manufacturing, Victoria 1968-69 to 1987-88, Economic: Statistics Reporl (8206.2)
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Production Bulletins (8357.0-8368.0)
Manufacturing, Victoria (8207.2)

## Non-ABS publications

Deparlment of the Treasury, Victoria, estimates of State Accounts compiled by the Policy and Statistics Division.


[^0]:    (a) All manufacuring establishments in operation at 30 June, owned by multi-establishment enterprises and single establishment enterprises with four or more persons employed. Note that the 1968-69 and 1969-70 figures include establishments with fewer than four employecs.
    (b) As at 30 Junc including working proprietors.
    (c) Excludes drawings of working proprietors.
    (d) Value added is calculated by adding to turnover the increase (or deducting the decrease) in value of stock and deducting the value of purchases and selected tiems of expense.
    Note: There was no manulacturing eensus condueted in respect of 1985-86.

[^1]:    (a) All manufacturing establishments in operation at 30 June, owned by muti-establishoment enterprises and sungle establishment. enterprises with four or more persons employed.
    (b) As at 30 June including working proprictors.
    (c) Excludes drawings of working propriciors.

[^2]:    (a) All manufactaring establishments in operation at 30 June, owned by multi-establishment enterprises and single establishment enterprises with four or more persons employed.
    (b) As at 30 June including working proprietors.
    (c) Excludes drawings of working proprietors.

[^3]:    (a) Al manufacturing establishments owned by multi-cstablishment enterprises and single establishment manufacturing enterprises with four or more persons employed. In addition, there were 3,148 single establishment enterprises employing 6,933 persons in the one to three persons employed group for 1988-89.

[^4]:    (a) Sec footnote to Table 7.2.
    (b) Includes purchases of materials, fuel, power, contancers, elc., and goods for resale, plus transfers in of goods from other establishments of the enterprise, plus charges for commission and sub-contract work, repair and maintenance expenses, outward freight and carage, motor vehicle nming expenses, sales commission payments, rent, leasing, and hiring expenses.

[^5]:    (a) Scc foulnote to Table 7.2.

[^6]:    (a) See footnote to Table 7.2.

[^7]:    Source: Deparment of Manufacturing and Indusiry Devclopment, Victoria: Annual Report.

[^8]:    Source: Slate Electricity Commission of Victoria: Annual Report.

[^9]:    (a) Other petroleum lucls inctuding refinery oit are no longer inchuded as principat peroleum products marketed.

    Source: Australian Bureau of Agricultural and Resource licononncs: Quarterly Mineral Siaistics

