

# POWER POINTS 1975



Facts about the **SEC**

# State Electricity Commission of Victoria

The SEC is one of Australia's largest public corporations. It owns some \$1640 million worth of capital assets; its annual revenue totals \$300 million and it employs over 18 000 people.

★ ★ ★

The Commission is the largest electricity supply authority in Australia, and Australia's largest individual coal producer. Its system of power stations generates virtually all Victoria's requirements of electricity.

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To meet the rapid increase in Victoria's requirements for electricity the Commission will need to spend over \$1600 million on new capital works in the next 10 years. More than one-third of this amount will be spent on capital works in the Latrobe Valley.

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## POWER PRODUCTION

Electricity production for the State system has almost doubled in the past ten years. It is now some 16 000 gigawatt hours a year.

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Generating capacity available to the Victorian electricity supply system from all sources exceeds 4400 megawatts. Generating capacity 20 years ago was only 825 megawatts.

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Total available generating capacity includes Victoria's entitlement to one-third of the output of the Snowy hydro-electric scheme. This entitlement is now 1059 megawatts.

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Hazelwood, Yallourn, Yallourn W (partly completed) and Morwell power stations, in the Latrobe Valley, about 150 km east of Melbourne, burning brown coal from the nearby open cuts, generate 85 per cent of the State's electricity needs.

The balance is largely supplied by hydro-electric stations in the Kiewa and Snowy schemes, and at Eildon and Hume reservoirs.

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Victoria and New South Wales also have a power interchange agreement based on the operation of the most economical plant at any time in the two States.

## ELECTRICITY SUPPLY

Throughout Victoria there are over 1 402 000 electricity customers. The SEC supplies over 1 146 000 directly and the other 256 000 through 11 metropolitan councils buying power in bulk for retail distribution.

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SEC electricity provides about 80 per cent of the motive power in Victorian factories. Industrial consumption has nearly doubled in the past 10 years. Use of electricity by the average domestic customer has increased nearly 50% in this period.

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Victorian electricity consumption per head of population is now 3651 kWh a year compared with 2253 kWh in 1964.

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The Commission's tariffs are uniform throughout the State. Customers in the same class — domestic, commercial or industrial — pay the same charges in urban and rural areas.

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The SEC network comprises almost 105 000 km of power lines. Each average working day 7 km of lines are built, a power pole goes up about every eleven minutes, and a new transformer is installed every hour.

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Throughout Victoria about 150 additional customers are connected to the State supply system every working day — an average of about one every three minutes.

## FUEL PRODUCTION

Brown coal production in the Commission's open cuts at Yallourn, Morwell and Yallourn North is about 25 megatonnes a year.

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The whole output is used for electricity generation and briquette manufacture — except Yallourn North's yearly production (307 kilotonnes in 1973/74) which is sold to nearby industries.

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Morwell and Yallourn open cuts have 11 huge dredgers for removing overburden and winning coal. The largest machines are each able to average 1800 tonnes of coal an hour.

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Yallourn open cut produces more than 10 megatonnes of coal a year for power generation at Yallourn and for processing into briquettes. There will be a large increase in output from the Yallourn open cut with the introduction of each unit of the Yallourn W power station now being built.

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Morwell open cut supplies more than 14 megatonnes of fuel a year for the Hazelwood and Morwell power stations.

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Industrial and domestic users of briquettes buy almost one thousand kilotonnes a year and the Commission uses about 200 kilotonnes for power generation.

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## FUTURE DEVELOPMENT

Brown coal will continue to be the chief source of Victoria's base load energy for many years. Natural gas and oil are suitable alternatives for new peak load stations.

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Two brown coal power stations — the existing 1600 megawatt Hazelwood station, and Yallourn W now being constructed — will have a total capacity of 3050 megawatts by 1980.

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The first 350 megawatt unit at Yallourn W is in operation and the second unit is expected to be in service in 1975. The third and fourth units are scheduled for service during 1979 and 1980 respectively.

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Site works have begun at Newport for a natural gas-fired power station designed primarily to meet intermediate load requirements. The two 500 megawatt units are expected to be in service for the winters of 1978 and 1979 respectively.

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Peak load requirements will continue to be met by power from the Snowy scheme and the State's own hydro-electric power stations.

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A 150 megawatt hydro station associated with the new Dartmouth dam project is planned to be in service during 1979.

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## FINANCE

The SEC is entirely self-supporting. From its own income it meets all operating costs, interest payments on the capital invested in its State-wide undertaking, depreciation and other finance charges and special provisions.

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Of the Commission's total annual income of \$300 million, electricity sales contribute \$290 million and briquette and brown coal sales \$10 million.

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To finance essential new capital works over the next three years the Commission estimates it will require over \$300 million.

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A large part of the Commission's capital has been provided by public investment in Commission loans. Subscriptions total more than \$284 million, and there are 47 000 stockholders.

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New investments in Commission loans during 1973/74 were \$56 million and \$18 million of maturing securities were converted.

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Payments to State and municipal funds exceeded \$18 million, including \$12 million for statutory transfers to the Consolidated Fund of Victoria. Salaries, wages and employees' benefits (including \$32 million for capital works) totalled over \$150 million.

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## STATISTICAL SUMMARY

(Year ended June 30th, 1974)

### CUSTOMERS (000s)

|                                       |        | Ten Year<br>Percentage<br>Increase |
|---------------------------------------|--------|------------------------------------|
| <b>S.E.C. Retail</b>                  |        |                                    |
| Domestic .....                        | 963.6  | 43                                 |
| Commercial .....                      | 95.1   | 24                                 |
| Industrial .....                      | 87.2   | 61                                 |
| Traction and public<br>lighting ..... | 0.3    | 18                                 |
|                                       | <hr/>  |                                    |
|                                       | 1146.2 | 43                                 |

### S.E.C. Bulk Supply

|                          |        |    |
|--------------------------|--------|----|
| Domestic .....           | 223.0  | 30 |
| Commercial .....         | 30.1   | 16 |
| Industrial .....         | 3.1    | —5 |
| Public lighting traction | 0.1    | 57 |
|                          | <hr/>  |    |
|                          | 256.3  | 27 |
| <b>TOTAL S.E.C.</b>      | <hr/>  |    |
|                          | 1402.5 | 39 |

### OTHER

|  |        |    |
|--|--------|----|
| Monaro County Council<br>(N.S.W.)<br>serving Bendoc and Bon-<br>ang. | 0.2    | —  |
| <b>TOTAL — VICTORIA</b>  | 1402.7 | 38 |

### CLASSES OF CUSTOMERS (000s)

(All Supply Authorities)

|                                       |        |    |
|---------------------------------------|--------|----|
| Domestic .....                        | 1186.7 | 39 |
| Commercial .....                      | 125.3  | 20 |
| Industrial .....                      | 90.3   | 57 |
| Traction and<br>public lighting ..... | 0.4    | 16 |

## FARMS ON SUPPLY

Ten Year  
Percentage  
Increase

• **TOTAL — VICTORIA** 74 600 32

### ELECTRICITY SALES

|  |           |    |
|--|-----------|----|
| Per head of population                     | kWh 3 651 | 62 |
| Per domestic customer<br>(SEC Retail only) | kWh 4 472 | 47 |

### SOURCES OF POWER

(Installed Capacity — as at June 30th, 1974)

#### STATE SYSTEM

##### Thermal

|                      |          |     |
|----------------------|----------|-----|
| Latrobe Valley ..... | MW 2 666 | 228 |
| Other .....          | MW 342   | —35 |

##### Hydro

|   |          |     |
|---|----------|-----|
| Within Victoria (Kiewa,<br>Eildon-Rubicon, Cairn<br>Curran) ..... | MW 318   | —5  |
| Interstate entitlements<br>(Snowy, Hume) .....                    | MW 1 004 | 371 |

**TOTAL STATE SYSTEM** MW 4 330 129

## ELECTRICITY GENERATED

| STATE SYSTEM                       |     | Ten Year            |    |
|------------------------------------|-----|---------------------|----|
| Within Victoria                    |     | Percentage Increase |    |
| Thermal                            | GWh | 13 980              | 99 |
| Hydro                              | GWh | 773                 | 42 |
|                                    | GWh | <u>14 753</u>       | 95 |
| <b>Interstate</b>                  |     |                     |    |
| (Snowy, Hume and NSW Inter-change) |     |                     |    |
|                                    | GWh | 1 288               | 19 |
|                                    | GWh | <u>16 041</u>       | 86 |
| <b>TOTAL STATE SYSTEM</b>          |     |                     |    |

## SUPPLY NETWORK

### Overhead Lines

|                       |          |         |    |
|-----------------------|----------|---------|----|
| Overhead lines —      | Route km | 102 600 | 54 |
| Underground lines —   | Route km | 2 400   | 28 |
| Transmission stations | number   | 30      | 58 |
| Substations           | number   | 69 950  | 84 |

## BROWN COAL PRODUCTION

|                |            |               |     |
|----------------|------------|---------------|-----|
| Yallourn       | Kilotonnes | 10 105        | —26 |
| Morwell        | Kilotonnes | 14 736        | 255 |
| Yallourn North | Kilotonnes | 307           | —49 |
|                | Kilotonnes | <u>25 148</u> |     |
| <b>TOTAL</b>   |            |               | 36  |

## BROWN COAL CONSUMPTION

|                          |            | Ten Year            |     |
|--------------------------|------------|---------------------|-----|
|                          |            | Percentage Increase |     |
| Yallourn W Power Station | Kilotonnes | 2 289               | —   |
| Yallourn Power Station   | Kilotonnes | 4 707               | —50 |
| Morwell Power Station    | Kilotonnes | 2 430               | —8  |
| Hazelwood Power Station  | Kilotonnes | 12 317              | —   |
| Briquette Factories      | Kilotonnes | 3 098               | —16 |
| Industrial Customers     | Kilotonnes | <u>307</u>          | —26 |
| <b>TOTAL...</b>          | Kilotonnes | 25 148              | 36  |

## BRIQUETTE PRODUCTION

|              |            |       |     |
|--------------|------------|-------|-----|
| <b>TOTAL</b> | Kilotonnes | 1 164 | —39 |
|--------------|------------|-------|-----|

## BRIQUETTE CONSUMPTION

|                             |            |              |     |
|-----------------------------|------------|--------------|-----|
| Industrial Sales            | Kilotonnes | 633          | —11 |
| Domestic Sales              | Kilotonnes | 324          | —34 |
| Power Stations, Works, etc. | Kilotonnes | 207          | —72 |
|                             | Kilotonnes | <u>1 164</u> |     |
| <b>TOTAL</b>                | Kilotonnes | 1 164        | —40 |



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