

Generation and consumption of electricity P4141

March 2000

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| Actual estimates | March 2000 | % change between March 1999 and March 2000 | % change between January 1999 to March 1999 and January 2000 to March 2000 |
|--|-----------------------|---|---|
| Electricity consumed (Gigawatt-hours) | 16 211 | +2,7% | +3,5% |
| Index of the physical volume of electricity production | 113,8 | +4,0% | +1,4% |

| Seasonally adjusted estimates | March 2000 | % change between | % change between |
|--|-----------------------|-----------------------------|-----------------------------|
|--|-----------------------|-----------------------------|-----------------------------|

| | | February 2000 and March 2000 | October 1999 to December 1999 and January 2000 to March 2000 |
|--|--------|------------------------------------|--|
| Electricity consumed (Gigawatt-hours) | 16 146 | -2,4% | +0,1% |
| Index of the physical volume of electricity production | 114,1 | +2,1% | +0,7% |

Key findings for the month ended March 2000

Consumption of electricity increases

The seasonally adjusted consumption of electricity in South Africa for the first quarter of 2000 increased slightly by 0,1% (+38 Gigawatt-hours) after seasonal adjustment, compared with the fourth quarter of 1999. Furthermore, the consumption of electricity for the first quarter of 2000 increased by 3,5% compared with the first quarter of 1999.

Production of electricity increases

Production of electricity in South Africa for the three months up to March 2000, after seasonal adjustment, increased by 0,7% (+359 Gigawatt-hours) compared with the three months up to December 1999. Furthermore, the production of electricity for the first quarter of 2000 increased by 1,4% compared with the first quarter of 1999.

Due to severe floods in neighbouring countries of South Africa, the seasonally adjusted imports of electricity during this period decreased by 38,2% or 820 Gigawatt-hours. The seasonally adjusted exports of electricity to neighbouring countries decreased by 35,0% or 378 Gigawatt-hours during the above-mentioned period.

Notes

Forthcoming issues Issue Expected release date

April 2000 1 June 2000

Purpose of the survey The Generation and Consumption of Electricity Survey is a countrywide survey covering a sample of electricity undertakings and establishments conducting activities concerned with the generation or transmission and distribution of electricity in the South African economy. The information received is used to estimate key economic statistics and calculate production indices in order to compile estimates of the Gross Domestic Product (GDP) and its components, which are used to develop government policy.

Table 1 - Electricity consumed in South Africa: 1995 to 2000 (Gigawatt-hours) 1/

| Month | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|-----------------------------|---------|---------|---------|---------|---------|--------|
| Actual figures | | | | | | |
| J | 13 782 | 14 155 | 15 009 | 15 403 | 15 153 | 15 464 |
| F | 12 858 | 13 710 | 14 088 | 14 459 | 14 360 | 15 226 |
| M | 14 145 | 14 361 | 15 155 | 15 714 | 15 791 | 16 211 |
| A | 13 350 | 14 006 | 15 247 | 14 923 | 15 063 | |
| M | 14 687 | 15 315 | 16 423 | 16 261 | 16 327 | |
| J | 14 998 | 15 325 | 16 474 | 16 280 | 16 393 | |
| J | 15 440 | 16 862 | 17 187 | 16 867 | 17 051 | |
| A | 14 994 | 16 151 | 16 303 | 16 417 | 16 708 | |
| S | 13 939 | 14 698 | 15 503 | 15 536 | 15 937 | |
| O | 14 306 | 15 356 | 16 005 | 15 957 | 16 322 | |
| N | 14 070 | 14 792 | 15 235 | 15 136 | 15 831 | |
| D | 13 534 | 14 207 | 14 878 | 14 563 | 15 184 | |
| YEAR | 170 103 | 178 938 | 187 507 | 187 516 | 190 120 | |
| Seasonally adjusted figures | | | | | | |
| J | 14 091 | 14 465 | 15 301 | 15 738 | 15 490 | 15 846 |
| F | 14 137 | 15 026 | 15 400 | 15 753 | 15 615 | 16 539 |
| M | 14 127 | 14 302 | 15 079 | 15 637 | 15 710 | 16 146 |
| A | 14 115 | 14 788 | 16 075 | 15 734 | 15 861 | |
| M | 14 284 | 14 809 | 15 834 | 15 677 | 15 757 | |
| J | 14 168 | 14 512 | 15 650 | 15 518 | 15 673 | |
| J | 14 098 | 15 431 | 15 766 | 15 516 | 15 723 | |
| A | 14 065 | 15 198 | 15 358 | 15 519 | 15 814 | |
| S | 14 126 | 14 895 | 15 698 | 15 663 | 16 055 | |
| O | 14 153 | 15 182 | 15 775 | 15 666 | 16 019 | |
| N | 14 430 | 15 190 | 15 642 | 15 523 | 16 225 | |
| D | 14 395 | 15 168 | 15 936 | 15 613 | 16 251 | |

1/ As indicated by electricity available for distribution

Table 2 - Indices of the physical volume of electricity production: 1995 to 2000 (Base: 1995=100)

| Month | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|-----------------------------|-------|-------|-------|-------|-------|-------|
| Actual indices | | | | | | |
| J | 97,5 | 100,6 | 108,3 | 109,6 | 106,9 | 104,3 |
| F | 90,7 | 98,5 | 101,5 | 102,8 | 100,5 | 103,1 |
| M | 99,8 | 103,6 | 109,5 | 110,6 | 109,4 | 113,8 |
| A | 93,9 | 100,5 | 109,6 | 105,5 | 101,7 | |
| M | 102,6 | 109,9 | 117,8 | 115,4 | 110,6 | |
| J | 105,2 | 110,1 | 118,3 | 115,4 | 111,6 | |
| J | 108,7 | 121,1 | 124,1 | 119,9 | 117,4 | |
| A | 105,6 | 115,8 | 118,0 | 111,9 | 114,9 | |
| S | 98,5 | 105,7 | 112,9 | 109,1 | 109,4 | |
| O | 101,4 | 110,7 | 115,8 | 112,6 | 111,9 | |
| N | 99,9 | 107,3 | 110,0 | 106,2 | 108,4 | |
| D | 96,2 | 102,7 | 106,7 | 101,3 | 102,4 | |
| YEAR | 100,0 | 107,2 | 112,7 | 110,0 | 108,8 | |
| Seasonally adjusted indices | | | | | | |
| J | 99,8 | 102,9 | 110,7 | 111,9 | 109,2 | 106,6 |
| F | 99,6 | 107,8 | 110,7 | 111,7 | 109,0 | 111,7 |
| M | 100,0 | 103,8 | 109,9 | 110,9 | 109,7 | 114,1 |
| A | 99,2 | 106,2 | 115,7 | 111,4 | 107,4 | |
| M | 99,7 | 106,4 | 113,8 | 111,4 | 106,7 | |
| J | 99,5 | 104,6 | 112,8 | 110,5 | 107,0 | |
| J | 99,3 | 110,7 | 113,6 | 109,9 | 107,7 | |
| A | 99,1 | 109,0 | 111,2 | 105,7 | 108,6 | |
| S | 99,5 | 106,6 | 113,6 | 109,5 | 109,7 | |
| O | 100,2 | 109,1 | 113,8 | 110,4 | 109,6 | |
| N | 102,1 | 109,7 | 112,5 | 108,6 | 111,0 | |
| D | 102,1 | 109,3 | 113,9 | 108,3 | 109,6 | |

Table 3 - Electricity produced and consumed in power stations, purchased and sold outside South Africa and consumed in South Africa

| Description | Year 1999 | Gigawatt-hours | | | | |
|-----------------------|--------------|----------------|----------|-------|-----------------|------|
| | | March | February | March | January - March | |
| | | 2000 | | 1999 | 2000 | 1999 |
| Total - All producers | | | | | | |

| | | | | | | |
|--|---------|--------|--------|--------|--------|--------|
| Electricity produced | | | | | | |
| Actual figures | 203 012 | 17 708 | 16 040 | 17 023 | 49 976 | 49 277 |
| Seasonally adjusted figures | | 17 629 | 17 437 | 16 937 | - | - |
| Purchased outside South Africa | 6 673 | 6 | 529 | 302 | 1 195 | 688 |
| Consumed in power stations and auxiliary systems | 15 299 | 1 306 | 1 174 | 1 286 | 3 707 | 3 800 |
| Sold outside South Africa | 4 266 | 196 | 169 | 248 | 562 | 861 |
| Electricity consumed in South Africa 1/ | | | | | | |
| Actual figures | 190 120 | 16 211 | 15 226 | 15 791 | 46 901 | 45 304 |
| Seasonally adjusted figures | | 16 146 | 16 539 | 15 710 | - | - |
| ----- | | | | | | |
| Eskom | | | | | | |
| ----- | | | | | | |
| Electricity produced | | | | | | |
| Actual figures | 192 391 | 16 852 | 15 271 | 16 229 | 47 537 | 46 645 |
| Seasonally adjusted figures | | 16 683 | 16 598 | 16 059 | - | - |
| Purchased outside South Africa | 6 673 | 6 | 529 | 302 | 1 195 | 688 |
| Consumed in power stations and auxiliary systems | 14 144 | 1 213 | 1 108 | 1 192 | 3 459 | 3 519 |
| Sold outside South Africa | 4 266 | 196 | 169 | 248 | 562 | 861 |
| Electricity consumed in South Africa 1/ | | | | | | |
| Actual figures | 180 654 | 15 449 | 14 523 | 15 091 | 44 711 | 42 953 |
| Seasonally adjusted figures | | 15 298 | 15 777 | 14 931 | - | - |

1/ As indicated by electricity available for distribution

Additional information

Explanatory Notes

Introduction 1 Statistics South Africa (Stats SA) conducts a monthly sample survey of the electricity industry covering electricity undertakings and establishments (branches). This statistical release contains information regarding the number of electricity units produced and consumed in South Africa and the number of units purchased and sold outside South Africa on a monthly basis. Both actual and seasonally adjusted figures are published.

2 This statistical release reflects indices of the physical volume of electricity production. In accordance with international practice, the indices have to be rebased every five years to a new base year. The indices in this statistical release have been calculated on the basis of 1995=100. Rebased indices were published in the October 1997 Statistical release P4141 - Generation and Consumption of Electricity on 4 December 1997.

3 In order to improve timeliness of the publication, some information for the current month may have been estimated due to late submission by respondents. These estimates will be revised in the next statistical release(s) as soon as actual information is available.

Scope of the survey **4** This survey covers electricity undertakings and establishments conducting activities concerned with the generation or transmission and distribution of electricity, including electrical power installations which, as subsidiary divisions of undertakings, produce electricity for regular use by these undertakings.

Classification **5** The 1993 edition of the Standard Industrial Classification of all Economic Activities (SIC), Fifth Edition, Report No. 09-90-02, was used to classify the statistical units in the survey. The SIC is based on the 1990 International Standard Industrial Classification of all Economic Activities (ISIC) with suitable adaptations for local conditions. Each statistical unit is classified to an industry which reflects the predominant activity of the electricity undertaking or establishment.

Statistical unit **6** The basic statistical unit for the collection of information is the electricity undertaking or establishment. The electricity undertaking or establishment is the smallest economic unit that functions as a separate entity. Each statistical unit is classified to an industry (cf. paragraph 6).

Survey methodology and **7** The Business Address Register of Stats SA provides the population frame from

design which undertakings and establishments are selected for inclusion in the sample. A stratified systematic sample design based on electricity generated is used. All statistical units are stratified by type of economic activity according to the Standard Industrial Classification of all Economic Activities (SIC) and measure of size, where measure of size is the volume of electricity generated by the electricity undertaking or establishment. All large undertakings or establishments (size category one cases) are completely enumerated. A sample is drawn from medium and small size undertakings and establishments by systematically selecting undertakings or establishments within each size category. An electricity undertaking or establishment with a total generating capacity of less than 500 kilowatt is excluded from the sample.

8 The survey is conducted by mail each month collecting information from a sample of 24

electricity undertakings or establishments.P4141

Monthly production⁹ The calculation of the monthly production indices is based on the number of electricity units produced.

Benchmarking 10 The index of physical volume of electricity production should provide an accurate reflection of the trend of activities of the relevant industry. The level of activities as measured by the monthly Generation and Consumption of Electricity sample survey is based on information received from a sample of electricity undertakings and establishments which is weighted according to the original sample design in order to represent the population of electricity undertakings and establishments. It is necessary to adjust the level of activities as measured by the monthly sample survey to the level of activities as measured periodically by the Census of Electricity, Gas and Steam. This procedure, whereby the latest results of an economic census are used to compile more accurate level estimates for a certain year, is known as benchmarking.

11 The results of the 1995 Census of Electricity, Gas and Steam served as benchmarks to verify or adjust the level of the monthly physical volume of electricity production indices collected through the monthly sample survey. The level adjustments were done on the volume indices for July of the relevant census year (the 1995 census year covered the period 1 January 1995 to 31 December 1995 and, therefore, the benchmarking was done using the index of July 1995 as reference point). The results, due to benchmarking, were published in the October 1997 statistical release P4141 - Generation and Consumption of Electricity on 4 December 1997.

Seasonal adjustment 12 Seasonally adjusted estimates of all items are generated each month, using the X-11 Seasonal Adjustment Program developed by US Bureau of the Census Economic Research and Analyses Division, 1968. Seasonal adjustment is a means of removing the estimated effects of normal seasonal variation from the series so that the effects of other influences on the series can be more clearly recognised. Seasonal adjustment does not aim to remove irregular or non-seasonal influences which may be present in any particular month. Influences that are volatile or unsystematic can still make it difficult to interpret the movement of the series even after adjustment for seasonal variations. This means the month-to-month movements of seasonally adjusted estimates may not be reliable indicators of trend behaviour.

Trend cycle 13 The trend is the long-term pattern or movement of a time series. The X-11 Seasonal Adjustment Program is used for smoothing seasonally adjusted estimates.

Related publications 14 Users may also wish to refer to the following publications which are available from Stats SA -

- Bulletin of Statistics.

- SA Statistics.

Unpublished statistics 15 In some cases Stats SA can also make available statistics which are not published. The statistics can be made available as computer printouts, on diskette or CD. Generally a charge is made for providing unpublished statistics.

Rounding-off of figures 16 The figures in the tables have, where necessary, been rounded off to the nearest digit shown. There may, therefore, be slight discrepancies between the sums of the constituent items and the totals shown.

Pre-release policy 17 Stats SA has adopted the confidential pre-release policy in respect of selected economic indicators and specific government departments. The policy accords with practice among leading statistical agencies. The statistical integrity of the indices and strict observance of the release time has been assured by the following procedure:

In respect of this statistical release, an official representative from the Office of the President, the Department of Trade and Industry, the Department of Finance and the South African Reserve Bank will receive a copy of the release on a strictly confidential basis two hours in advance of the public issue.

Stats SA pre-release policy may be inspected at its Website, www.statssa.gov.za

Technical notes

Response rates The response rate for March 2000 is 100%.

Glossary

Electricity undertaking An electricity undertaking is an undertaking concerned with the generation or transmission and distribution of electricity, including electrical power installations which as subsidiary divisions of undertakings, produce electricity for regular use by these undertakings.

Establishment (branch) An establishment (branch) is defined as the smallest economic unit which operates as a separate entity for which comprehensive financial records are kept.

Index of physical volume The index of physical volume of electricity production or a production index is a statis-

of electricity production tical measure of the change in the volume of production. The

production index of electricity is the ratio between the volume of production of electricity in a given period and the volume of production of electricity in the base period. The base period is 1995. The production in the base period is set at 100.

Industry An industry consists of a group of undertakings or establishments engaged in the same or similar kinds of economic activity. Industries are defined in the 1993 System of National Accounts (1993 SNA) in the same way as in the Standard Industrial Classification of all Economic Activities (SIC), Fifth Edition, Report No. 09-90-02.

Unit of electricity One unit of electricity is equal to 1 kilowatt-hour (kWh).

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