

Generation and consumption of electricity P4141

December 1999

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Key figures for the month ended December 1999

Actual estimates	December 1999	% change	% change	% change
		between December 1998 and December 1999	between October 1998 to December 1998 and October 1999 to December 1999	between January 1998 to December 1998 and January 1999 to December 1999

Electricity consumed (Gigawatt-hours)	15 184	+4,3%	+3,7%	+1,4%
Index of the physical volume of electricity production	102,4	+1,1%	+0,8%	-1,1%

Seasonally adjusted estimates	December 1999	% change between November 1999 and December 1999	% change between July 1999 to September 1999 and October 1999 to December 1999
Electricity consumed (Gigawatt-hours)	16 208	-0,2%	+1,9%
Index of the physical volume of electricity production	109,5	-1,3%	+1,3%

Key findings for the month ended December 1999

Consumption of electricity increases

Consumption of electricity in South Africa for the fourth quarter of 1999 reflected an increase of 1,9% (+917 Gigawatt-hours), after seasonal adjustment, compared with the third quarter of 1999. Consumption of electricity for the year 1999 (190 120 Gigawatt-hours) was reflecting an increase of 1,4% compared with 1998.

Consumption of electricity, after seasonal adjustment, increased by 2,0% during the second half of 1999 compared with the first half of 1999, while production of electricity showed a slight increase of 1,0% during the same period. Production of electricity in South Africa for the year 1999 was 1,2% (2 362 Gigawatt-hours) lower than the production of electricity in 1998, mainly due to contractual obligations to import electricity from a neighbouring country. Imports of electricity increased sharply from the second quarter of 1999, reflecting an increase of 181,0% (4 298 Gigawatt-hours) for 1999 compared with 1998.

Sales of electricity to countries outside the borders of South Africa during 1999 (4 266 Gigawatt-hours), decreased by 5,9% compared with 1998 (4 532 Gigawatt-hours).

Notes

Forthcoming issues Issue Expected release date

January 2000 2 March 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 formal non-agricultural business sector of the South African economy. The information received is used to estimate key economic statistics used by the private and public sectors. The information is also used to calculate production indices in order to compile estimates of the Gross Domestic Product and its components which are used to develop government policy.

Table 1 Electricity consumed in South Africa: 1994 to 1999

Gigawatt-hours						
Month	1994	1995	1996	1997	1998	1999*
Actual figures						
J	13 176	13 782	14 155	15 009	15 403	15 153
F	12 294	12 858	13 710	14 088	14 459	14 360
M	13 593	14 145	14 361	15 155	15 714	15 791
A	12 723	13 350	14 006	15 247	14 923	15 063
M	13 892	14 687	15 315	16 423	16 261	16 327

J	14 629	14 998	15 325	16 474	16 280	16 393
J	15 255	15 440	16 862	17 187	16 867	17 051
A	14 893	14 994	16 151	16 303	16 417	16 708
S	13 719	13 939	14 698	15 503	15 536	15 937
O	14 018	14 306	15 356	16 005	15 957	16 322
N	13 752	14 070	14 792	15 235	15 136	15 831
D	13 366	13 534	14 207	14 878	14 563	15 184
Year	165 310	170 103	178 938	187 507	187 516	190 120
Seasonally adjusted figures						
J	13 484	14 090	14 465	15 295	15 744	15 489
F	13 552	14 150	15 050	15 424	15 809	15 679
M	13 605	14 147	14 327	15 104	15 696	15 776
A	13 445	14 114	14 785	16 076	15 726	15 856
M	13 550	14 282	14 804	15 831	15 667	15 747
J	13 809	14 169	14 515	15 657	15 519	15 674
J	13 916	14 096	15 428	15 760	15 503	15 711
A	13 928	14 055	15 179	15 335	15 492	15 784
S	13 869	14 115	14 888	15 685	15 654	16 051
O	13 867	14 149	15 181	15 767	15 662	16 019
N	14 099	14 423	15 190	15 637	15 527	16 236
D	14 190	14 396	15 161	15 907	15 573	16 208

Table 2 Indices of the physical volume of electricity production: 1994 to 1999

Base : 1995=100

Month	1994	1995	1996	1997	1998	1999
Actual indices						
J	92,7	97,5	100,6	108,3	109,6	106,9
F	86,7	90,7	98,5	101,5	102,8	100,5
M	96,1	99,8	103,6	109,5	110,6	109,4
A	90,1	93,9	100,5	109,6	105,5	101,7
M	98,5	102,6	109,9	117,8	115,4	110,6
J	103,2	105,2	110,1	118,3	115,4	111,6
J	107,5	108,7	121,1	124,1	119,9	117,4*
A	105,2	105,6	115,8	118,0	111,9	114,9
S	97,2	98,5	105,7	112,9	109,1	109,4

O	99,4	101,4	110,7	115,8	112,6	111,9
N	97,2	99,9	107,3	110,0	106,2	108,4
D	94,5	96,2	102,7	106,7	101,3	102,4
Year	97,4	100,0	107,2	112,7	110,0	108,8
Seasonally adjusted indices						
J	95,0	99,8	102,9	110,6	112,0	109,2
F	95,5	99,6	107,8	110,7	112,0	109,4
M	96,3	100,0	104,0	110,1	111,4	110,2
A	95,2	99,2	106,2	115,7	111,3	107,3
M	96,0	99,7	106,4	113,7	111,3	106,6
J	97,4	99,5	104,6	112,8	110,3	106,8
J	98,1	99,2	110,7	113,5	109,8	107,5
A	98,5	99,1	109,0	111,3	105,7	108,6
S	98,2	99,4	106,6	113,5	109,4	109,6
O	98,2	100,1	109,1	113,7	110,2	109,4
N	99,3	102,1	109,7	112,4	108,5	110,9
D	100,1	102,0	109,3	113,8	108,2	109,5

1/ As indicated by electricity available for distribution

* Revised

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

Description	Gigawatt-hours			
	December	November	December	January - December
	1999	1999	1998	1999 1998
Total - All producers				
ELECTRICITY PRODUCED				
Actual figures	15 935	16 857	15 763	203 012 205 374
Seasonally adjusted figures	17 045	17 253	16 846	- -
PURCHASED OUTSIDE SOUTH AFRICA	791	644	212	6 673 2 375
CONSUMED IN POWER STATIONS AND AUXILIARY SYSTEMS	1 217	1 238	1 109	15 299 15 701

SOLD OUTSIDE SOUTH AFRICA	325	432	303	4 266	4 532
ELECTRICITY CONSUMED IN SOUTH AFRICA 1/ Actual figures	15 184	15 831	14 563	190 120	187 516
Seasonally adjusted figures	16 208	16 236	15 573	-	-

Eskom

ELECTRICITY PRODUCED Actual figures	15 056	15 963	14 898	192 391	193 662
Seasonally adjusted figures	16 106	16 335	15 920	-	-
PURCHASED OUTSIDE SOUTH AFRICA	791	644	212	6 673	2 375
CONSUMED IN POWER STATIONS AND AUXILIARY SYSTEMS	1 129	1 135	1 020	14 144	14 394
SOLD OUTSIDE SOUTH AFRICA	325	432	303	4 266	4 532
ELECTRICITY CONSUMED IN SOUTH AFRICA 1/ Actual figures	14 393	15 040	13 787	180 654	177 111
Seasonally adjusted figures	15 374	15 416	14 751	-	-

1/ As indicated by electricity available for distribution

* Revised

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 detailed 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.

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 and were published in the October 1997 Statistical release P4141 (entitled Generation and Consumption of Electricity) on 4 December 1997. Both actual and seasonally adjusted figures are presented.

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

4 Production indices and electricity consumed in South Africa are reflected from January 1994 in this statistical release, in order to provide users with comparable time series.

Scope of the survey **5** This survey covers electricity undertakings or 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 **6** 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 **7** 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.

An electricity undertaking or establishment with a total generating capacity of less than 500 kilowatt is excluded. Each statistical unit is classified to an industry (cf. paragraph 6).

Survey methodology and 8 The survey is collected by mail each month from a sample of approximately 24 **design** electricity undertakings or establishments.

Sample design 9 Business Address Register of Stats SA provided the population frame from which undertakings and establishments were selected for inclusion in the sample. A stratified systematic sample design based on electricity generated was used. All statistical units were 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 was the electricity generated by the electricity undertaking or establishment. All large undertakings or establishments (size category one cases) are completely enumerated. A sample was drawn from medium and small size undertakings and establishments by systematically selecting undertakings or establishments with equal probability.

Monthly production 10 The calculation of the monthly production indices is based on the number of electri-

indices city units produced.

Benchmarking 11 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. 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. The results, due to

benchmarking, were published in the October 1997 statistical release P4141 (entitled Generation and Consumption of Electricity) on 4 December 1997.

12 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 (e.g. the 1995 census year covers the period 1 January 1995 to 31 December 1995 and, therefore, the benchmarking was done using the index of July 1995 as reference point).

Seasonal adjustment 13 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 14 Smoothed seasonally adjusted estimates are generated using the X-11 Seasonal Adjustment Program above.

Related publications 15 Users may also wish to refer to the following publications which are available from Stats SA -

- Bulletin of Statistics.
- SA Statistics.

Unpublished statistics 16 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 Rom. Generally a charge is made for providing unpublished statistics.

Rounding-off of figures 17 The figures in the tables have, where necessary,

been rounded off to the nearest final digit shown. There may, therefore, be slight discrepancies between the sums of the constituent items and the totals shown.

Pre-release policy 18 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 Deputy 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 December 1999 is 100%.

Glossary

Electricity undertaking 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.

Enterprise (firm) An enterprise (firm) is a legal entity consisting of one or more establishments (branches) including the head office, but excluding holding or subsidiary companies.

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-

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 System of National Accounts (SNA) in the same way as in the Standard Industrial Classification (SIC) of all Economic Activities, Fifth Edition, Report No. 09-90-02.

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

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