

Generation and consumption of electricity

December 2001

Co-operation between Statistics South Africa (Stats SA), the citizens of the country, the private sector and government institutions is essential for a successful statistical system. Without continued co-operation and goodwill, the timely release of relevant and reliable official statistics will not be possible.

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Stats SA publishes approximately three hundred different releases each year. It is not economically viable to produce them in more than one of South Africa's eleven official languages. Since the releases are used extensively, not only locally, but also by international economic and social-scientific communities, Stats SA releases are published in English only.

This data in this statistical release adheres to the Special Data Dissemination Standard (SDDS) of the International Monetary Fund (IMF), which sets out standards on coverage, periodicity and timeliness of data; access by the public; integrity; and quality of the disseminated data.

Key figures as at the end of December 2001**Actual estimates**

	December 2001	% change between December 2000 and December 2001	% change between October 2000 to December 2000 and October 2001 to December 2001	% change between January 2000 to December 2000 and January 2001 to December 2001
Electricity consumed (Gigawatt-hours)	15 224	-1,1%	-0,6%	+0,2%
Electricity imported (Gigawatt-hours)	708	-9,0%	+9,1%	+53,6%
Electricity exported (Gigawatt-hours)	547	-10,2%	+6,0%	+62,7%
Index of the physical volume of electricity production (2000=100)	92,1	-1,8%	-1,3%	-0,3%

Seasonally adjusted estimates

	December 2001	% change between November 2001 and December 2001	% change between July 2001 to September 2001 and October 2001 to December 2001
Electricity consumed (Gigawatt-hours)	16 234	-0,2%	-1,1%
Electricity imported (Gigawatt-hours)	539	-5,1%	+32,0%
Electricity exported (Gigawatt-hours)	495	+1,4%	+0,6%
Index of the physical volume of electricity production (2000=100)	98,9	-0,3%	-2,2%

Key findings as at the end of December 2001

Consumption of electricity higher than a year ago

The consumption of electricity in South Africa for the year 2001 increased by 0,2% (+403 Gigawatt-hours) compared with the year 2000. However, the consumption of electricity for December 2001 decreased by 1,1% (-171 Gigawatt-hours) compared with December 2000. Furthermore, the consumption of electricity for the fourth quarter of the year 2001, after seasonal adjustment, decreased by 1,1% (-521 Gigawatt-hours) compared with the third quarter of the year 2001.

Production of electricity lower than a year ago

The production of electricity in South Africa for the year 2001 decreased by 0,3% (-570 Gigawatt-hours) compared with the year 2000. Furthermore, the production of electricity for December 2001 decreased by 1,8% (-298 Gigawatt-hours) compared with December 2000. The production of electricity for the fourth quarter of the year 2001, after seasonal adjustment, decreased by 2,2% (-1 173 Gigawatt-hours) compared with the third quarter of the year 2001.

Import of electricity higher than a year ago

The import of electricity in South Africa for the year 2001 increased by 53,6% (+2 528 Gigawatt-hours) compared with the year 2000. This large increase of 53,6% in imports was mainly due to low imports from neighbouring countries in the year 2000 due to severe flooding in neighbouring countries during the period March 2000 to June 2000. However, the import of electricity for December 2001 decreased by 9,0% (-70 Gigawatt-hours) compared with December 2000. The seasonally adjusted import of electricity from neighbouring countries for the fourth quarter of the year 2001 increased by 32,0% (+430 Gigawatt-hours) compared with the third quarter of the year 2001.

Export of electricity higher than a year ago

The export of electricity for the year 2001 increased by 62,7% (+2 512 Gigawatt-hours) compared with the year 2000. The increase of 62,7% in export to neighbouring countries was mainly due to the aluminium smelter commissioned in Mozambique towards the end of 2000. However, the export of electricity for December 2001 decreased by 10,2% (-62 Gigawatt-hours) compared to December 2000. The seasonally adjusted export of electricity for the fourth quarter of the year 2001 increased by 0,6% (+9 Gigawatt-hours) compared with the third quarter of the year 2001.

Figure 1 – Electricity consumed and produced in South Africa

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Notes

Forthcoming issues	Issue	Expected release date
	January 2002	7 March 2002
	February 2002	4 April 2002
	March 2002	2 May 2002
	April 2002	6 June 2002
	May 2002	4 July 2002
	June 2002	1 August 2002
	July 2002	5 September 2002
	August 2002	3 October 2002
	September 2002	7 November 2002
	October 2002	5 December 2002
	November 2002	2 January 2003
	December 2002	6 February 2003

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 formulate and monitor government policy.

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 2000=100. |
| | 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 5). |
| Survey methodology and design | 7 | 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 23 electricity undertakings or establishments. |

Monthly production indices	9	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 - <ul style="list-style-type: none"> • 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:
- 18** 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.
- 19** Stats SA pre-release policy may be inspected at its Website, www.statssa.gov.za

Technical notes

- Response rates** The response rate for the survey on the generation and consumption of electricity for December 2001 is 95,7%.

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 of electricity production	The index of physical volume of electricity production or a production index is a statistical 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 2000. 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). One gigawatt-hours (gWh) of electricity is equal to one million kilowatt-hours.

For more information

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Table 1 - Electricity consumed in South Africa: 1996 to 2001 Gigawatt-hours 1/

Month	1996	1997	1998	1999	2000	2001
Actual figures						
J	14 155	15 009	15 403	15 153	15 512	16 064
F	13 710	14 088	14 459	14 360	15 224	14 871
M	14 361	15 155	15 714	15 791	16 225	16 320
A	14 006	15 247	14 923	15 063	15 399	15 515
M	15 315	16 423	16 261	16 327	17 064	16 929
J	15 325	16 474	16 280	16 393	16 818	16 788
J	16 862	17 187	16 867	17 051	17 759	18 021
A	16 151	16 303	16 417	16 708	17 214	17 300
S	14 698	15 503	15 536	15 937	16 180	16 277
O	15 356	16 005	15 957	16 322	16 709	16 794
N	14 792	15 235	15 136	15 831	16 161	15 960
D	14 207	14 878	14 563	15 184	15 395	15 224
YEAR	178 938	187 507	187 516	190 120	195 660	196 063
Seasonally adjusted figures						
J	14 461	15 281	15 711	15 431	15 832	16 294
F	15 050	15 428	15 814	15 695	16 652	16 213
M	14 316	15 096	15 682	15 759	16 213	16 226
A	14 762	16 025	15 650	15 776	16 191	16 183
M	14 786	15 795	15 621	15 715	16 431	16 284
J	14 529	15 694	15 579	15 752	16 163	16 151
J	15 429	15 775	15 535	15 765	16 439	16 684
A	15 215	15 395	15 569	15 858	16 331	16 409
S	14 894	15 707	15 677	16 076	16 310	16 435
O	15 185	15 786	15 673	16 012	16 397	16 501
N	15 183	15 622	15 488	16 139	16 469	16 272
D	15 152	15 897	15 536	16 137	16 406	16 234

1/ As indicated by electricity available for distribution

Table 2 - Indices of the physical volume of electricity production: 1996 to 2001 Base : 2000=100

Month	1996	1997	1998	1999	2000	2001
Actual indices						
J	89,1	95,9	97,1	94,7	92,5	98,6
F	87,2	89,9	91,1	89,0	91,2	90,1
M	91,8	97,0	98,0	97,0	100,9	98,5
A	89,1	97,1	93,5	90,1	95,9	93,6
M	97,4	104,4	102,2	98,0	106,3	103,0
J	97,6	104,8	102,2	98,9	104,9	101,1
J	107,3	109,9	106,2	104,0	107,8	111,1
A	102,6	104,5	99,1	101,8	105,5	108,0
S	93,6	100,0	96,6	96,9	99,1	100,5
O	98,1	102,6	99,8	99,1	103,1	102,7
N	95,0	97,4	94,1	96,0	99,1	97,4
D	91,0	94,6	89,8	90,8	93,8	92,1
YEAR	95,0	99,8	97,5	96,4	100,0	99,7
Seasonally adjusted indices						
J	91,1	98,1	99,2	96,7	94,4	100,6
F	95,4	98,1	99,3	97,0	99,5	98,3
M	91,9	97,1	98,0	96,9	100,7	98,3
A	94,1	102,4	98,6	95,0	101,3	98,9
M	94,3	100,7	98,4	94,3	102,3	99,2
J	92,7	100,0	97,9	95,0	101,0	97,4
J	98,1	100,6	97,3	95,3	98,7	101,7
A	96,7	98,7	93,8	96,5	100,0	102,4
S	94,4	100,7	97,1	97,4	99,5	100,9
O	96,6	100,7	97,7	96,7	100,5	100,2
N	97,1	99,6	96,2	98,0	101,0	99,2
D	96,8	101,0	96,1	97,3	100,6	98,9

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

Description	Gigawatt-hours					
	Year 2001	December	November	December	January - December	
		2001	2000	2001	2000	
Total - All Producers						
Electricity produced						
Actual figures	210 100	16 165	17 096	16 463	210 100	210 670
Seasonally adjusted figures		17 377	17 421	17 664	-	-
Purchased outside South Africa (import)	7 247	708	636	778	7 247	4 719
Consumed in power stations and auxiliary systems	14 767	1 102	1 174	1 237	14 767	15 719
Sold outside South Africa (export)	6 519	547	598	609	6 519	4 007
Electricity consumed in South Africa 1/						
Actual figures	196 063	15 224	15 960	15 395	196 063	195 660
Seasonally adjusted figures		16 234	16 272	16 406	-	-
ESKOM						
Electricity produced						
Actual figures	200 758	15 526	16 457	15 687	200 758	200 357
Seasonally adjusted figures		16 716	16 786	16 858	-	-
Purchased outside South Africa (import)	7 247	708	636	778	7 247	4 719
Consumed in power stations and auxiliary systems	13 622	1 024	1 089	1 151	13 622	14 581
Sold outside South Africa (export)	6 519	547	598	609	6 519	4 007
Electricity consumed in South Africa 1/						
Actual figures	187 863	14 663	15 406	14 706	187 863	186 485
Seasonally adjusted figures		15 659	15 719	15 696	-	-

1/ As indicated by electricity available for distribution

* Revised