

P4141

**Generation and consumption
of electricity**

October 2001

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Key figures as at the end of October 2001

Actual estimates

	October 2001	% change between October 2000 and October 2001	% change between August 2000 to October 2000 and August 2001 to October 2001	% change between January 2000 to October 2000 and January 2001 to October 2001
Electricity consumed (Gigawatt-hours)	16 794	+0,5%	+0,5%	+0,5%
Electricity imported (Gigawatt-hours)	713	+40,9%	+1,7%	+76,7%
Electricity exported (Gigawatt-hours)	630	+16,7%	+28,3%	+87,1%
Index of the physical volume of electricity production (2000=100)	102,7	-0,4%	+1,1%	-0,0%

Seasonally adjusted estimates

	October 2001	% change between September 2001 and October 2001	% change between May 2001 to July 2001 and August 2001 to October 2001
Electricity consumed (Gigawatt-hours)	16 568	+0,8%	+0,5%
Electricity imported (Gigawatt-hours)	687	+47,1%	-32,0%
Electricity exported (Gigawatt-hours)	488	+2,1%	-7,4%
Index of the physical volume of electricity production (2000=100)	100,5	-0,6%	+1,8%

Key findings as at the end of October 2001

Consumption of electricity increases

The consumption of electricity for the three months ended October 2001, after seasonal adjustment, increased by 0,5% (+251 Gigawatt-hours) compared with the previous three months. The consumption of electricity for October 2001 increased by 0,5% (+85 Gigawatt-hours) compared with October 2000. Furthermore, the consumption of electricity in South Africa for the first ten months of 2001 increased by 0,5% (+775 Gigawatt-hours) compared with the first ten months of 2000.

Production of electricity increases

The production of electricity for the three months ended October 2001, after seasonal adjustment, increased by 1,8% (+908 Gigawatt-hours) compared with the previous three months. The production of electricity for October 2001 decreased by 0,4% (-70 Gigawatt-hours) compared with October 2000. Furthermore, the production of electricity in South Africa for the first ten months of 2001 is on the same level as that for the first ten months of 2000.

Import of electricity decreases

The seasonally adjusted import of electricity from neighbouring countries for the three months ended October 2001 decreased by 32,0% (-659 Gigawatt-hours) compared with the previous three months. The decrease of 32,0% in imports was mainly due to a technical problem which was experienced in the power station at Cahora Bassa. However, the import of electricity for October 2001 increased by 40,9% (+207 Gigawatt-hours) compared with October 2000. Furthermore, the import of electricity in South Africa for the first ten months of 2001 increased by 76,7% (+2 563 Gigawatt-hours) compared with the first ten months of 2000. The large increase of 76,7% in imports was mainly due to low imports from neighbouring countries in the first ten months of 2000 due to severe flooding in neighbouring countries during the period March 2000 to June 2000.

Export of electricity decreases

The seasonally adjusted export of electricity for the three months ended October 2001 decreased by 7,4% (-116 Gigawatt-hours) compared with the previous three months. However, the export of electricity for October 2001 increased by 16,7% (+90 Gigawatt-hours) compared with October 2000. Furthermore, export of electricity for the first ten months of 2001 increased by 87,1% (+2 501 Gigawatt-hours) compared with the first ten months of 2000. The increase of 87,1% in export to neighbouring countries was mainly due to the aluminium smelter commissioned in Mozambique towards the end of 2000.

Adjustment of the base period of the index of physical volume of electricity production to 2000=100

The base period is the reference point of an index and is usually set at 100. Base periods have to be chosen carefully because different results can be obtained with different base periods. The following are important criteria for selecting base periods:

- The base period must be recent to ensure that as many as possible of the components of the index are included in both the base period and the current period. The more recent the base period, the more comparable the current indices are with those of the base period.
- Due to a large number of indices being published regularly, it is useful if they all have a common base period. The internationally accepted current base period is 2000.

To compare different indices or to compare the movements in a specific index over a period, it often becomes necessary to shift the base period of an index.

Following international practice of rebasing indices every five years, the base year of the index of physical volume of electricity production has been changed from 1995=100 to 2000=100 with effect from October 2001.

Each index was transformed to the new base period by dividing each index by the average annual index for the year 2000 and multiplying the result by 100.

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Notes

Forthcoming issues	Issue	Expected release date
	November 2001	3 January 2002
	December 2001	7 February 2002

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 October 2001 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 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

Stats SA publishes approximately 300 different statistical 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.

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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	
D	14 207	14 878	14 563	15 184	15 395	
YEAR	178 938	187 507	187 516	190 120	195 660	
Seasonally adjusted figures						
J	14 459	15 279	15 704	15 422	15 811	16 270
F	15 049	15 423	15 809	15 688	16 638	16 197
M	14 314	15 089	15 671	15 750	16 195	16 205
A	14 760	16 021	15 646	15 771	16 179	16 167
M	14 794	15 810	15 644	15 742	16 456	16 313
J	14 525	15 683	15 566	15 735	16 143	16 132
J	15 427	15 776	15 538	15 765	16 437	16 686
A	15 213	15 395	15 565	15 837	16 297	16 373
S	14 898	15 711	15 683	16 079	16 312	16 441
O	15 189	15 788	15 691	16 044	16 452	16 568
N	15 178	15 615	15 466	16 146	16 477	
D	15 159	15 911	15 542	16 177	16 441	

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

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

Gigawatt-hours

Description	Year 2000	October	September	October	January - October	
		2001	2000	2001	2000	
Total - All Producers						
Electricity produced						
Actual figures	210 670	18 037	17 637	18 107	176 839	176 805
Seasonally adjusted figures		17 644	17 749	17 701	-	-
Purchased outside South Africa (import)	4 719	713	507	506	5 903	3 340
Consumed in power stations and auxiliary systems	15 719	1 326	1 286	1 363	12 491	13 164
Sold outside South Africa (export)	4 007	630	581	540	5 374	2 873
Electricity consumed in South Africa 1/						
Actual figures	195 660	16 794	16 277	16 709	164 879	164 104
Seasonally adjusted figures		16 568	16 441	16 452	-	-
ESKOM						
Electricity produced						
Actual figures	200 357	17 371	16 922	17 200	168 775	168 171
Seasonally adjusted figures		16 987	17 034	16 808	-	-
Purchased outside South Africa (import)	4 719	713	507	506	5 903	3 340
Consumed in power stations and auxiliary systems	14 581	1 230	1 196	1 257	11 509	12 218
Sold outside South Africa (export)	4 007	630	581	540	5 374	2 873
Electricity consumed in South Africa 1/						
Actual figures	186 485	16 224	15 652	15 908	157 794	156 416
Seasonally adjusted figures		16 000	15 815	15 658	-	-

1/ As indicated by electricity available for distribution

* Revised