

Generation and consumption of electricity

October 2003

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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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 October 2003

Actual estimates	October 2003	% change between October 2002 and October 2003	% change between August 2002 to October 2002 and August 2003 to October 2003	% change between January 2002 to October 2002 and January 2003 to October 2003
Electricity consumed (Gigawatt-hours)	18 213	+3,9	+3,2	+3,5
Electricity imported (Gigawatt-hours)	272	-40,1	-46,9	-18,9
Electricity exported (Gigawatt-hours)	1 116	+78,3	+72,0	+40,3
Index of the physical volume of electricity production (2000=100)	117,2	+8,2	+8,0	+6,2

Seasonally adjusted estimates	October 2003	% change between September 2003 and October 2003	% change between May 2003 to July 2003 and August 2003 to October 2003
Electricity consumed (Gigawatt-hours)	17 881	+1,8	+2,0
Electricity imported (Gigawatt-hours)	344	+9,2	-47,8
Electricity exported (Gigawatt-hours)	957	+1,7	+9,8
Index of the physical volume of electricity production (2000=100)	113,6	+1,6	+4,1

Key findings as at the end of October 2003

Consumption of electricity increases

The consumption of electricity for the three months ended October 2003, after seasonal adjustment, increased by 2,0% (+1 052 Gigawatt-hours) compared with the previous three months. The consumption of electricity for October 2003 increased by 3,9% (+690 Gigawatt-hours) compared with October 2002. Furthermore, the consumption of electricity in South Africa for the first ten months of 2003 increased by 3,5% (+6 009 Gigawatt-hours) compared with the first ten months of 2002.

Production of electricity increases

The production of electricity for the three months ended October 2003, after seasonal adjustment, increased by 4,1% (+2 425 Gigawatt-hours) compared with the previous three months. The production of electricity for October 2003 increased by 8,2% (+1 570 Gigawatt-hours) compared with October 2002. Furthermore, the production of electricity in South Africa for the first ten months of 2003 increased by 6,2% (+11 180 Gigawatt-hours) compared with the first ten months of 2002.

Import of electricity decreases

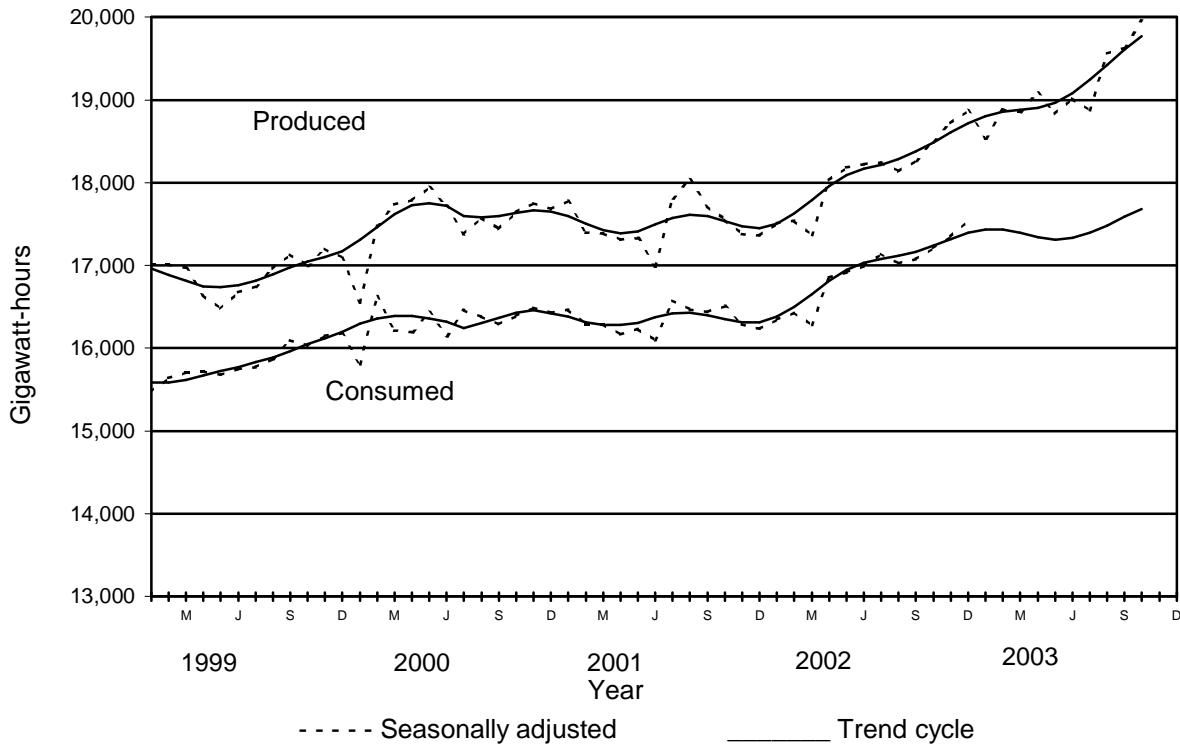
The seasonally adjusted import of electricity for the three months ended October 2003 decreased by 47,8% (-965 Gigawatt-hours) compared with the previous three months. The import of electricity for October 2003 decreased by 40,1% (-182 Gigawatt-hours) compared with October 2002, which was mainly due to refurbishment of the Cahora Bassa power plant. Furthermore, the import of electricity into South Africa for the first ten months of 2003 decreased by 18,9% (-1 269 Gigawatt-hours) compared with the first ten months of 2002.

Export of electricity increases

The seasonally adjusted export of electricity for the three months ended October 2003 increased by 9,8% (+254 Gigawatt-hours) compared with the previous three months. The export of electricity for October 2003 increased by 78,3% (+490 Gigawatt-hours) compared with October 2002. Furthermore, the export of electricity for the first ten months of 2003 increased by 40,3% (+2 314 Gigawatt-hours) compared with the first ten months of 2002. The large increase of 40,3% in export was mainly due to the dry weather conditions experienced in some of the neighbouring countries. Some of these countries who were importing electricity from Cahora Bassa are now importing from South Africa.

Exports of electricity for the first ten months of 2003 exceeded the imports of electricity by 48,2% (+2 620 Gigawatt-hours). In comparison, during the first ten months of 2002, 14,4% (963 Gigawatt-hours) less electricity was exported than imported.

Figure 1 – Electricity consumed and produced in South Africa



Source: Stats SA

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Statistician-General: Statistics South Africa

Contents

	Page
Notes	5
.....	
Tables	
Table 1 Total volume of electricity consumed in South Africa (SA): 1998 to 2003.....	6
Table 2 Seasonally adjusted total volume of electricity consumed in SA: 1998 to 2003.....	6
Table 3 Indices of the physical volume of electricity production: 1998 to 2003.....	7
Table 4 Seasonally adjusted indices of the physical volume of electricity production: 1998 to 2003.....	7
Table 5 Total volume of electricity imported: 1998 to 2003.....	8
Table 6 Total volume of electricity exported: 1998 to 2003.....	8
Table 7 Electricity produced and consumed in power stations, purchased and sold outside South Africa and consumed in South Africa.....	9
Table 8 Electricity distributed by Eskom according to province for the year 2003.....	10
Additional information	
Explanatory notes	11
Glossary	14
For more information	15

Notes

Forthcoming issues	Issue	Expected release date
	November 2003	8 January 2004
	December 2003	5 February 2004
	January 2004	4 March 2004
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.	
Response rate	The response rate for the survey on the generation and consumption of electricity for October 2003 was 100%.	

Table 1 - Total volume of electricity consumed in South Africa (SA): 1998 to 2003

Gigawatt-hours						
Month	1998	1999	2000	2001	2002	2003
January	15 403	15 153	15 512	16 064	15 968	16 837
February	14 459	14 360	15 224	14 871	15 005	15 940
March	15 714	15 791	16 225	16 320	16 353	17 424
April	14 923	15 063	15 399	15 515	16 172	16 728
May	16 261	16 327	17 064	16 929	17 642	17 974
June	16 280	16 393	16 818	16 788	17 763	18 116
July	16 867	17 051	17 759	18 021	18 743	18 939
August	16 417	16 708	17 214	17 300	17 842	18 462
September	15 536	15 937	16 180	16 277	16 892	17 279
October	15 957	16 322	16 709	16 794	17 523	18 213
November	15 136	15 831	16 161	15 960	17 005	
December	14 563	15 184	15 395	15 224	16 440	
Year	187 516	190 120	195 660	196 063	203 348	

Table 2 - Seasonally adjusted total volume of electricity consumed in SA: 1998 to 2003

Gigawatt-hours						
Month	1998	1999	2000	2001	2002	2003
January	15 750	15 497	15 865	16 444	16 355	17 248
February	15 800	15 697	16 661	16 261	16 433	17 495
March	15 704	15 783	16 230	16 265	16 294	17 368
April	15 652	15 775	16 164	16 166	16 847	17 432
May	15 592	15 675	16 370	16 233	16 918	17 218
June	15 579	15 748	16 143	16 112	17 014	17 312
July	15 536	15 746	16 396	16 599	17 248	17 405
August	15 547	15 846	16 337	16 409	16 950	17 549
September	15 663	16 065	16 315	16 447	17 093	17 557
October	15 669	16 024	16 409	16 476	17 159	17 881
November	15 493	16 168	16 495	16 298	17 359	
December	15 552	16 175	16 428	16 248	17 553	

Table 3 - Indices of the physical volume of electricity production: 1998 to 2003**Base: 2000=100**

Month	1998	1999	2000	2001	2002	2003
January	97,1	94,7	92,5	98,6	97,1	102,7
February	91,1	89,0	91,2	90,1	90,5	97,1
March	98,0	97,0	100,9	98,5	98,5	106,6
April	93,5	90,1	95,9	93,6	97,8	103,6
May	102,2	98,0	106,3	103,0	108,1	111,9
June	102,2	98,9	104,9	101,1	108,6	113,2
July	106,2	104,0	107,8	111,1	114,2	117,7
August	99,1	101,8	105,5	108,0	108,5	117,5
September	96,6	96,9	99,1	100,5	103,5	111,3
October	99,8	99,1	103,1	102,7	108,3	117,2
November	94,1	96,0	99,1	97,4	104,9	
December	89,8	90,8	93,8	92,1	100,0	
Year	97,5	96,4	100,0	99,7	103,3	

Table 4 - Seasonally adjusted indices of the physical volume of electricity production: 1998 to 2003**Base: 2000=100**

Month	1998	1999	2000	2001	2002	2003
January	99,3	96,9	94,7	101,2	99,9	105,7
February	99,4	97,3	100,0	99,1	99,9	107,5
March	98,3	97,3	101,2	98,8	99,0	107,3
April	98,7	95,0	101,0	98,4	102,7	108,7
May	98,4	94,1	102,1	98,8	103,7	107,3
June	97,9	94,8	100,6	96,9	104,0	108,3
July	97,4	95,4	98,9	101,9	104,7	107,8
August	93,6	96,3	99,9	102,2	102,7	111,2
September	97,1	97,3	99,5	100,9	103,9	111,8
October	97,6	96,7	100,4	99,7	105,0	113,6
November	96,2	98,0	100,9	99,1	106,6	
December	96,2	97,5	100,8	99,0	107,5	

Table 8 - Electricity distributed by Eskom according to province for the year 2003 1/**Gigawatt-hours**

Month	Western Cape	Eastern Cape	Northern Cape	Free State	North West
January	1 673	545	379	792	2 356
February	1 622	520	355	742	2 169
March	1 763	590	372	814	2 318
April	1 655	534	330	766	2 241
May	1 670	582	334	828	2 248
June	1 746	635	339	854	2 391
July	1 821	661	358	883	2 424
August	1 791	545	361	857	2 359
September	1 697	617	364	767	2 302
October	1 746	632	401	807	2 465
November					
December					
Year to date	17 184	5 861	3 593	8 110	23 273

Month	KwaZulu-Natal	Mpumalanga	Gauteng	Limpopo	Total RSA
January	3 204	2 090	4 058	740	15 838
February	2 970	1 938	3 802	699	14 818
March	3 216	2 217	4 201	786	16 279
April	3 155	2 070	4 095	752	15 599
May	3 604	2 183	4 507	785	16 741
June	3 211	2 061	4 808	789	16 836
July	3 387	2 166	5 116	832	17 648
August	3 334	2 120	4 854	828	17 173
September	3 226	2 032	4 356	794	16 155
October	3 413	2 140	4 518	825	16 947
November					
December					
Year to date	32 720	21 017	44 315	7 830	164 034

1/ Wholesale energy as delivered by Eskom to the various provinces

Table 7 - Electricity produced and consumed in power stations, purchased and sold outside South Africa and consumed in South Africa

Gigawatt-hours						
Description	October 2002	September 2003	October 2003	January 2002 to October 2002	January 2003 to October 2003	Percentage change between January 2002 to October 2002 and January 2003 to October 2003
Total - All Producers						
Electricity produced	19 012	19 535	20 582	181 736	192 916	+ 6,2
Purchased outside South Africa (import)	454	266	272	6 705	5 436	- 18,9
Consumed in power stations and auxilliary systems	1 317	1 471	1 526	12 799	14 384	+ 12,4
Sold outside South Africa (export)	626	1 051	1 116	5 742	8 056	+ 40,3
Electricity consumed in South Africa ^{1/}	17 523	17 279	18 213	169 903	175 912	+ 3,5
Eskom						
Electricity produced	18 311	18 801	19 829	174 713	185 729	+ 6,3
Purchased outside South Africa (import)	454	266	272	6 705	5 436	- 18,9
Consumed in power stations and auxilliary systems	1 230	1 403	1 439	11 917	13 597	+ 14,1
Sold outside South Africa (export)	626	1 051	1 116	5 742	8 056	+ 40,3
Electricity consumed in South Africa ^{1/}	16 908	16 613	17 546	163 762	169 512	+ 3,5

^{1/} As indicated by electricity available for distribution

Table 8 - Electricity distributed by Eskom according to province for the year 2003 1/**Gigawatt-hours**

Month	Western Cape	Eastern Cape	Northern Cape	Free State	North West
January	1 673	545	379	792	2 356
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July	1 821	661	358	883	2 424
August	1 791	545	361	857	2 359
September	1 697	617	364	767	2 302
October	1746	631	401	807	2 465
November					
December					
Year to date	17 259	5 890	3 549	8 186	23 233

Month	KwaZulu-Natal	Mpumalanga	Gauteng	Limpopo	Total RSA
January	3 204	2 090	4 058	740	15 838
February	2 970	1 938	3 802	699	14 818
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September	3 226	2 032	4 356	794	16 155
October	3 413	2 139	4518	825	16 947
November					
December					
Year to date	32 694	21 043	44 913	7 836	164 033

1/ Wholesale energy as delivered by Eskom to the various provinces

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, the number of units purchased and sold outside South Africa and the number of units distributed by Eskom according to province 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. Rebased indices were published since the October 2001 Statistical Release P4141: *Generation and Consumption of Electricity* on 6 December 2001.
 - 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 22 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 are 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: <i>Generation and Consumption of Electricity</i> 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 behavior.
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"> • <i>Bulletin of Statistics.</i> • <i>SA Statistics.</i>
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 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 pre-release policy may be inspected at its Website, www.statssa.gov.za.

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 <i>Standard Industrial Classification of all Economic Activities (SIC)</i> , Fifth Edition, Report No. 09-90-02.
Unit of electricity	One unit of electricity is equal to 1 kilowatt-hour (kWh). One gigawatt-hour (gWh) of electricity is equal to one million kilowatt-hours.

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