



# Generation and consumption of electricity

September 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.

**Embargo: 13:00**  
**Date: 6 November 2003**

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 September 2003****Actual estimates**

	<b>September 2003</b>	<b>% change between September 2002 and September 2003</b>	<b>% change between July 2002 to September 2002 and July 2003 to September 2003</b>	<b>% change between January 2002 to September 2002 and January 2003 to September 2003</b>
Electricity consumed (Gigawatt-hours)	17 279	+2,3	+2,2	+3,5
Electricity imported (Gigawatt-hours)	266	-58,2	-28,1	-17,4
Electricity exported (Gigawatt-hours)	1 051	+67,4	+63,8	+35,7
Index of the physical volume of electricity production (2000=100)	111,3	+7,5	+6,2	+5,9

**Seasonally adjusted  
estimates**

	<b>September 2003</b>	<b>% change between August 2003 and September 2003</b>	<b>% change between April 2003 to June 2003 and July 2003 to September 2003</b>
Electricity consumed (Gigawatt-hours)	17 504	+0,5	+0,8
Electricity imported (Gigawatt-hours)	321	-19,5	-7,5
Electricity exported (Gigawatt-hours)	942	-0,9	+13,1
Index of the physical volume of electricity production (2000=100)	111,5	+0,9	+1,7

## Key findings as at the end of September 2003

### Consumption of electricity increases

*The consumption of electricity for the third quarter of 2003, after seasonal adjustment, increased by 0,8% (+428 Gigawatt-hours) compared with the second quarter of 2003. The consumption of electricity for September 2003 increased by 2,3% (+387 Gigawatt-hours) compared with September 2002. Furthermore, the consumption of electricity in South Africa for the first nine months of 2003 increased by 3,5% (+5 319 Gigawatt-hours) compared with the first nine months of 2002.*

### Production of electricity increases

*The production of electricity for the third quarter of 2003, after seasonal adjustment, increased by 1,7% (+990 Gigawatt-hours) compared with the second quarter of 2003. The production of electricity for September 2003 increased by 7,5% (+1 360 Gigawatt-hours) compared with September 2002. Furthermore, the production of electricity in South Africa for the first nine months of 2003 increased by 5,9% (+9 610 Gigawatt-hours) compared with the first nine months of 2002.*

### Import of electricity decreases

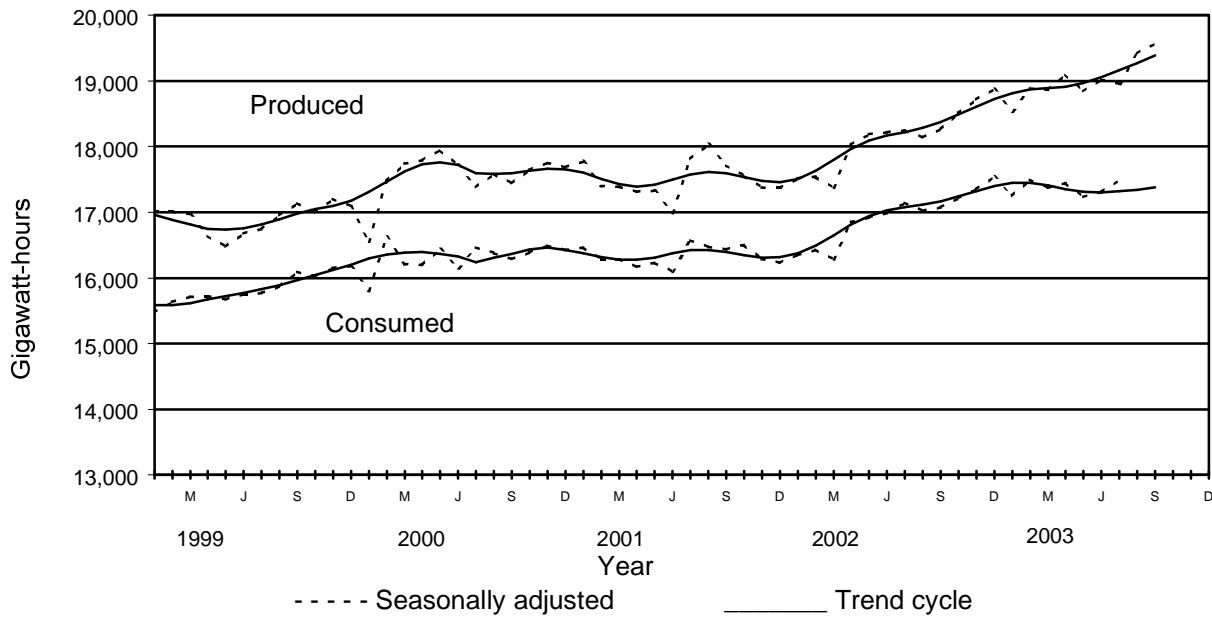
*The seasonally adjusted import of electricity for the third quarter of 2003 decreased by 7,5% (-128 Gigawatt-hours) compared with the second quarter of 2003. The import of electricity for September 2003 decreased by 58,2% (-371 Gigawatt-hours) compared with September 2002. The decrease of 58,2% was mainly due to refurbishment of the power plant, Cahora Bassa. Furthermore, the import of electricity in South Africa for the first nine months of 2003 decreased by 17,4% (-1 087 Gigawatt-hours) compared with the first nine months of 2002.*

### Export of electricity increases

*The seasonally adjusted export of electricity for the third quarter of 2003 increased by 13,1% (+324 Gigawatt-hours) compared with the second quarter of 2003. The export of electricity for September 2003 increased by 67,4% (+423 Gigawatt-hours) compared with September 2002. Furthermore, the export of electricity for the first nine months of 2003 increased by 35,7% (+1 824 Gigawatt-hours) compared with the first nine months of 2002. The large increase of 35,7% in export to neighbouring countries was mainly due to the dry weather conditions experienced in some of the countries.*

*Exports of electricity for the first nine months of 2003 exceeded the imports of electricity by 34,4% (+1 776 Gigawatt-hours). In comparison, during the first nine months of 2002, 18,2% (-1 135 Gigawatt-hours) less electricity was exported than imported.*

Figure 1 – Electricity consumed and produced in South Africa



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**P J Lehohla**  
 Statistician-General: Statistics South Africa

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**Notes**

<b>Forthcoming issues</b>	<b>Issue</b>	<b>Expected release date</b>
	October 2003	4 December 2003
	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.

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

<b>Month</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
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	
November	15 136	15 831	16 161	15 960	17 005	
December	14 563	15 184	15 395	15 224	16 440	
<b>Year</b>	<b>187 516</b>	<b>190 120</b>	<b>195 660</b>	<b>196 063</b>	<b>203 348</b>	

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

<b>Month</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
January	15 750	15 495	15 865	16 446	16 357	17 251
February	15 797	15 693	16 659	16 263	16 435	17 497
March	15 708	15 789	16 237	16 274	16 300	17 372
April	15 655	15 779	16 172	16 176	16 858	17 444
May	15 588	15 673	16 371	16 234	16 923	17 228
June	15 579	15 748	16 145	16 110	17 010	17 308
July	15 552	15 776	16 445	16 662	17 327	17 493
August	15 535	15 813	16 278	16 318	16 835	17 411
September	15 664	16 065	16 307	16 421	17 048	17 504
October	15 663	16 013	16 393	16 506	17 212	
November	15 493	16 169	16 497	16 301	17 361	
December	15 555	16 180	16 433	16 250	17 557	

\* Revised

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

<b>Month</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
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	
November	94,1	96,0	99,1	97,4	104,9	
December	89,8	90,8	93,8	92,1	100,0	
<b>Year</b>	<b>97,5</b>	<b>96,4</b>	<b>100,0</b>	<b>99,7</b>	<b>103,3</b>	

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

<b>Month</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
January	99,3	96,9	94,7	101,2	99,9	105,8
February	99,4	97,3	100,0	99,1	100,0	107,5
March	98,2	97,2	101,2	98,9	99,0	107,3
April	98,7	95,0	101,1	98,5	102,7	108,7
May	98,4	94,2	102,1	98,8	103,7	107,4
June	97,9	94,8	100,7	96,9	104,0	108,4
July	97,5	95,6	99,1	102,1	104,9	108,1
August	93,6	96,1	99,6	101,7	102,1	110,5
September	97,1	97,3	99,4	100,7	103,6	111,5
October	97,6	96,7	100,4	100,0	105,5	
November	96,2	98,0	100,9	99,0	106,6	
December	96,2	97,5	100,8	99,0	107,5	

\* Revised



**Table 5 - Total volume of electricity imported: 1998 to 2003****Gigawatt-hours**

<b>Month</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
January	11	185	683	569	670	705
February	52	201	529	488	643	637
March	159	302	6	665	783	706
April	176	682	24	774	733	547
May	133	719	20	629	658	569
June	187	654	2	797	704	518
July	141	515	599	479	702	792
August	667	613	476	282	721	424
September	203	679	495	507	637	266
October	161	688	506	713	454	
November	273	644	601	636	477	
December	212	791	778	708	691	
<b>Year</b>	<b>2 375</b>	<b>6 673</b>	<b>4 719</b>	<b>7 247</b>	<b>7 873</b>	

**Table 6 - Total volume of electricity exported: 1998 to 2003****Gigawatt-hours**

<b>Month</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>
January	330	346	197	616	558	578
February	360	267	169	470	478	508
March	325	248	196	498	529	607
April	367	217	155	463	525	619
May	388	318	213	508	578	805
June	429	347	193	496	601	798
July	472	381	363	543	614	944
August	350	465	389	569	605	1 030
September	343	480	458	581	628	1 051
October	400	440	540	630	626	
November	465	432	525	598	600	
December	303	325	609	547	608	
<b>Year</b>	<b>4 532</b>	<b>4 266</b>	<b>4 007</b>	<b>6 519</b>	<b>6 950</b>	

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

Gigawatt-hours						
Description	September 2002	August 2003 *	September 2003	January 2002 to September 2002	January 2003 to September 2003	Percentage change between January 2002 to September 2002 and January 2003 to September 2003
<b>Total - All Producers</b>						
Electricity produced	18 175	20 633	19 535	162 724	172 334	+ 5,9
Purchased outside South Africa (import)	637	424	266	6 251	5 164	- 17,4
Consumed in power stations and auxilliary systems	1 293	1 565	1 471	11 482	12 858	+ 12,0
Sold outside South Africa (export)	628	1 030	1 051	5 116	6 940	+ 35,7
Electricity consumed in South Africa <sup>1/</sup>	16 892	18 462	17 279	152 380	157 699	+ 3,5
<b>Eskom</b>						
Electricity produced	17 442	19 789	18 801	156 402	165 900	+ 6,1
Purchased outside South Africa (import)	637	424	266	6 251	5 164	- 17,4
Consumed in power stations and auxilliary systems	1 212	1 461	1 403	10 687	12 158	+ 13,8
Sold outside South Africa (export)	628	1 030	1 051	5 116	6 940	+ 35,7
Electricity consumed in South Africa <sup>1/</sup>	16 240	17 722	16 613	146 854	151 966	+ 3,5

<sup>1/</sup> As indicated by electricity available for distribution

\* Revised

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

<b>Month</b>	<b>Western Cape</b>	<b>Eastern Cape</b>	<b>Northern Cape</b>	<b>Free State</b>	<b>North West</b>
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					
November					
December					
<b>Year to date</b>	<b>15 438</b>	<b>5 229</b>	<b>3 192</b>	<b>7 303</b>	<b>20 808</b>

<b>Month</b>	<b>KwaZulu-Natal</b>	<b>Mpumalanga</b>	<b>Gauteng</b>	<b>Limpopo</b>	<b>Total RSA</b>
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					
November					
December					
<b>Year to date</b>	<b>29 307</b>	<b>18 877</b>	<b>39 797</b>	<b>7 005</b>	<b>147 087</b>

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

## 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, 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.

<b>Monthly production indices</b>	<b>9</b>	The calculation of the monthly production indices is based on the number of electricity units produced.
<b>Benchmarking</b>	<b>10</b>	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.
	<b>11</b>	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.
<b>Seasonal adjustment</b>	<b>12</b>	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.
<b>Trend cycle</b>	<b>13</b>	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.
<b>Related publications</b>	<b>14</b>	Users may also wish to refer to the following publications which are available from Stats SA - <ul style="list-style-type: none"> <li>• <i>Bulletin of Statistics.</i></li> <li>• <i>SA Statistics.</i></li> </ul>
<b>Unpublished statistics</b>	<b>15</b>	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.
<b>Rounding-off of figures</b>	<b>16</b>	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.

<b>Pre-release policy</b>	<b>17</b>	Stats SA pre-release policy may be inspected at its Website, <a href="http://www.statssa.gov.za">www.statssa.gov.za</a>
<b>Response rate</b>		The response rate for the survey on the generation and consumption of electricity for September 2003 was 100%.

**Glossary**

<b>Electricity undertaking</b>	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.
<b>Establishment (branch)</b>	An establishment (branch) is defined as the smallest economic unit, which operates as a separate entity for which comprehensive financial records are kept.
<b>Index of physical volume of electricity production</b>	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.
<b>Industry</b>	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.
<b>Unit of electricity</b>	One unit of electricity is equal to 1 kilowatt-hour (kWh). One gigawatt-hour (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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