



# Generation and consumption of electricity

November 2002

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## **Key findings as at the end of November 2002**

### **Consumption of electricity increases**

*The consumption of electricity for the three months ended November 2002, after seasonal adjustment, increased by 0,5% (+240 Gigawatt-hours) compared with the previous three months. The consumption of electricity for November 2002 increased by 6,5% (+1 044 Gigawatt-hours) compared with November 2001. Furthermore, the consumption of electricity in South Africa for the first eleven months of 2002 increased by 3,4% (+6 068 Gigawatt-hours) compared with the first eleven months of 2001.*

### **Production of electricity increases**

*The production of electricity for the three months ended November 2002, after seasonal adjustment, increased by 1,3% (+681 Gigawatt-hours) compared with the previous three months. The production of electricity for November 2002 increased by 7,7% (+1 324 Gigawatt-hours) compared with November 2001. Furthermore, the production of electricity in South Africa for the first eleven months of 2002 increased by 3,2% (+6 221 Gigawatt-hours) compared with the first eleven months of 2001.*

### **Import of electricity decreases**

*The seasonally adjusted import of electricity from neighbouring countries for the three months ended November 2002 decreased by 30,5% (-672 Gigawatt-hours) compared with the previous three months. The import of electricity for November 2002 decreased by 25,0% (-159 Gigawatt-hours) compared with November 2001. However, the import of electricity in South Africa for the first eleven months of 2002 increased by 9,8% (+643 Gigawatt-hours) compared with the first eleven months of 2001.*

### **Export of electricity decreases**

*The seasonally adjusted export of electricity for the three months ended November 2002 decreased by 11,3% (-200 Gigawatt-hours) compared with the previous three months. However, the export of electricity for November 2002 increased by 0,3% (+2 Gigawatt-hours) compared with November 2001. The export of electricity for the first eleven months of 2002 increased by 6,2% (+370 Gigawatt-hours) compared with the first eleven months of 2001.*

**Key figures as at the end of November 2002****Actual estimates**

	<b>November 2002</b>	<b>% change between November 2001 and November 2002</b>	<b>% change between September 2001 to November 2001 and September 2002 to November 2002</b>	<b>% change between January 2001 to November 2001 and January 2002 to November 2002</b>
Electricity consumed (Gigawatt-hours)	17,004	+6.5	+4.9	+3.4
Electricity imported (Gigawatt-hours)	477	-25.0	-15.5	+9.8
Electricity exported (Gigawatt-hours)	600	+0.3	+2.5	+6.2
Index of the physical volume of electricity production (2000=100)	104.9	+7.7	+5.4	+3.2

**Seasonally adjusted  
estimates**

	<b>November 2002</b>	<b>% change between October 2002 and November 2002</b>	<b>% change between June 2002 to August 2002 and September 2002 to November 2002</b>
Electricity consumed (Gigawatt-hours)	17,309	+0.7	+0.5
Electricity imported (Gigawatt-hours)	440	-4.8	-30.5
Electricity exported (Gigawatt-hours)	515	+0.6	-11.3
Index of the physical volume of electricity production (2000=100)	106.5	+1.0	+1.3

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## Notes

<b>Forthcoming issues</b>	<b>Issue</b>	<b>Expected release date</b>
	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

<b>Introduction</b>	<b>1</b>	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.
	<b>2</b>	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 in the October 2001 Statistical release P4141 - Generation and Consumption of Electricity on 6 December 2001.
	<b>3</b>	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.
<b>Scope of the survey</b>	<b>4</b>	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.
<b>Classification</b>	<b>5</b>	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.
<b>Statistical unit</b>	<b>6</b>	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).
<b>Survey methodology and design</b>	<b>7</b>	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.
	<b>8</b>	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 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.

	<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 - Generation and Consumption of Electricity 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 behaviour.
<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>• Bulletin of Statistics.</li> <li>• SA Statistics.</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 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:
	<b>18</b>	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.
	<b>19</b>	Stats SA pre-release policy may be inspected at its Website, <a href="http://www.statssa.gov.za">www.statssa.gov.za</a>

## Technical notes

**Response rates** The response rate for the survey on the generation and consumption of electricity for November 2002 is 95.5%.

# 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-hours (gWh) of electricity is equal to one million kilowatt-hours.

**Table 1 - Total volume of electricity consumed in South Africa (SA): 1997 to 2002****Gigawatt-hours**

<b>Month</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
January	15,009	15,403	15,153	15,512	16,064	15,968
February	14,088	14,459	14,360	15,224	14,871	15,005
March	15,155	15,714	15,791	16,225	16,320	16,353
April	15,247	14,923	15,063	15,399	15,515	16,172
May	16,423	16,261	16,327	17,064	16,929	17,642
June	16,474	16,280	16,393	16,818	16,788	17,763
July	17,187	16,867	17,051	17,759	18,021	18,743
August	16,303	16,417	16,708	17,214	17,300	17,842
September	15,503	15,536	15,937	16,180	16,277	16,892
October	16,005	15,957	16,322	16,709	16,794	17,523
November	15,235	15,136	15,831	16,161	15,960	17,004
December	14,878	14,563	15,184	15,395	15,224	
<b>Year</b>	<b>187,507</b>	<b>187,516</b>	<b>190,120</b>	<b>195,660</b>	<b>196,063</b>	

**Table 2 - Seasonally adjusted total volume of electricity consumed in SA: 1997 to 2002****Gigawatt-hours**

<b>Month</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
January	15,316	15,735	15,479	15,839	16,411	16,306
February	15,405	15,801	15,705	16,666	16,275	16,418
March	15,106	15,691	15,765	16,202	16,239	16,248
April	16,024	15,647	15,767	16,160	16,164	16,851
May	15,795	15,615	15,704	16,403	16,256	16,922
June	15,691	15,572	15,737	16,135	16,109	17,029
July	15,781	15,537	15,753	16,397	16,606	17,271
August	15,383	15,562	15,873	16,373	16,469	17,023
September	15,703	15,664	16,068	16,294	16,428	17,066
October	15,782	15,666	16,017	16,389	16,480	17,188
November	15,625	15,493	16,164	16,471	16,250	17,309
December	15,899	15,547	16,170	16,459	16,290	



**Table 3 - Indices of the physical volume of electricity production: 1997 to 2002****Base: (2000=100)**

<b>Month</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
January	95.9	97.1	94.7	92.5	98.6	97.1
February	89.9	91.1	89.0	91.2	90.1	90.5
March	97.0	98.0	97.0	100.9	98.5	98.5
April	97.1	93.5	90.1	95.9	93.6	97.8
May	104.4	102.2	98.0	106.3	103.0	108.1
June	104.8	102.2	98.9	104.9	101.1	108.6
July	109.9	106.2	104.0	107.8	111.1	114.2
August	104.5	99.1	101.8	105.5	108.0	108.5
September	100.0	96.6	96.9	99.1	100.5	103.5
October	102.6	99.8	99.1	103.1	102.7	108.3
November	97.4	94.1	96.0	99.1	97.4	104.9
December	94.6	89.8	90.8	93.8	92.1	
<b>Year</b>	<b>99.8</b>	<b>97.5</b>	<b>96.4</b>	<b>100.0</b>	<b>99.7</b>	

**Table 4 - Seasonally adjusted indices of the physical volume of electricity production: 1997 to 2002****Base: (2000=100)**

<b>Month</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>
January	98.1	99.3	96.8	94.5	100.9	99.3
February	98.2	99.4	97.3	99.9	99.0	99.6
March	97.2	98.2	97.1	101.0	98.6	98.6
April	102.5	98.7	95.0	101.2	98.7	103.1
May	100.8	98.4	94.2	102.1	98.8	103.6
June	100.0	97.9	94.9	100.7	97.0	104.2
July	100.7	97.4	95.3	98.6	101.6	104.3
August	98.6	93.7	96.5	100.2	102.8	103.3
September	100.7	97.1	97.3	99.4	100.9	104.0
October	100.7	97.6	96.7	100.4	99.9	105.4
November	99.6	96.2	98.0	100.9	98.9	106.5
December	101.1	96.2	97.5	101.0	99.3	

**Table 5 - Total volume of electricity imported: 1998 to 2002**

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

**Table 6 - Total volume of electricity exported: 1998 to 2002**

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

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

**(Gigawatt-hours)**

Description	November 2001	October 2002	November 2002	January 2001 to November 2001	January 2002 to November 2002	Percentage change between January 2001 to November 2001 and January 2002 to November 2002
<b>Total - All Producers</b>						
Electricity produced	17,096	19,012	18,420	193,935	200,156	+ 3.2
Purchased outside South Africa (import)	636	454	477	6,539	7,182	+ 9.8
Consumed in power stations and auxilliary systems	1,174	1,317	1,293	13,665	14,092	+ 3.1
Sold outside South Africa (export)	598	626	600	5,972	6,342	+ 6.2
Electricity consumed in South Africa <sup>1/</sup>	15,960	17,523	17,004	180,839	186,907	+ 3.4
<b>Eskom</b>						
Electricity produced	16,457	18,311	17,767	185,232	192,480	+ 3.9
Purchased outside South Africa (import)	636	454	477	6,539	7,182	+ 9.8
Consumed in power stations and auxilliary systems	1,089	1,230	1,224	12,598	13,141	+ 4.3
Sold outside South Africa (export)	598	626	600	5,972	6,342	+ 6.2
Electricity consumed in South Africa <sup>1/</sup>	15,406	16,908	16,420	173,200	180,182	+ 4.0

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

**Table 8 - Electricity distributed by Eskom according to province for the year 2002  
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	1,565	576	373	749	2,105
February	1,539	579	355	707	1,933
March	1,665	613	365	769	2,136
April	1,522	566	310	741	2,137
May	1,597	618	316	821	2,306
June	1,656	615	318	811	2,254
July	1,760	635	347	853	2,331
August	1,763	592	355	813	2,323
September	1,632	552	359	784	2,199
October	1,690	586	398	816	2,342
November	1,659	568	352	796	2,286
December					
<b>Year</b>	<b>18,048</b>	<b>6,500</b>	<b>3,848</b>	<b>8,660</b>	<b>24,352</b>

<b>Month</b>	<b>KwaZulu-Natal</b>	<b>Mpumalanga</b>	<b>Gauteng</b>	<b>Limpopo</b>	<b>Total RSA</b>
January	3,054	2,083	4,012	675	<b>15,192</b>
February	2,844	1,898	3,795	618	<b>14,268</b>
March	3,119	2,125	4,195	703	<b>15,690</b>
April	3,027	2,068	4,005	651	<b>15,027</b>
May	3,241	2,250	4,591	730	<b>16,470</b>
June	3,140	2,130	4,841	689	<b>16,454</b>
July	3,262	2,220	5,267	747	<b>17,422</b>
August	3,234	2,191	4,621	759	<b>16,651</b>
September	3,111	2,132	4,250	744	<b>15,763</b>
October	3,260	2,156	4,368	776	<b>16,393</b>
November	3,166	2,123	4,206	737	<b>15,894</b>
December					
<b>Year</b>	<b>34,458</b>	<b>23,376</b>	<b>48,151</b>	<b>7,829</b>	<b>175,222</b>

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