

Generation and consumption of electricity

December 2002

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Key figures as at the end of December 2002

Actual estimates

	December 2002	% change between December 2001 and December 2002	% change between October 2001 to December 2001 and October 2002 to December 2002	% change between January 2001 to December 2001 and January 2002 to December 2002
Electricity consumed (Gigawatt-hours)	16 440	+8,0	+6,2	+3,7
Electricity imported (Gigawatt-hours)	691	-2,4	-21,1	+8,6
Electricity exported (Gigawatt-hours)	608	+11,2	+3,3	+6,6
Index of the physical volume of electricity production (2000=100)	100,0	+8,6	+7,2	+3,6

Seasonally adjusted estimates

	December 2002	% change between November 2002 and December 2002	% change between July 2002 to September 2002 and October 2002 to December 2002
Electricity consumed (Gigawatt-hours)	17 544	+1,1	+1,5
Electricity imported (Gigawatt-hours)	509	+13,4	-32,2
Electricity exported (Gigawatt-hours)	549	+5,2	-4,5
Index of the physical volume of electricity production (2000=100)	107,6	+0,8	+2,6

Key findings as at the end of December 2002

Consumption of electricity higher than a year ago

The consumption of electricity in South Africa for the year 2002, increased by 3,7% (+7 285 Gigawatt-hours) compared with the year 2001. The consumption of electricity for December 2002 increased by 8,0% (+1 216 Gigawatt-hours) compared with December 2001. Furthermore, the consumption of electricity for the fourth quarter of the year 2002, after seasonal adjustments, increased by 1,5% (+756 Gigawatt-hours) compared with the third quarter of the year 2002.

Production of electricity higher than a year ago

The production of electricity in South Africa for the year 2002 increased by 3,6% (+7 612 Gigawatt-hours) compared with the year 2001. The production of electricity for December 2002 increased by 8,6% (+1 390 Gigawatt-hours) compared with December 2001. Furthermore, the production of electricity for the fourth quarter of the year 2002, after seasonal adjustment, increased by 2,6% (+ 1 415 Gigawatt-hours) compared with the third quarter of the year 2002.

Import of electricity higher than a year ago

The import of electricity in South Africa for the year 2002 increased by 8,6% (+626 Gigawatt-hours) compared with the year 2001. However, the import of electricity for December 2002 decreased by 2,4% (-17 Gigawatt-hours) compared with December 2001. The seasonally adjusted import of electricity from neighbouring countries for the fourth quarter of the year 2002 decreased by 32,2% (- 681 Gigawatt-hours) compared with the third quarter of the year 2002.

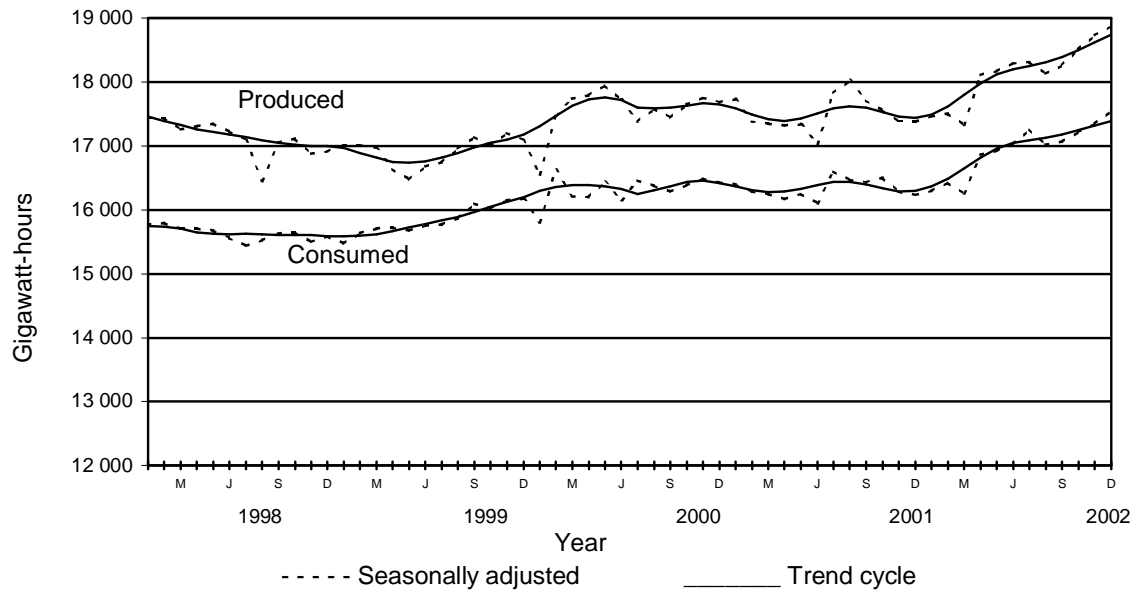
Export of electricity higher than a year ago

The export of electricity for the year 2002 increased by 6,6% (+431 Gigawatt-hours) compared with the year 2001. The export of electricity for December 2002 increased by 11,2% (+61 Gigawatt-hours) compared with December 2001. The seasonally adjusted export of electricity for the fourth quarter of the year 2002 decreased by 4,5% (-74 Gigawatt-hours) compared with the third quarter of the year 2002.

Provincial distribution of electricity (Eskom)

During 2002, Gauteng province received the largest proportion (27,3% or 52 007 Gigawatt-hours) of electricity distributed by Eskom, followed by the KwaZulu-Natal province (19,7% or 37 269 Gigawatt-hours) and the North West province (14,0% or 26 601 Gigawatt-hours). Only 2,2% (4 175 Gigawatt-hours) were distributed to the Northern Cape province.

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

Forthcoming issues	Issue	Expected release date
	January 2003	6 March 2003
	February 2003	3 April 2003
	March 2003	8 May 2003
	April 2003	5 June 2003
	May 2003	3 July 2003
	June 2003	7 August 2003
	July 2003	4 September 2003
	August 2003	2 October 2003
	September 2003	6 November 2003
	October 2003	4 December 2003
	November 2003	8 January 2004
	December 2003	5 February 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): 1997 to 2002

Gigawatt-hours						
Month	1997	1998	1999	2000	2001	2002
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	17 005
December	14 878	14 563	15 184	15 395	15 224	16 440
Year	187 507	187 516	190 120	195 660	196 063	203 348

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

Gigawatt-hours						
Month	1997	1998	1999	2000	2001	2002
January	15 309	15 726	15 467	15 830	16 398	16 295
February	15 422	15 811	15 711	16 669	16 280	16 425
March	15 106	15 692	15 770	16 205	16 246	16 254
April	16 023	15 649	15 769	16 161	16 168	16 858
May	15 792	15 612	15 698	16 396	16 252	16 920
June	15 689	15 569	15 733	16 128	16 107	17 026
July	15 781	15 539	15 752	16 392	16 600	17 262
August	15 382	15 562	15 870	16 371	16 467	17 020
September	15 701	15 663	16 067	16 298	16 431	17 071
October	15 784	15 668	16 026	16 405	16 506	17 216
November	15 624	15 493	16 173	16 494	16 284	17 349
December	15 903	15 551	16 178	16 425	16 229	17 544

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

Month	1997	1998	1999	2000	2001	2002
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	100,0
Year	99,8	97,5	96,4	100,0	99,7	103,3

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

Month	1997	1998	1999	2000	2001	2002
January	98,1	99,2	96,8	94,5	100,9	99,4
February	98,2	99,4	97,3	99,9	99,1	99,7
March	97,2	98,2	97,1	101,0	98,6	98,6
April	102,5	98,7	95,0	101,1	98,7	103,1
May	100,7	98,4	94,2	102,1	98,8	103,6
June	100,0	97,9	94,9	100,7	97,0	104,1
July	100,7	97,4	95,3	98,6	101,5	104,3
August	98,6	93,7	96,5	100,2	102,7	103,3
September	100,7	97,1	97,3	99,4	100,9	104,0
October	100,7	97,6	96,7	100,4	100,0	105,5
November	99,6	96,2	98,1	101,0	99,1	106,7
December	101,1	96,3	97,6	100,8	99,0	107,6

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

Gigawatt-hours					
Month	1998	1999	2000	2001	2002
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	691
Year	2 375	6 673	4 719	7 247	7 873

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

Gigawatt-hours					
Month	1998	1999	2000	2001	2002
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	608
Year	4 532	4 266	4 007	6 519	6 950

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

Gigawatt-hours

Description	December 2001	November 2002	December 2002	January 2001 to December 2001	January 2002 to December 2002	Percentage change between January 2001 to December 2001 and January 2002 to December 2002
Total - All Producers						
Electricity produced	16 165	18 421	17 555	210 100	217 712	+ 3,6
Purchased outside South Africa (import)	708	477	691	7 247	7 873	+ 8,6
Consumed in power stations and auxilliary systems	1 102	1 293	1 197	14 767	15 289	+ 3,5
Sold outside South Africa (export)	547	600	608	6 519	6 950	+ 6,6
Electricity consumed in South Africa ^{1/}	15 224	17 005	16 440	196 063	203 348	+ 3,7
Eskom						
Electricity produced	15 526	17 767	16 922	200 758	209 402	+ 4,3
Purchased outside South Africa (import)	708	477	691	7 247	7 873	+ 8,6
Consumed in power stations and auxilliary systems	1 024	1 224	1 128	13 622	14 269	+ 4,7
Sold outside South Africa (export)	547	600	608	6 519	6 950	+ 6,6
Electricity consumed in South Africa ^{1/}	14 663	16 420	15 876	187 863	196 058	+ 4,4

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

**Table 8 - Electricity distributed by Eskom according to province for the year 2002
Gigawatt-hours**

Month	Western Cape	Eastern Cape	Northern Cape	Free State	North West
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	1 652	492	327	745	2 249
Year	19 700	6 992	4 175	9 405	26 601

Month	KwaZulu-Natal	Mpumalanga	Gauteng	Limpopo	Total RSA
January	3 054	2 083	4 012	675	15 192
February	2 844	1 898	3 795	618	14 268
March	3 119	2 125	4 195	703	15 690
April	3 027	2 068	4 005	651	15 027
May	3 241	2 250	4 591	730	16 470
June	3 140	2 130	4 841	689	16 454
July	3 262	2 220	5 267	747	17 422
August	3 234	2 191	4 621	759	16 651
September	3 111	2 132	4 250	744	15 763
October	3 260	2 156	4 368	776	16 392
November	3 166	2 123	4 206	737	15 893
December	3 171	2 142	3 856	742	15 376
Year	37 629	25 518	52 007	8 571	190 598

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. |

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 2002 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-hour (gWh) of electricity is equal to one million kilowatt-hours.

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Enquiries

Telephone number: (012) 310 8600/8390/8351/8496/4892/8095 (user enquiries)
 (012) 310 8228/8984 (technical enquiries)
 (012) 310 8161 (publications)
 (012) 310 8490 (library)

Fax number: (012) 310 8332

e-mail: Corrieb@statssa.gov.za
Mosesmn@statssa.gov.za

Postal address: Private Bag X44, Pretoria, 0001