



AFRICAN UNION



ENERGY

AFRICAN ENERGY COMMISSION
COMMISSION AFRICAINE DE L'ENERGIE

KEY AFRICA ENERGY STATISTICS

EDITION
2019



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African Union
Algiers, Algeria
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First printing 2012

Title: Key Africa Energy Statistics

Language: English

Available languages: English and French

ISBN: 978-9931-9593-0-4

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Foreword

The African Energy Commission (AFREC) is a specialized organ of the African Union (AU), in charge of coordinating, harmonizing, protecting, conserving, rational exploitation, commercializing and integrating energy resources on the African continent.

The implementation of energy programmes by AFREC is guided by five pillars: African Energy Information System (AEIS), Bioenergy, African Energy Efficiency, Oil and Gas and African Energy Sector Transition programme. The Commission remains the core African Union (AU) institution to provide evidence-based information in the form of statistics, ensuring that the African continent develops and prosper in its quest to advance energy programmes, which will drive sustainable use of energy resources.

Energy statistics keeps Member States, African citizens, energy policy makers and experts informed about what is happening on the African continent, in terms of energy consumption, demand and sustainable development. They facilitate the creation of new knowledge, to understand the frontier of the challenges faced collectively, provide a platform for debate and employ correct analyses, whilst as African citizens, navigate resourcefully, the common difficulties that may lead the Continent in an unsustainable energy sector.

In this 2019 Key Africa Energy Statistics (KAES) edition, AFREC provides a comprehensive insight on the energy production, supply and consumption in various regions of and the Continent. One of the highlights in this publication is the Total Primary of Energy Supply (TPES) by fuel and by region, indicating significant changes compared to the statistics since the inception of KAES report data of 2000.

For instance, it emerged that the TPES in Africa for the year 2000 was dominated by the Southern African Region. In 2017, West Africa dominated the TPES, as a result of high production of oil, gas and biofuel from Nigeria. Even so, biofuels continue to remain the highest TPES share of energy on the continent.

We hope the array of datasets presented herein, offers critical guidance in producing credible analyses, predictions and information, to ensure policy and decision maker's act towards sustainable actions which will provide access to affordable, reliable, environmental friendly and energy for all and the "Africa We Want".

I would therefore like to thank the AFREC team, energy focal points from various energy Ministries/Departments in the AU Member States, for their dedication to collate and provide credible data, so that it is made available in everyone's 'backyard', for better understanding, consumption and attainment of the AU Agenda 2063, the Sustainable Development Goals (SDGs) and the implementation of the Paris Agreement on Climate Change.

Mr. Rashid Ali Abdallah
Executive Director, Africa Energy Commission (AFREC)

Abbreviations

bcm	Billion cubic meters
Gcal	Giga calorie
GCV	Gross calorific value
GW	Gigawatt
GWh	Gigawatt hour
kb/cd	Thousand barrels per calendar day
kcal	Kilocalorie
kg	Kilogram
kJ	Kilojoule
kWh	Kilowatt hour
MBtu	Million British thermal units
Mt	Million tons
Mtoe	Million tons of oil equivalent
t	Metric ton=tonne=1000kg
kt	Kilotonnes
TJ	Tera joule
toe	Ton of oil equivalent=10 ⁷ kcal
TWh	Terawatt hour

List of Participating African Countries

Algeria	Madagascar
Angola	Malawi
Benin	Mali
Botswana	Mauritania
Burkina Faso	Mauritius
Burundi	Morocco
Cameroon	Mozambique
Cape Verde	Namibia
Central African Republic	Niger
Chad	Nigeria
Comoros	Rwanda
Congo, Rep.	Saharawi Republic
Cote d'Ivoire	Somalia
Djibouti	São Tome & Principe
Democratic Republic of the Congo	Senegal
Egypt	Seychelles
Equatorial Guinea	Sierra Leone
Eritrea	South Africa
Ethiopia	South Sudan
Gabon	Sudan
Gambia, The	Kingdom of Eswatini
Ghana	Tanzania
Guinea	Togo
Guinea Bissau	Tunisia
Kenya	Uganda
Lesotho	Zambia
Liberia	Zimbabwe
Libya	

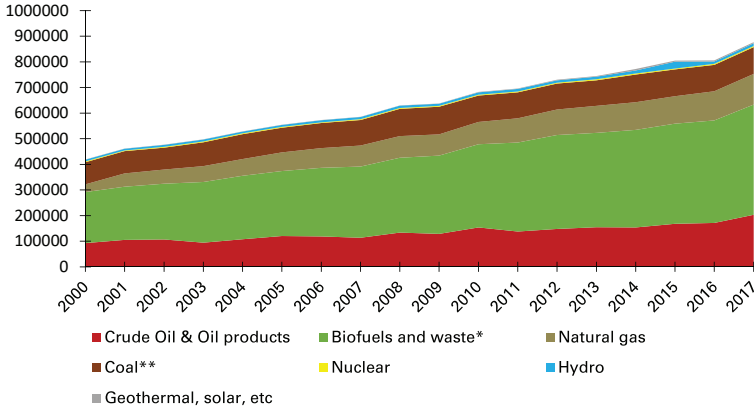
Table of Contents

Abbreviations	3
List of Participating African Countries	4
Supply	6
Transformation	20
Consumption	34
Energy Balance Tables	40
Selected Energy Indicators	44
Conversion Factors	48
Glossary	49

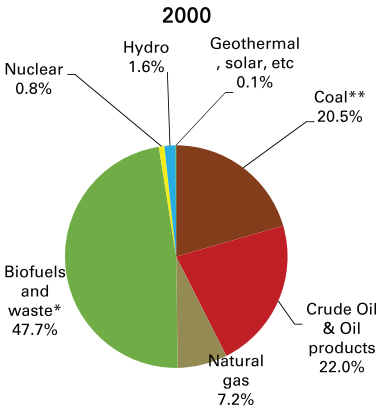
SUPPLY

TOTAL PRIMARY ENERGY SUPPLY BY FUEL

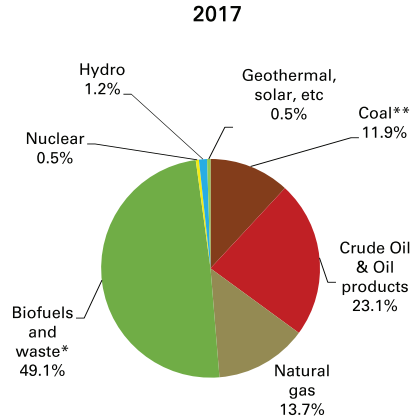
Total Primary Energy Supply (TPES) from 2000 to 2017 by fuel (ktoe)



2000 and 2017 Fuel Shares of TPES



199 695 ktoe



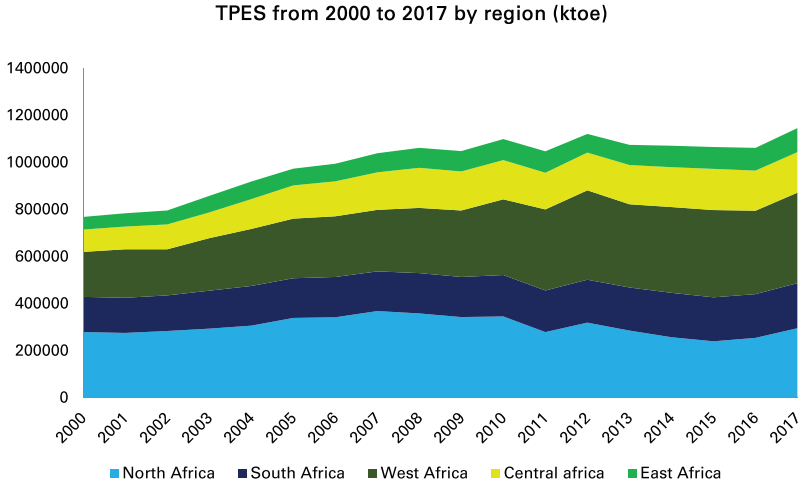
430 496 ktoe

* Includes firewood, charcoal, biogas, agro residues and waste and others biomass

** Includes steam coal, coking coal, lignite and recovered coal

Sources: AFREC, Africa Energy Database, 2019

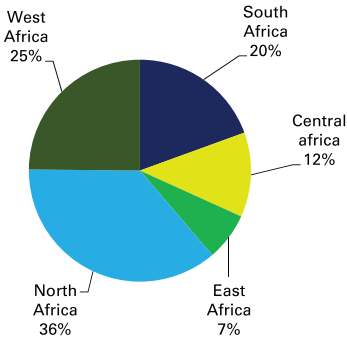
TOTAL PRIMARY ENERGY SUPPLY BY REGION



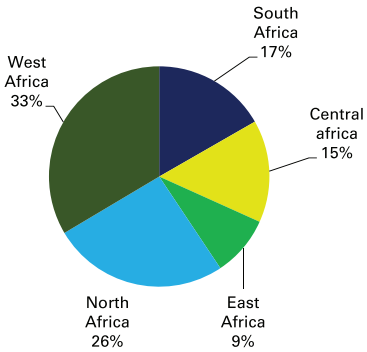
2000 and 2017 Regional Shares of TPES

2000

2017



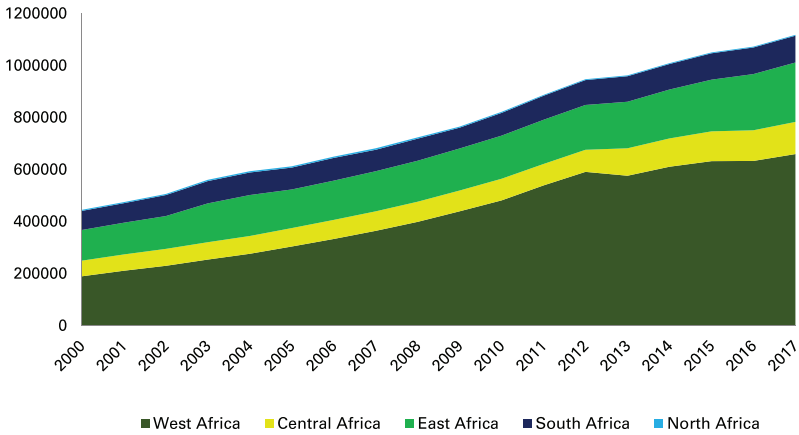
134 290 ktoe



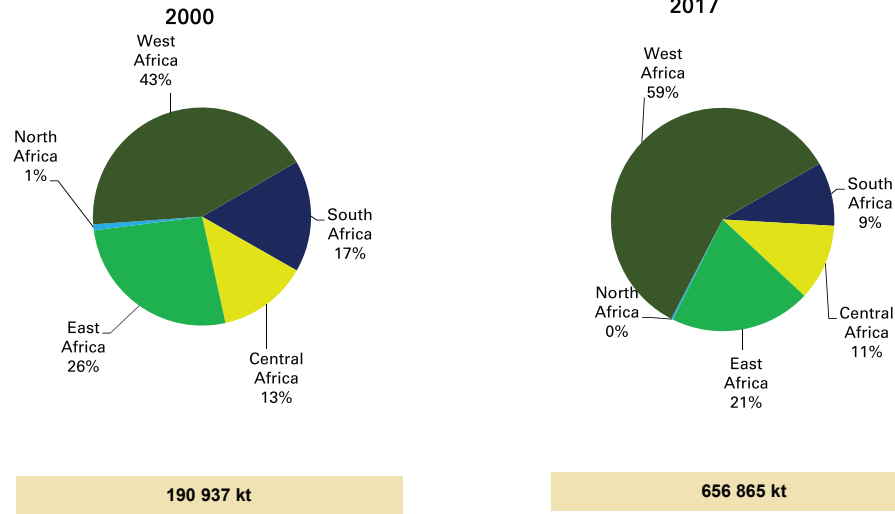
288 644 ktoe

FIREWOOD PRODUCTION

Firewood Production from 2000 to 2017 by region (kt)



2000 and 2017 Regional Shares of Firewood Production

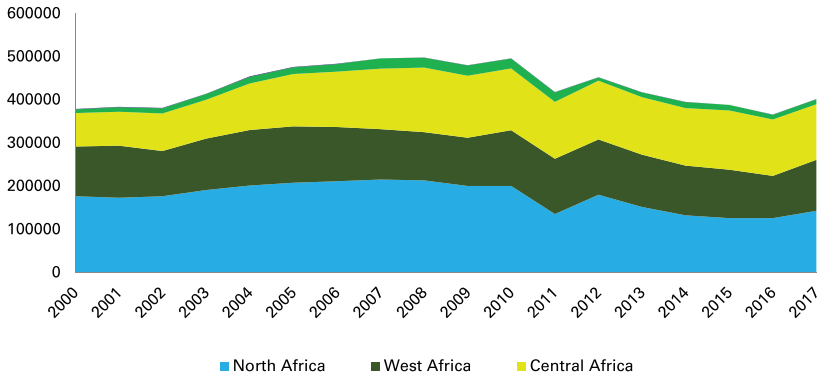


Producers of firewood from 2017

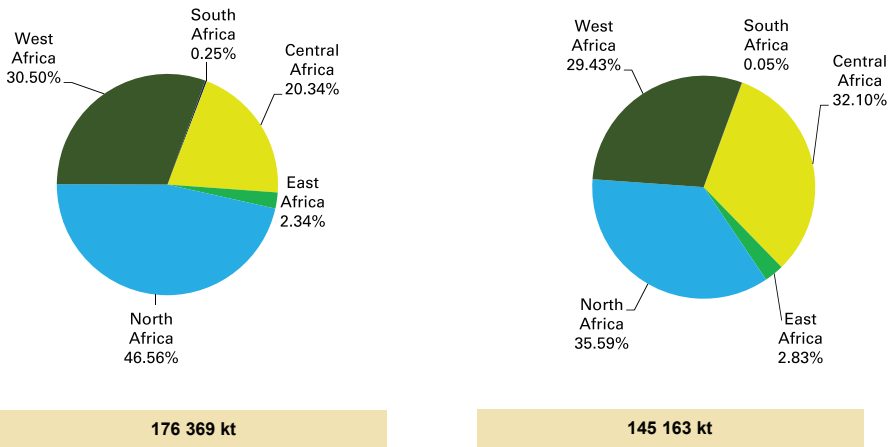
Producer	kt	Producer	kt
1. Nigeria	546 848	26. Congo	5 563
2. Ethiopia	102 488	27. Niger	5 381
3. DR Congo	88 575	28. Cameroon	4 843
4. Uganda	36 813	29. Rwanda	4 476
5. Kenya	35 017	30. Liberia	4 276
6. Tanzania	22 111	31. Angola	4 154
7. Sudan	20 324	32. Namibia	3 042
8. Côte d'Ivoire	19 010	33. Tunisia	3 001
9. Zambia	18 975	34. Central Africa	2 890
10. Mozambique	18 744	35. Mauritania	2 459
11. South Africa	17 140	36. Lesotho	2 394
12. Zimbabwe	17 032	37. Senegal	1 509
13. Madagascar	16 656	38. Guinea-Bissau	1 410
14. Guinea	15 818	39. Eritrea	1 392
15. Burkina Faso	14 095	40. Eswatini	1 365
16. Ghana	12 478	41. Gambia	1 359
17. Togo	10 174	Other Africa	3 978
18. Mali	9 899	Africa	1 118 663
19. Somalia	8 612		
20. Sierra Leone	8 167		
21. Benin	7 531		
22. Malawi	6 863		
23. Libya	5 946		
24. Chad	5 876		
25. Burundi	5 795		

CRUDE OIL PRODUCTION

Crude Oil* Production from 2 000 to 2 017 by region (kt)



2000 and 2017 Regional Shares of Crude Oil* Production



* Include crude oil, NGL, additives and other hydrocarbons

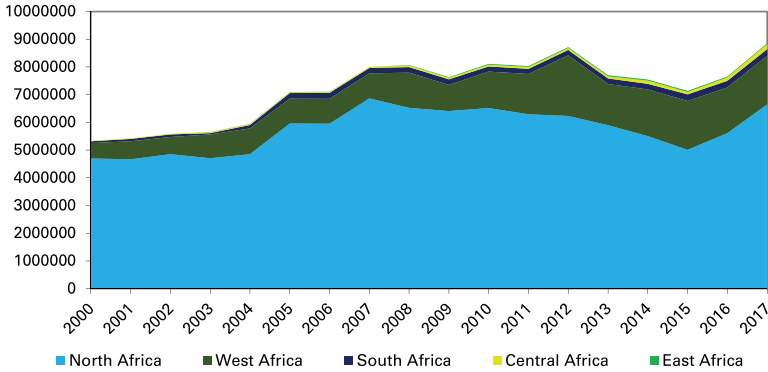
Producers, Net Exporters and Net Importers of Crude Oil* from 2017

Producers			kt	Net Exporters		kt	Net Importers		kt
1.	Nigeria	106 536		1.	Nigeria	103 340	1.	South Africa	23 701
2.	Angola	82 077		2.	Angola	76 255	2.	Côte d'Ivoire	1 459
3.	Algeria	66 667		3.	Libya	33 089	3.	Senegal	1 172
4.	Libya	41 211		4.	Algeria	28 655	4.	Kenya	750
5.	Egypt	32 874		5.	Congo	11 796	5.	Zambia	520
6.	Congo	14 919		6.	Equatorial Guinea	11 305	6.	Sudan	339
7.	Equatorial Guinea	11 297		7.	Egypt	9 742	Africa		27 941
8.	Gabon	10 014		8.	Gabon	9 337			
9.	Ghana	8 718		9.	Ghana	8 228			
10.	South Sudan	6 450		10.	South Sudan	6 380			
11.	Chad	5 661		11.	Chad	5 136			
12.	Soudan	4 918		12.	Cameroon	2 798			
13.	Cameroon	3 894		13.	Tunisia	1 024			
14.	Tunisia	2 058		14.	DR Congo	984			
15.	Côte d'Ivoire	1 631		15.	Mauritania	179			
16.	DR Congo	946				308			
17.	Niger	908				247			
18.	Mauritania	314							
19.	South Africa	208							
20.	Morocco	5							
Africa		401 306							

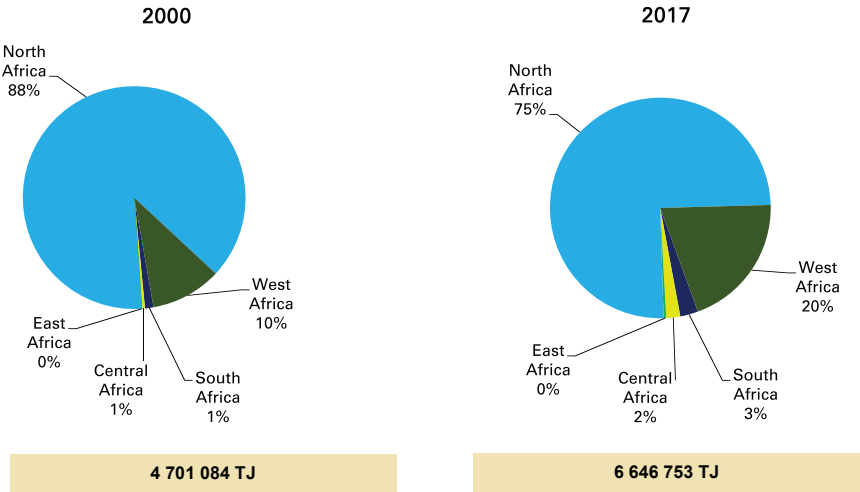
* Include crude oil, NGL, additives and other hydrocarbons.

NATURAL GAS PRODUCTION

Natural gas production from 2000 to 2017 by region (TJ)



2000 and 2017 Regional Shares of Natural Gas Production



Producers, Net Exporters and Net Importers* Of Natural Gas from 2017

	Producers	TJ
1.	Algeria	4 493 785
2.	Egypt	1 703 578
3.	Nigeria	1 634 722
4.	Libya	345 724
5.	Mozambique	192 403
6.	Angola	117 800
7.	Tunisia	100 258
8.	Côte d'Ivoire	87 554
9.	South Africa	42 788
10.	Ghana	35 609
11.	Tanzania	32 342
12.	Gabon	20 778
13.	Cameroun	20 710
14.	Equatorial Guinea	11 042
15.	Congo	9 845
16.	Morocco	3 408
17.	Senegal	871
	Africa	8 853 216

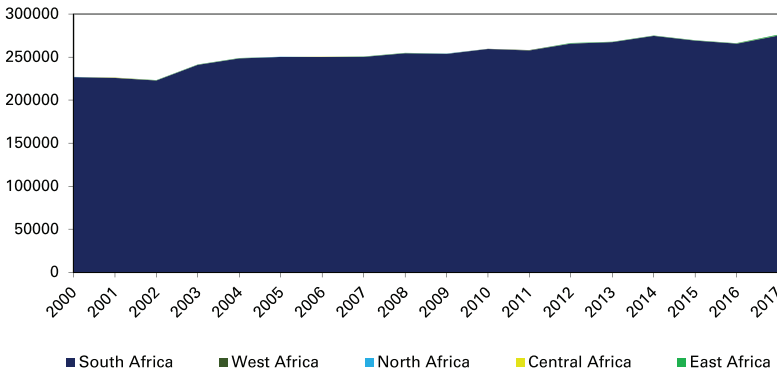
	Net Exporters	TJ
1.	Algeria	2 512 266
2.	Nigeria	1 034 588
3.	Libya	184 262
4.	Mozambique	158 921
5.	Angola	62 688
	Africa	3 952 725

	Net Importers	TJ
1.	Egypt	582 616
2.	South Africa	168 720
3.	Tunisia	152 604
4.	Morocco	44 810
5.	Ghana	12 359
6.	Benin	2 314
7.	DR Congo	38
	Africa	963 462

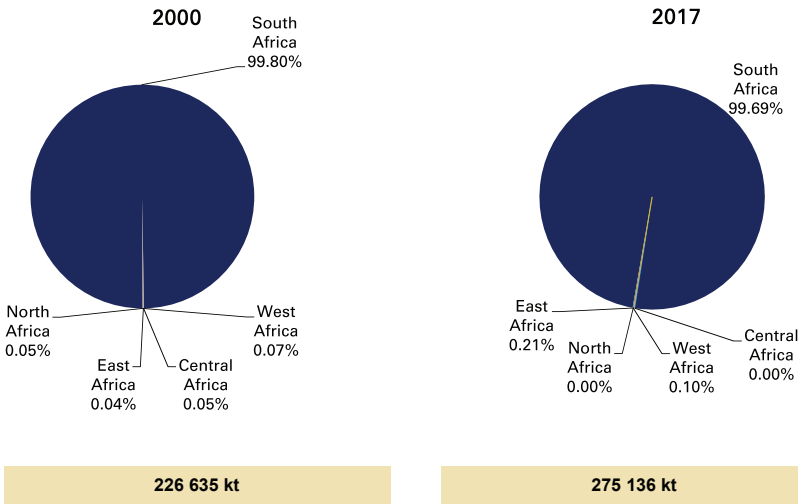
* Net exports and net imports include pipeline gas and LNG.

COAL* PRODUCTION

Coal* Production from 2000 to 2017by region (kt)



2000 and 2017 Regional Shares of Coal* Production



*Includes steam coal, coking coal, lignite and recovered coal, etc.

Producers, Net Exporters and Net Importers of Coal* from 2017

Producers	kt
1. South Africa	257 107
2. Mozambique	11 778
3. Zimbabwe	2 928
4. Botswana	2 222
5. Zambia	748
6. Tanzania	563
7. Eswatini	342
8. Niger	233
9. Nigeria	46
10. Malawi	11
11. Ethiopia	7
Africa	275 985

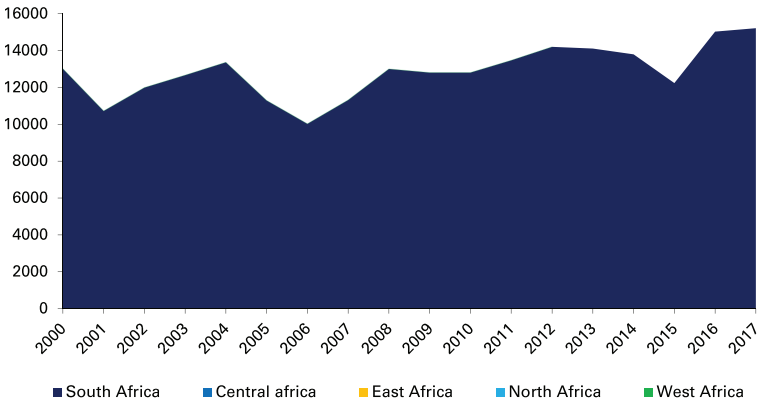
Net Exporters	kt
1. South Africa	70 965
2. Mozambique	12 793
3. Eswatini	337
4. Botswana	95
Africa	84 190

Net Importers	kt
1. Morocco	6 809
2. Mauritius	1 431
3. Senegal	613
4. Egypt	598
5. Madagascar	549
6. Kenya	529
7. Ethiopia	487
8. Zambia	296
9. Algeria	271
10. Malawi	67
11. Zimbabwe	39
12. Namibia	6
Africa	11 695

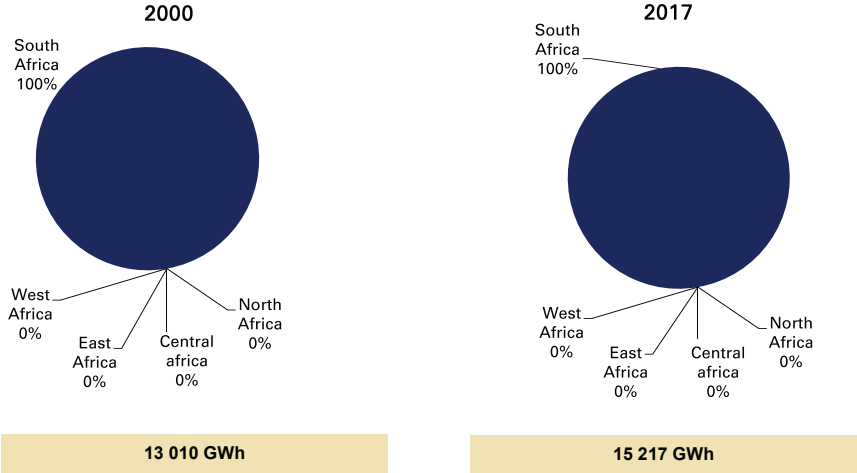
*Includes steam coal, coking coal, lignite and recovered coal, etc.

NUCLEAR PRODUCTION

Nuclear Production from 2000 to 2017 by region (GWh)



2000 and 2017 Regional Shares of Nuclear Production

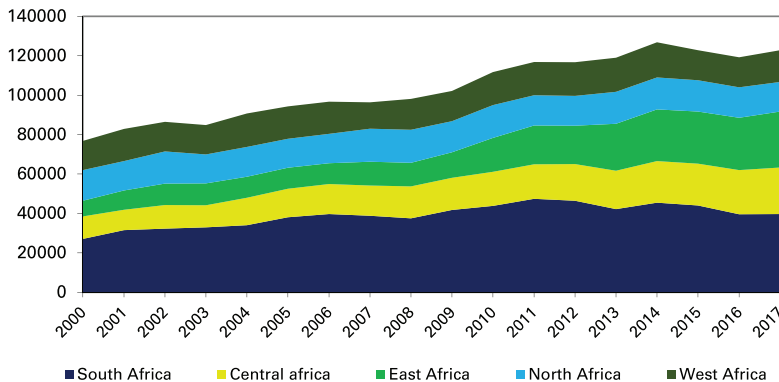


Producers of Nuclear Electricity from 2017

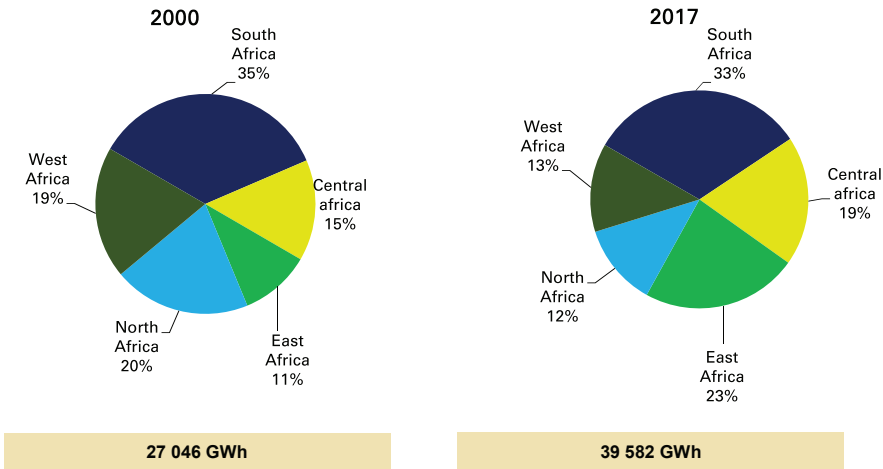
	Producers	kt
1.	South Africa	15 217
	Africa	15 217

HYDRO PRODUCTION

Hydro production from 2000 to 2017 by region (GWh)



2000 and 2017 Regional Shares of Hydro Production



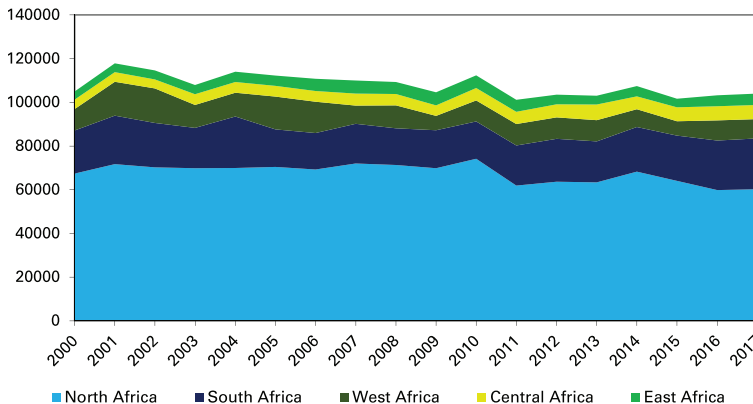
Producers of Hydro Electricity from 2017

Producer	GWh		Producer	GWh
1. Mozambique	14 061		23. Mali	838
2. Egypt	13 675		24. Madagascar	784
3. Zambia	12 484		25. Lesotho	508
4. Ethiopia	10 825		26. Equatorial Guinea	438
5. Congo DR	9 770		27. Senegal	357
6. Sudan	8 356		28. Eswatini	225
7. Angola	5 992		29. Rwanda	222
8. Nigeria	5 933		30. Sierra Leone	219
9. Ghana	5 616		31. Mauritania	217
10. Cameroon	4 787		32. Burundi	185
11. South Africa	4 184		33. Central Africa	144
12. Kenya	3 462		34. Burkina Faso	124
13. Uganda	3 441		35. Mauritius	117
14. Zimbabwe	3 172		36. Togo	103
15. Malawi	2 748		37. Algeria	56
16. Tanzania	2 378		38. Tunisia	17
17. Côte d'Ivoire	1 537		39. São Tomé & Príncipe	13
18. Namibia	1 416		40. Comoros	6
19. Guinea	1 212		41. Benin	1
20. Morocco	1 185		Africa	122 833
21. Gabon	1 013			
22. Congo	1 012			

TRANSFORMATION

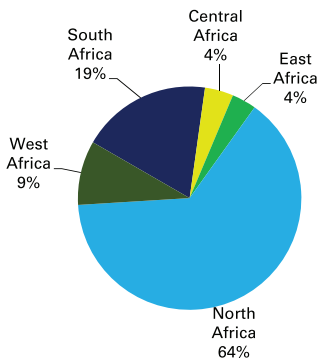
REFINING BY REGION

Refinery Production from 2000 to 2017 by region (kt)



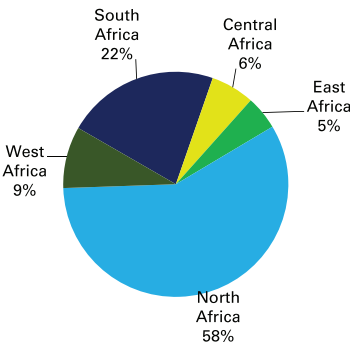
2000 and 2017 Regional Shares of Refinery Production

2000



67 350 kt

2017



60 269 kt

Producers, Net Exporters and Net Importers of Oil Products in 2017

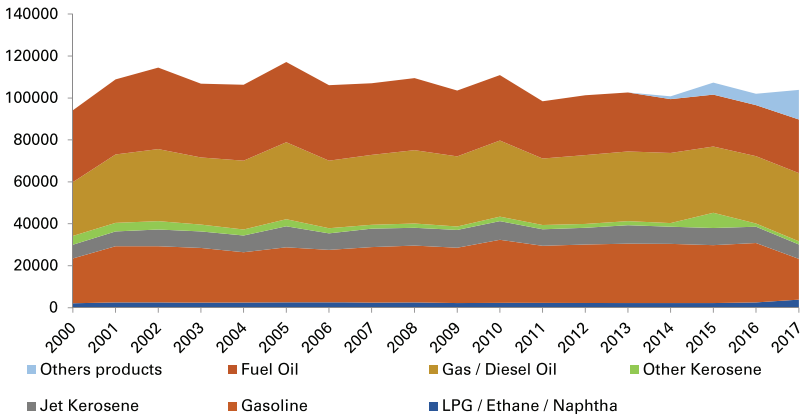
	Producers	kt
1.	Algeria	28 317
2.	Egypt	25 455
3.	South Africa	22 653
4.	Libya	5 594
5.	Sudan	4 484
6.	Nigeria	3 586
7.	Côte d'Ivoire	3 216
8.	Angola	2 694
9.	Cameroun	1 625
10.	Senegal	1 220
11.	Tunisia	903
12.	Gabon	886
13.	Niger	835
14.	Congo	791
15.	Kenya	702
16.	Zambia	539
17.	Chad	523
18.	Ghana	17
	Africa	104 040

	Net Exporters	kt
1.	Algeria	19 185
2.	Côte d'Ivoire	939
3.	Niger	366
4.	Congo	154
	Africa	20 655

	Net Importers	kt
1.	Nigeria	20 821
2.	Egypt	14 122
3.	Morocco	13 393
4.	Libya	12 586
5.	Guinea	7 312
6.	Kenya	4 730
7.	Angola	3 807
8.	Ethiopia	3 775
9.	Tunisia	3 756
10.	Ghana	3 122
11.	South Africa	2 987
12.	Tanzania	2 949
13.	Madagascar	2 149
14.	Mozambique	2 098
15.	Benin	2 054
	Others	20824
	Africa	120 488

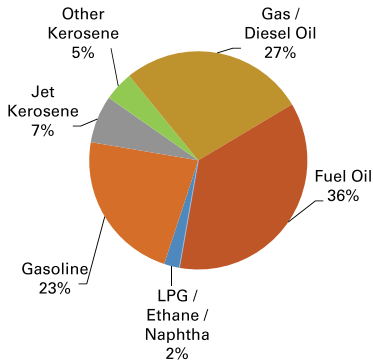
REFINING BY PRODUCT

Refinery Production from 2000 to 2017 by product (kt)



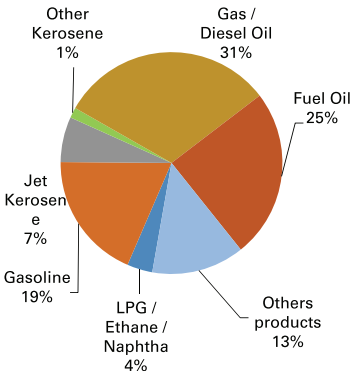
2000 and 2017 Shares of Refinery Production by Product

2000



34 225 kt

2017



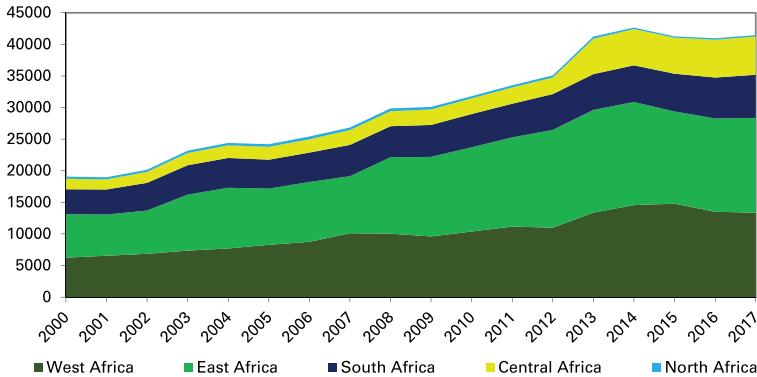
32 551 kt

Refinery capacity of Oil Products in 2017

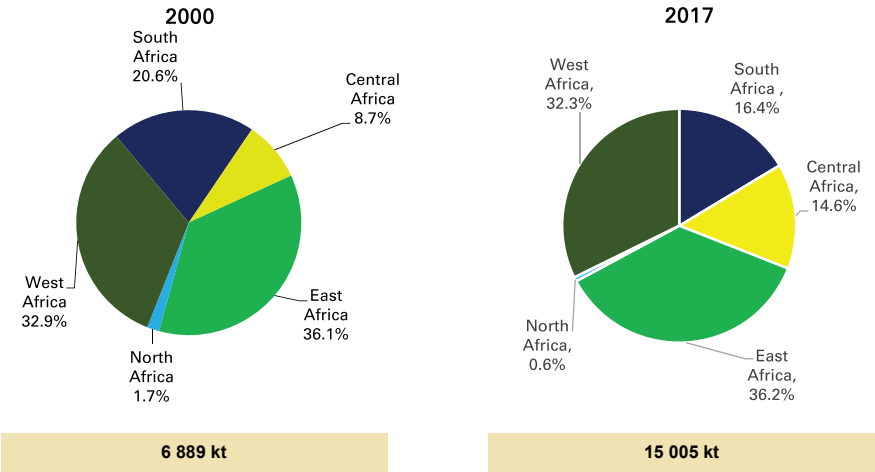
	Refining Capacity	kb/cd
1.	Egypt	810
2.	Algeria	651
3.	South Africa	520
4.	Nigeria	446
5.	Libya	380
6.	Angola	80
7.	Gabon	24
8.	Congo	21
	Other Africa	696
	Africa	3 628

CHARCOAL PRODUCTION

Charcoal production from 2000 to 2017 by region (kt)



2000 and 2017 Regional Shares of Charcoal Production

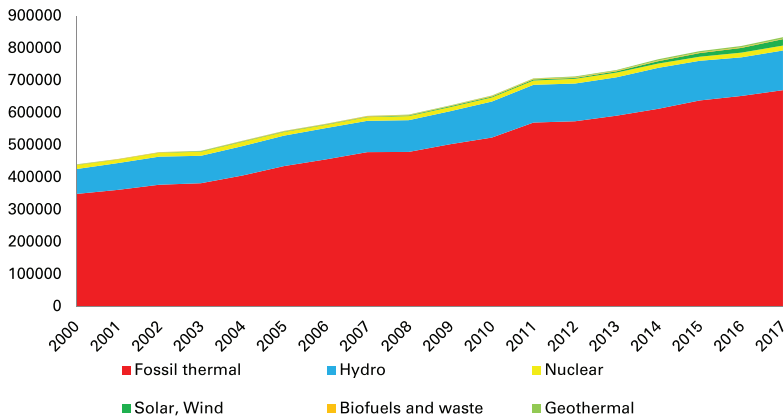


Producers of Charcoal from 2017

Producer	kt	Producer	kt
1. Ethiopia	6 633	27. Burundi	264
2. Nigeria	4 445	28. Congo	217
3. Congo DR	4 129	29. Mauritania	217
4. Guinea	2 141	30. Tunisia	215
5. Sudan	2 017	31. Senegal	208
6. Tanzania	1 925	32. Eritrea	185
7. Uganda	1 800	33. Namibia	161
8. Côte d'Ivoire	1 684	34. Lesotho	107
9. Madagascar	1 560	35. Guinea Bissau	82
10. Mozambique	1 526	36. Botswana	75
11. South Africa	1 437	37. Gambia	67
12. Zambia	1 251	38. Djibouti	53
13. Somalia	1 225	39. Eswatini	50
14. Kenya	1 157	40. Rwanda	48
15. Ghana	1 103	41. Comoros	47
16. Togo	736	42. Gabon	29
17. Malawi	565	43. Morocco	21
18. Mali	550	44. Central Africa	15
19. Benin	506	45. São Tomé & Príncipe	12
20. Niger	496	46. Zimbabwe	12
21. Cameroun	486	47. South Sudan	11
22. Chad	468	48. Equatorial Guinea	11
23. Sierra Leone	442	49. Algeria	2
24. Burkina Faso	410	50. Libya	1
25. Angola	358	51. Mauritius	1
26. Liberia	291	52. Cape Verde	1
		Africa	41 451

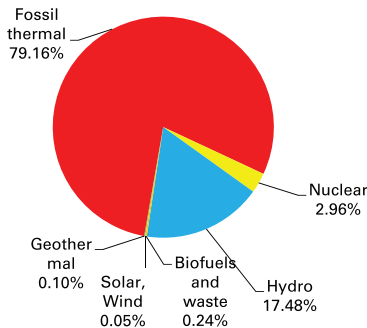
ELECTRICITY GENERATION BY FUEL

Electricity Generation from 2000 to 2017 by fuel (GWh)



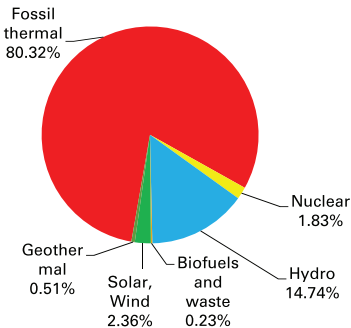
2000 and 2017 Fuel Shares of Electricity Generation

2000



347 982 GWh

2017



669 415 GWh

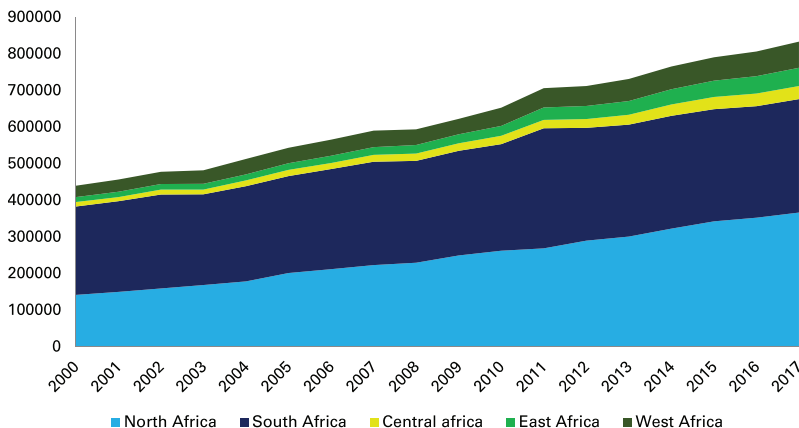
Electricity Production by Fuel from 2017

Country	Solar, Wind, Geothermal, Biofuels and waste	Hydro	Fossil Fuel	Nuclear
Algeria	579	56	75 382	-
Angola	5	5 992	4 624	-
Benin	6	1	325	-
Botswana	2	-	2 720	-
Burkina Faso	725	124	1 448	-
Burundi	1	185	74	-
Cameroon	81	4 787	3 798	-
Cape Verde	83	144	408	-
Central African Republic	8	6	1	-
Chad	-	1 012	299	-
Comoros	-	-	68	-
Congo	-	-	817	-
Cote d'Ivoire	186	1 537	8 957	-
Djibouti	-	-	569	-
DR Congo	30	9 770	14	-
Egypt	2 251	13 675	180 692	-
Equatorial Guinea	-	438	28	-
Eritrea	2	-	432	-
Eswatini	358	225	340	-
Ethiopia	831	10 825	4	-
Gabon	15	1 013	2 168	-
Gambia	6	-	322	-
Ghana	28	5 616	8 424	-
Guinea	8	1 212	595	-
Guinea-Bissau	3	-	164	-
Kenya	4 472	3 462	2 426	-
Lesotho	-	508	-	-
Liberia	1	-	117	-

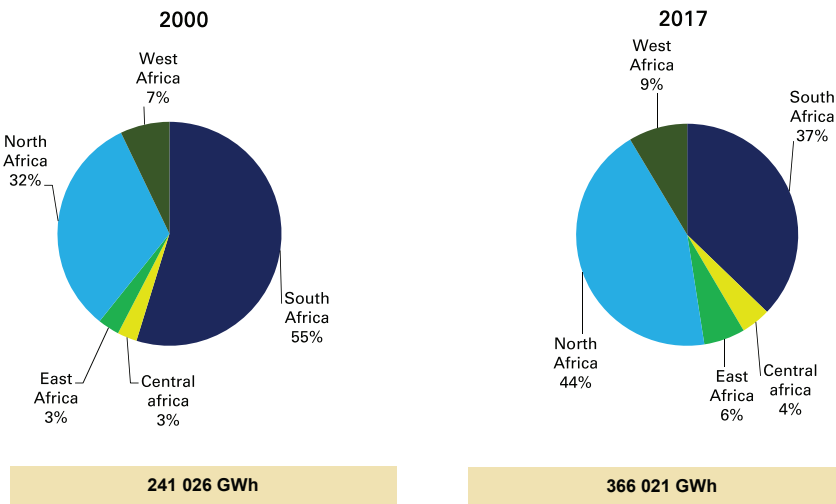
Country	Solar, Wind, Geothermal, Biofuels and waste	Hydro	Fossil Fuel	Nuclear
Libya	8	-	37 405	-
Madagascar	27	784	1 445	-
Malawi	15	2 748	8	-
Mali	68	838	1 562	-
Mauritania	29	217	540	-
Mauritius	590	117	2 420	-
Morocco	7 187	1 185	26 875	-
Mozambique	2	14 061	2 930	-
Namibia	37	1 416	65	-
Niger	5	-	552	-
Nigeria	87	5 933	25 748	-
Rwanda	5	222	320	-
Sao Tome and Principe		13	82	-
Senegal	72	357	4 076	-
Seychelles	19	-	448	-
Sierra Leone	-	219	177	-
Somalia	-	-	406	-
South Africa	7 228	4 184	231 630	15 217
South Sudan	3	-	539	-
Sudan	10	8 356	6 559	-
Tanzania	51	2 378	4 685	-
Togo	31	103	594	-
Tunisia	603	17	19 990	-
Uganda	173	3 441	242	-
Western Sahara	-	-	116	-
Zambia	3	12 484	684	-
Zimbabwe	137	3 172	4 101	-
Africa	26 072	122 833	669 415	15 217

ELECTRICITY GENERATION BY REGION

Electricity Generation from 2000 to 2017 by region (GWh)



2000 and 2017 Regional Shares of Electricity Generation



Producers, Net Exporters and Net Imports of Electricity from 2017

Producer	GWh		Pos. Producer	GWh
1. South Africa	258 259		29. Congo	1 829
2. Egypt	196 618		30. Guinea	1 815
3. Algeria	76 017		31. Namibia	1 518
4. Libya	37 413		32. Eswatini	923
5. Morocco	35 247		33. Mauritania	786
6. Nigeria	31 768		34. Togo	728
7. Tunisia	20 611		35. Djibouti	570
8. Mozambique	16 992		36. Niger	557
9. Soudan	14 924		37. Rwanda	547
10. Ghana	14 068		38. South Sudan	542
11. Zambia	13 171		39. Lesotho	508
12. Ethiopia	11 661		40. Cape Verde	491
13. Côte d'Ivoire	10 679		41. Seychelles	467
14. Angola	10 621		42. Equatorial Guinea	466
15. Kenya	10 359		43. Eritrea	434
16. Congo DR	9 815		44. Somalia	406
17. Cameroon	8 667		45. Sierra Leone	397
18. Zimbabwe	7 278		46. Benin	332
19. Tanzania	7 114		47. Gambia	329
20. Senegal	4 505		48. Chad	299
21. Uganda	3 856		49. Burundi	260
22. Gabon	3 196		50. Guinea Bissau	167
23. Mauritius	3 128		51. Central Africa	153
24. Malawi	2 771		52. Liberia	118
25. Botswana	2 722		53. Saharawi Republic	116
26. Mali	2 468		54. São Tomé & Príncipe	95
27. Burkina Faso	2 297		55. Comoros	74
28. Madagascar	2 255		Africa	833 404

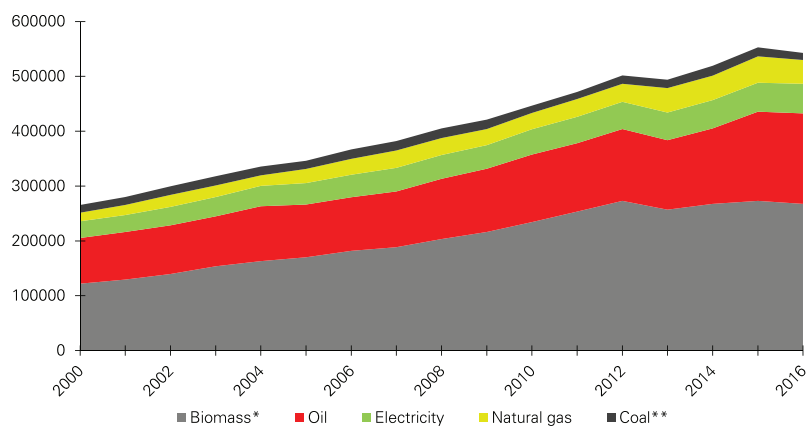
Net Exporters and Net Importers of Electricity, 2017

	Net Exporters	GWh
1.	South Africa	5 855
2.	Côte d'Ivoire	1 839
3.	Egypt	641
4.	DR Congo	392
5.	Algeria	343
6.	Uganda	290
7.	Ethiopia	176
8.	Tunisia	34
9.	Ghana	21
10.	Mozambique	11
11.	Congo	4
	Africa	9 606

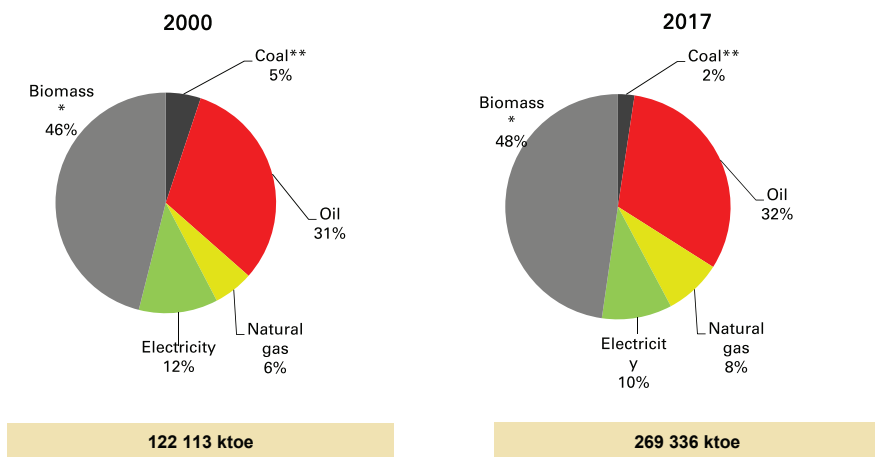
	Net Importers	GWh
1.	Morocco	5 896
2.	Namibia	3 033
3.	Zimbabwe	1 895
4.	Botswana	1 707
5.	Zambia	1 336
6.	Benin	1 170
7.	Togo	846
8.	Niger	845
9.	Mali	672
10.	Eswatini	588
11.	Djibouti	508
12.	Burkina Faso	434
13.	Libya	376
14.	Lesotho	376
15.	Gabon	369
16.	Senegal	305
17.	Kenya	173
18.	Burundi	113
19.	Tanzania	110
20.	Rwanda	107
21.	Cameroon	60
	Africa	20 920

TOTAL FINAL CONSUMPTION BY FUEL

Total Final Consumption (TFC) from 2000 to 2017 by fuel (ktoe)



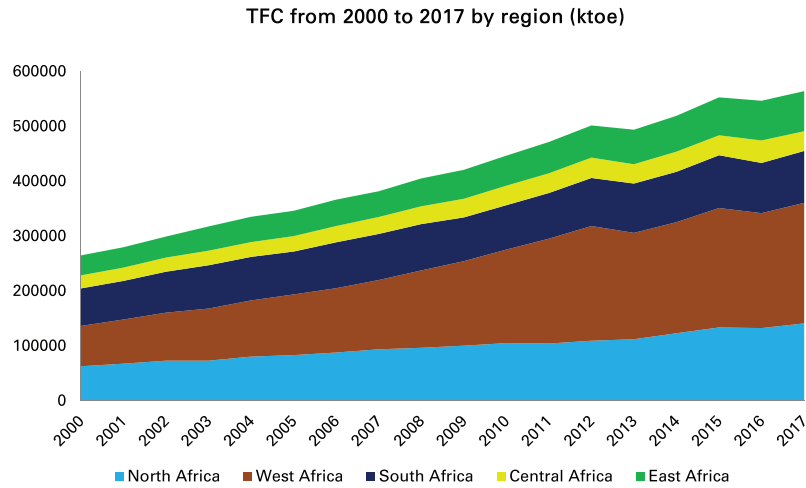
2000 and 2017 Fuel Shares of Total Final Consumption



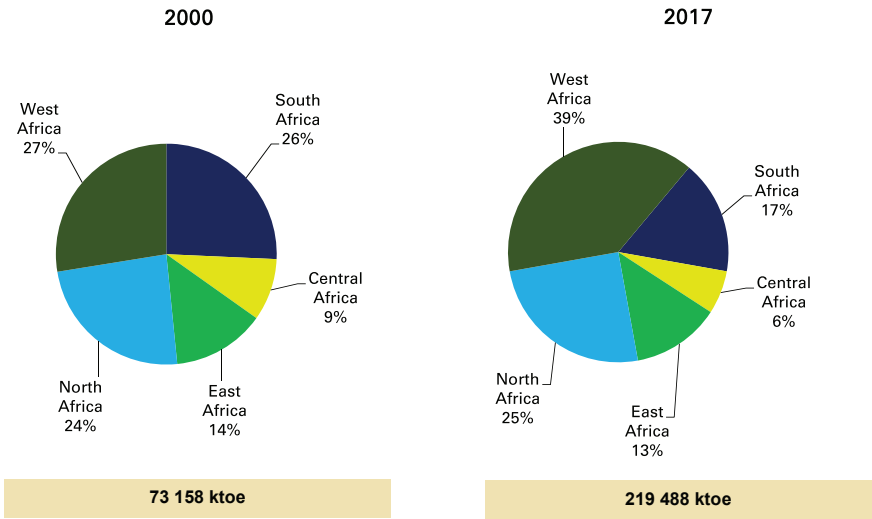
* includes firewood and charcoal

**Includes steam coal, coking coal, lignite and recovered coal

TOTAL FINAL CONSUMPTION BY REGION



2000 and 2017 Regional Shares of TFC

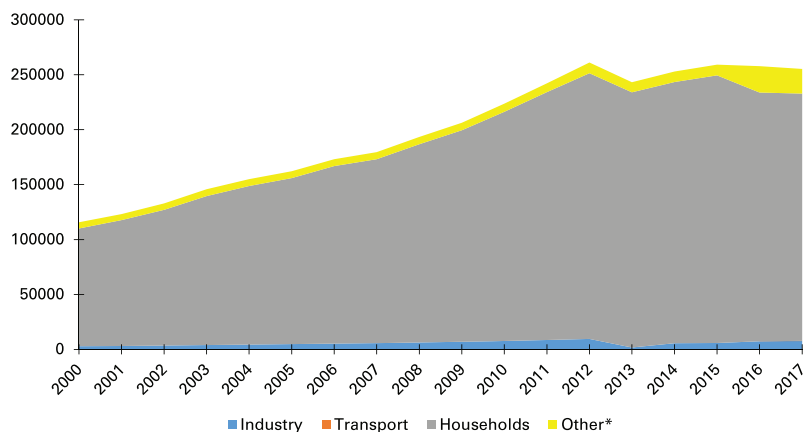


CONSUMPTION

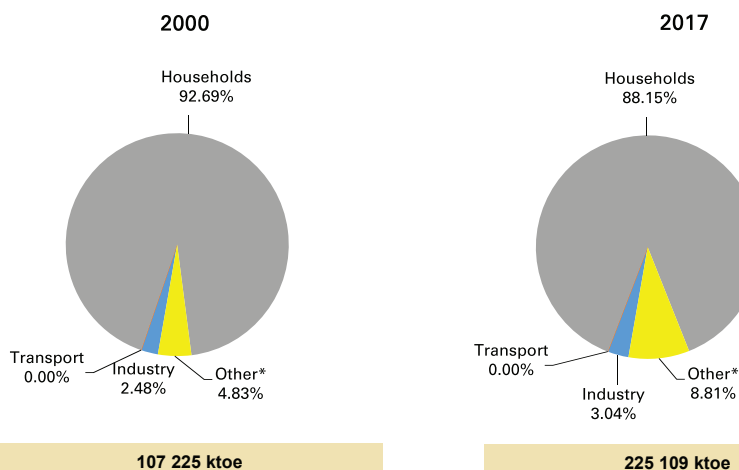
TOTAL FINAL CONSUMPTION BY SECTOR

Firewood

TFC from 2000 to 2017 by sector (ktoe)



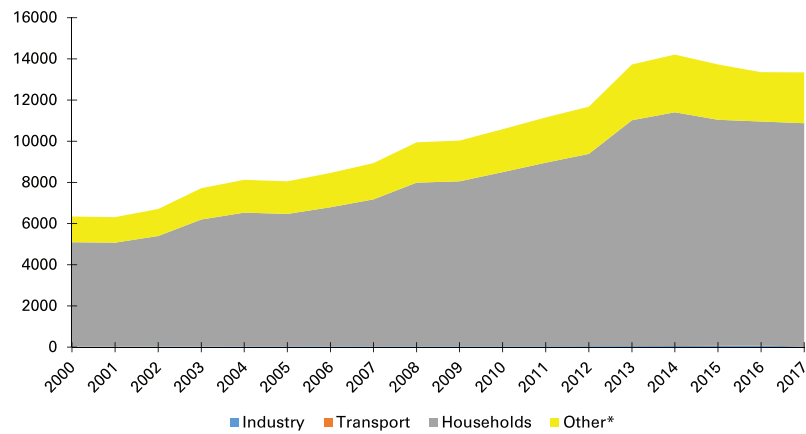
2000 and 2017 shares of Africa firewood consumption



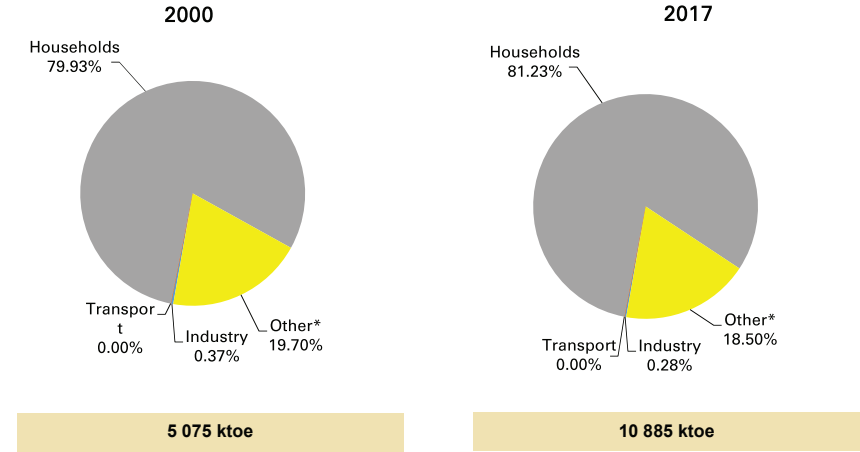
* Includes agriculture, commercial, public service, and non-specified other

Charcoal

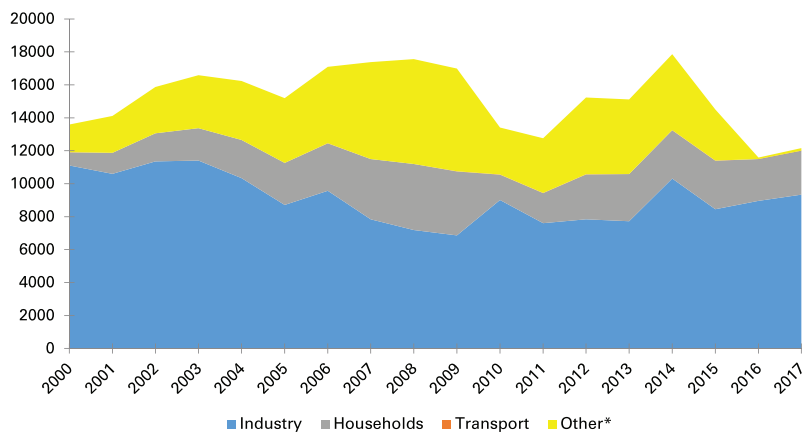
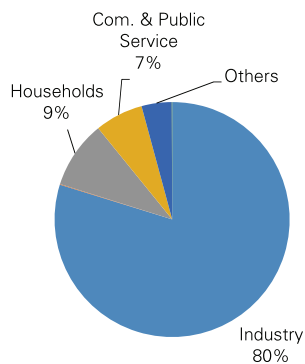
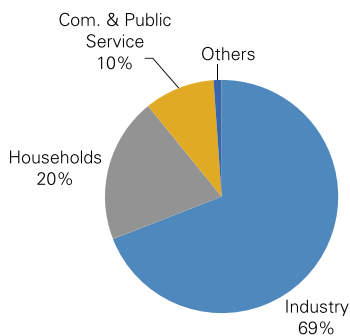
TFC from 2000 to 2017 by sector (ktoe)



2000 and 2017 shares of Africa charcoal consumption



* Includes agriculture, commercial, public service, and non-specified other

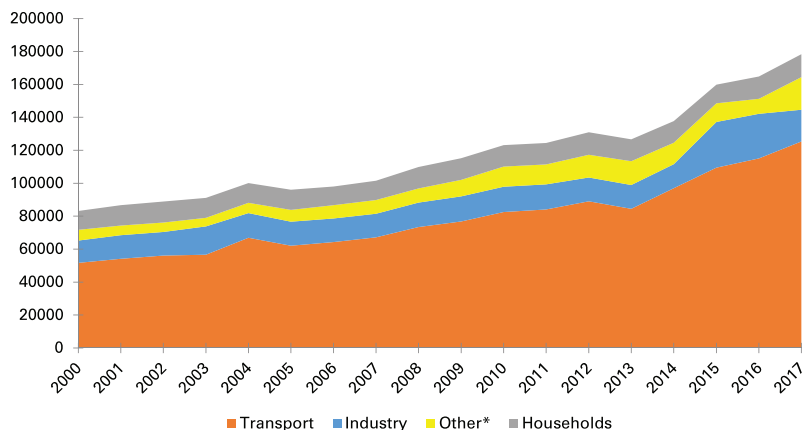
Coal****TFC from 2000 to 2017 by sector (ktoe)****2000 and 2017 shares of Africa coal** consumption****2000****11 102 ktoe****2017****9 337 ktoe**

* Includes agriculture, commercial, public service, and non-specified other

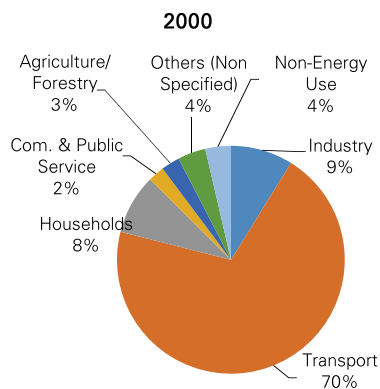
** Includes steam coal, coking coal, lignite and recovered coal

Oil

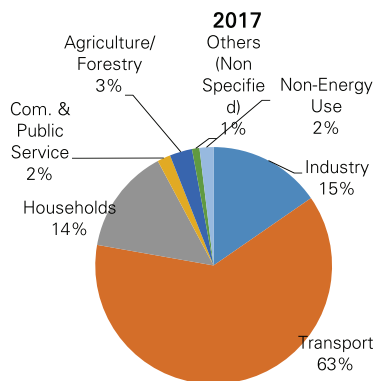
TFC from 2000 to 2017 by sector (ktoe)



2000 and 2017 Shares of Africa Oil Consumption



51 670 ktoe

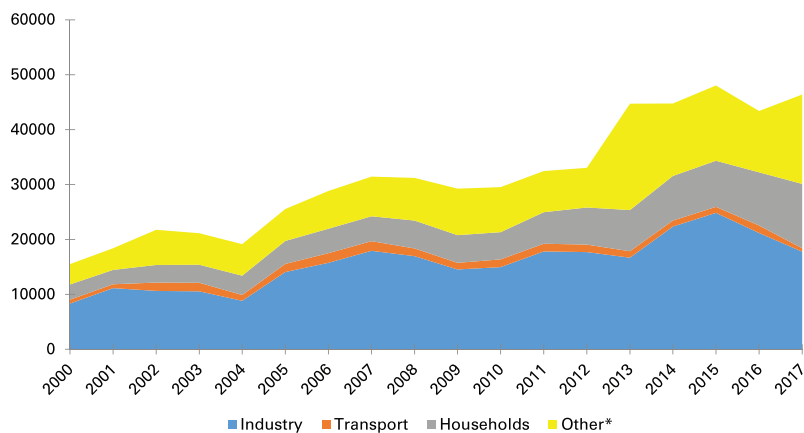


115 024 ktoe

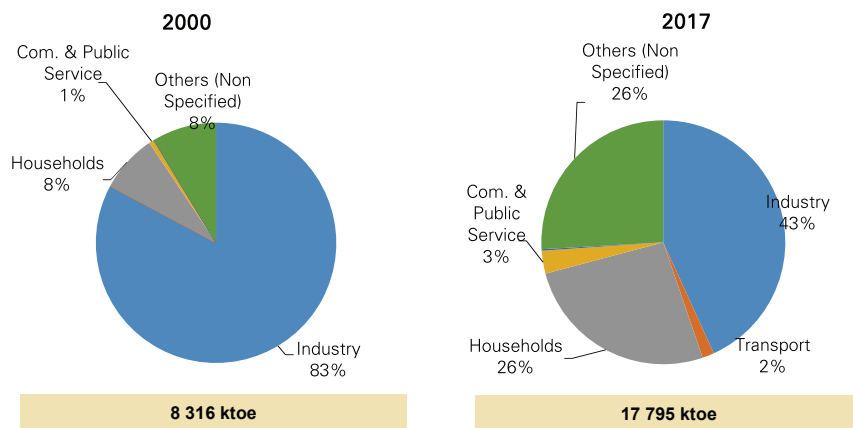
* Includes agriculture, commercial, public service, and non-specified other

Natural gas

TFC from 2000 to 2017 by sector (ktoe)



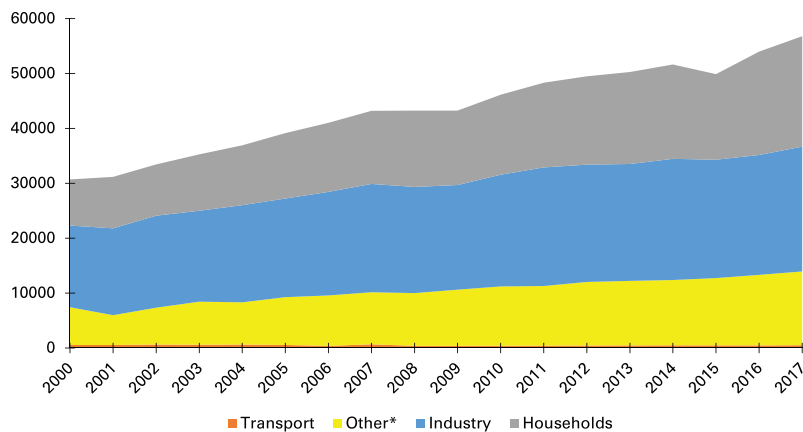
2000 and 2017 Shares of Africa Natural Gas Consumption



* Includes agriculture, commercial, public service, and non-specified other

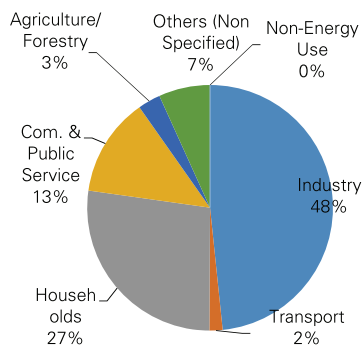
Electricity

TFC from 2000 to 2017 by sector (ktoe)



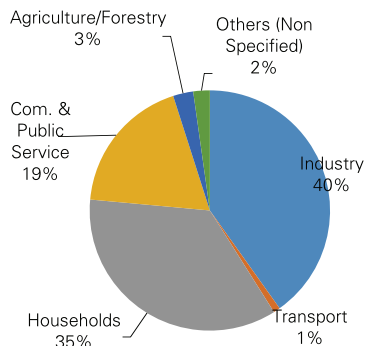
2000 and 2017 shares of Africa electricity consumption

2000



14 852 ktoe

2017



22 746 ktoe

* Includes agriculture, commercial, public service, and non-specified other

SIMPLIFIED ENERGY BALANCE TABLE, 2000

Thousand Tonnes of Oil Equivalent (ktoe)		Crude Oil	Oil Products	Coal/peat	Natural Gas
PRIMARY SUPPLY	Production	361 087	-	117 811	34 537
	Imports	22 288	34 534	4 108	847
	Exports	-265 250	-48 292	-36 006	-5 072
	Intl. Marine Bunkers	-	-2 402	-	-
	Intl. Aviation Bunkers	-	-5 417	-	-
	Stock Changes	-877	637	934	-
	TPES	117 248	-15 727	86 846	30 312
TRANSFORMATION	Transfers	-12 686	21 505	-	-
	Statistical difference.	-2 917	5 608	- 46	-1 447
	Transformation	-100 266	84 907	- 74 204	-16 162
	Electricity Producers	-143	-11 172	-53 406	-14 765
	Petroleum Refineries	-100 123	96 019	-	-
	Charcoal Plants	-	-	-	-
	Gas-To-Liquids	-	-	-	-
	Coal-To-Liquids	-	-	-	-
	Blast Furnaces	-	-	-	-
	Other Transformation	-	60	-20 798	-1 398
	Energy Industry Own Use	-406	-389	- 28	-4 029
FINAL CONSUMPTION	Losses	-947	-2	-2 044	0
	TFC	26	8 4687	1 2689	8 673
	Industry	26	13 009	6 782	4 712
	Transport	-	52 866	8	0
	Households	-	12 200	789	445
	Com. & Public Service	-	1 537	566	40
	Agriculture/Forestry	-	2 592	351	-
	Others (Non Specified)	-	872	5	493
	Non-Energy Use	-	1 611	4 187	2 984

Nuclear	Hydro	Wind & Geothermal & Solar PV	Biofuels & Waste	Electricity	Total
3 390	6 698	394	162 066	-	685 982
-	-	-	4 397	2636	68 810
-	-	-	-	-1445	-356 064
-	-	-	-	-	-2 811
-	-	-	-	-	-5 417
-	-	-	-	-	694
3 390	6 698	394	166 463	1191	396 816
-	-	-	-	-	8 819
-	-	-	23 297	260	13 632
- 3 390	- 6 698	-394	- 48 777	37853	-127131
-3 390	- 6 698	- 394	-1 193	37853	-53 306
-	-	-	-	-	-4 104
-	-	-	-47 584	-	-47 584
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-22136
-	-	-	-	-3 784	-8 608
-	-	-	-	-4 817	-5 766
-	-	-	140 983	30 704	277 762
-	-	-	5 586	14 854	44 970
-	-	-	-	529	53 403
-	-	-	124 412	8 332	146 178
-	-	-	2 426	3 993	8 561
-	-	-	-	918	3 861
-	-	-	8 558	2 078	12 006
-	-	-	-	-	8 783

SIMPLIFIED ENERGY BALANCE TABLE, 2017

Thousand Tonnes of Oil Equivalent (ktoe)		Crude Oil	Oil Products	Coal/peat	Natural Gas
PRIMARY SUPPLY	Production	376 627	-	140 917	175 665
	Imports	29 461	123 414	6 028	20 586
	Exports	-292 403	- 27 052	-42 929	
	Intl. Marine Bunkers	-	-35 433	-	-76 269
	Intl. Aviation Bunkers	-	-4 198	-	
	Stock Changes	2 915	508	595	-62
	TPES	116 600	128 106	104 611	119 920
TRANSFORMATION	Transfers	-10 736	-6 923	-	
	Statistical difference.	-3 525	-18 526	-19 243	-8341
	Transformation	-101 003	73 462	-59595.71	-63 188
	Electricity Producers	-1 192	-18 793	-65946.92	-62 867
	Petroleum Refineries	-100 321	92 255	-	
	Charcoal Plants	509	-	-	
	Gas-To-Liquids	-	-	-	-321
	Coal-To-Liquids	-	-	-1 712	
	Blast Furnaces	-	-	-1 362	
FINAL CONSUMPTION	Other Transformation	-	-	-9 425	
	Energy Industry Own Use	-501	-215	-11 291	-9 437
	Losses	835	-82	-3	-1
	TFC	-	175 822	14 477	38 953
	Industry		15 566	9 165	15 174
	Transport	-	123 271	3	544
	Households	-	14 948	2 662	9 163
	Com. & Public Service	-	4 057	1 291	1 070
	Agriculture/Forestry	-	4 620	144	67
	Others (Non Specified)	-	6 988	4	9 097
	Non-Energy Use	-	6 372	1 208	3 838

Nuclear	Hydro	Wind & Geothermal & Solar PV	Biofuels & Waste	Electricity	Total
3 965	10 588	5 062	435 652	-	1 148 476
	-	-	2 341	2 938	184 768
	-	-	-4		-42 933
	-	-	-	-1 725	-113 427
	-	-	-	-	0
	-	-	-	-	3 956
	-	-	-	-	469 237
3 965	10 588	5 062	437 988	1 213	441 157
				-2 017	-43 311
-	-	-	28 666	71 421	-64 104
-3 965	-10 588	- 5 062	-136 215	71 421	-167 261
-3 965	-10 588	- 5 062	-12 528	-	-40 209
-	-	-	-	-	509
-	-	-	-123 418	-	-123 739
-	-	-	-	-	-1 712
-	-	-	-	-	-1 362
-	-	-	-269	-	-9 694
-	-	-	-	- 4 389	-14 542
-	-	-	-6 217	-9 380	-14 848
-	-	-	330 170	56 848	440 448
-	-	-	17 679	22 831	64 849
-	-	-	4	496	124 318
-	-	-	283 641	20 138	46 911
-	-	-	28 170	10582	45 170
-	-	-	-	1545.95	4 831
-	-	-	679	1255	18 023
-	-	-	-	-	11 418

SELECTED ENERGY INDICATORS, 2017

Country	Pop*	GDP	GDP PPP	Energy Prod**	TPES	TFC	Net Import
Algeria	41.4	199.2	574.33	144.75	60.39	37.56	-83.92
Angola	29.8	101.7	180.24	84.24	13.61	9.55	-70.2
Benin	11.2	9.6	23.12	2.67	4.91	4.03	2.24
Botswana	2.2	17.3	35.65	1.94	3.17	1.85	1.25
Burkina Faso	19.2	13.2	32.56	4.86	6.24	5.58	1.35
Burundi	10.8	2.3	7.26	2.72	2.81	2.44	0.08
Cameroon	24.6	36.4	81.38	10.71	9.3	7.95	-1.31
Cape Verde	0.5	2	3.43	0.04	0.21	0.17	0.41
Central Africa	4.6	1.7	3.46	0.96	1.08	1.04	0.1
Chad	15	12.3	26.34	8.97	4.27	3.47	-4.8
Comoros	0.8	1.1	2.04	0.1	0.14	0.11	0.03
Congo	5.1	13.8	26.08	12.77	3.02	2.14	-12.14
Congo DR	81.4	33.3	65.75	35.77	35.55	18.98	-0.22
Côte d'Ivoire	24.4	39.5	87.11	10.38	10.69	7.07	0.52
Djibouti	0.9	1.7	0	0.25	0.45	0.37	0.2
Egypt	96.4	271.7	1029.31	68.69	89.07	56.91	18.05
Equatorial Guinea	1.3	1.1	28.14	10.97	0.79	0.28	-10.46
Eritrea	3.4	0	0	0.47	0.67	0.46	0.21
Eswatini	1.1	5.4	10.76	1.16	1.47	1.29	0.31
Ethiopia	106.4	58.3	183.48	44.68	48.57	40.17	3.87
Gabon	2.1	19	33.34	12.81	3.67	1.8	-8.82
Gambia	2.2	1.1	3.24	0.46	0.68	0.54	0.23
Ghana	29.1	50.6	117.98	13.59	9.49	6.87	-4.15
Guinea	12.1	10.8	26.71	5.06	6.8	4.21	1.74
Guinea Bissau	1.8	14.3	2.88	0.47	0.53	0.41	0.06
Kenya	50.2	58.1	148.73	16.43	20.85	15.93	5.09
Lesotho	2.1	2.9	5.95	0.84	1.12	0.96	0.27
Liberia	4.7	2.6	5.53	1.43	1.63	1.2	0.2

Pop* — Population (Million) - Sources: African Union Yearbook

GDP: Gross Domestic Product (Billion 2010 USD) - Sources: World Bank

GDP PPP — Gross Domestic Product Purchasing Power Parity (Billion 2011 USD) - Sources: World Bank

Energy Prod** — Energy production (Mtoe)

TPES — Total Primary Energy Supply (Mtoe)

TFC — Total Final Consumption (Mtoe)

Net Import (Mtoe)

Country	Pop*	GDP	GDP PPP	Energy Prod**	TPES	TFC	Net Import
Libya	6.6	46.6	113.99	46.2	24.75	19.08	-21.33
Madagascar	25.6	10.8	36.27	6.73	7.86	6.55	1.16
Malawi	17.7	9.1	20.39	2.54	3.03	2.36	0.49
Mali	18.5	14.1	37.38	3.43	5.12	3.76	1.69
Mauritania	4.3	5.7	15.83	1.14	1.9	1.23	0.76
Mauritius	1.3	12.9	25.7	0.95	2.39	1.01	2.03
Morocco	35.6	119.3	271.32	1.69	17.93	15.08	16.92
Mozambique	28.6	15.4	33.72	17.63	10.25	5.41	-7.71
Namibia	2.4	14.9	24.25	1.14	2.8	2.55	1.71
Niger	21.6	8.5	19.89	2.8	2.52	2.34	-0.31
Nigeria	190.9	460.5	1021.45	324.96	227.51	175.83	-96.69
Rwanda	12	9.4	22.68	2.28	2.46	2	0.2
Saharawi Republic	0.6	-	-	-	-	-	-
São Tomé & Príncipe	0.2	0.3	0.62	0.04	0.09	0.08	0.06
Senegal	15.4	23	49.84	0.59	2.59	1.91	2.11
Seychelles	0.1	1.3	2.53	0	0.16	0.11	0.42
Sierra Leone	7.5	3.5	10.51	2.75	3.12	2.55	0.38
Somalia	14.6	-	-	3.64	3.76	2.2	0.14
South Africa	57	426.5	696.24	148.98	134.69	67.64	-9.78
South Sudan	40.8	0.1	-	6.25	0.73	0.55	0.5
Sudan	10.9	79.4	181.04	15.93	17.31	12.08	1.42
Tanzania	54.7	49.7	149.06	18.14	20.93	18.13	3.03
Togo	7.7	5.1	11.77	3.43	3.97	2.42	0.51
Tunisia	11.4	49.7	125.2	5.19	10.25	7.78	5.24
Uganda	41.2	28.6	72.78	15.46	19.43	13.89	3.97
Zambia	16.9	28	62.66	8.57	10.45	8.68	1.7
Zimbabwe	14.2	18	36.57	7.46	9.03	7.73	1.57

Country	Electricity Consumption (TWh)	TPES/ Population (GJ / habitant)	TFC / Population (GJ / habitant)	TPES / GDP (TJ / Million USD)	TPES / GDP PPP (TJ / Million USD)	Electricity Consumption / Population (kWh/ habitant)
Algeria	57.87	61.07	37.99	12.69	4.4	1397.83
Angola	5.97	19.12	13.41	5.6	3.16	200.34
Benin	1.17	18.34	15.08	21.4	8.89	104.46
Botswana	3.69	60.4	35.26	7.68	3.73	1677.27
Burkina Faso	2.65	13.61	12.17	19.79	8.02	138.02
Burundi	0.19	10.88	9.45	51.07	16.18	17.59
Cameroon	6.99	15.82	13.52	10.69	4.78	284.15
Cape Verde	0.37	17.5	13.99	4.37	2.55	740
Central Africa	0.07	9.79	9.43	26.5	13.02	15.22
Chad	0.2	11.91	9.68	14.52	6.78	13.33
Comoros	0.03	7.16	5.62	5.21	2.81	37.5
Congo	1.61	24.79	17.53	9.16	4.85	315.69
Congo DR	7.46	18.29	9.76	44.7	22.64	91.65
Côte d'Ivoire	6.79	18.34	12.13	11.33	5.14	278.28
Djibouti	0.6	20.97	17.31	11.1	-	666.67
Egypt	175.12	38.69	24.72	13.73	3.62	1816.6
Equatorial Guinea	0.57	25.32	9.05	29.93	1.17	438.46
Eritrea	0.37	8.29	5.72	-	-	108.82
Eswatini	0.23	55.96	49.25	11.4	5.72	209.09
Ethiopia	9.23	19.11	15.81	34.88	11.08	86.75
Gabon	2.25	73.26	35.84	8.1	4.61	1071.43
Gambia	0.16	13.02	10.22	26.05	8.84	72.73
Ghana	12.39	13.65	9.88	7.85	3.37	425.77
Guinea	0.29	23.51	14.56	26.34	10.65	23.97
Guinea Bissau	0.08	12.41	9.61	1.56	7.75	44.44
Kenya	8.76	17.39	13.29	15.02	5.87	174.5
Lesotho	0.93	22.28	19.14	16.13	7.86	442.86
Liberia	0.08	14.54	10.7	26.29	12.36	17.02

Country	Electricity Consumption (TWh)	TPES/ Population (GJ / habitant)	TFC / Population (GJ / habitant)	TPES / GDP (TJ / Million USD)	TPES / GDP PPP (TJ / Million USD)	Electricity Consumption / Population (kWh/ habitant)
Libya	15.18	157.03	121.06	22.24	9.09	2300
Madagascar	1.85	12.86	10.71	30.49	9.08	72.27
Malawi	3.92	7.16	5.59	13.92	6.21	221.47
Mali	3.04	11.59	8.51	15.2	5.73	164.32
Mauritania	0.48	18.49	11.94	13.95	5.02	111.63
Mauritius	3.26	77.13	32.57	7.77	3.9	2507.69
Morocco	34.57	21.09	17.74	6.29	2.77	971.07
Mozambique	15.59	15.01	7.92	27.87	12.73	545.1
Namibia	4.16	48.92	44.42	7.88	4.84	1733.33
Niger	1.24	4.88	4.53	12.39	5.29	57.41
Nigeria	26.54	49.9	38.56	20.68	9.33	139.03
Rwanda	0.45	8.59	6.98	10.97	4.55	37.5
Saharawi Republic	-	-	-	-	-	-
São Tomé & Príncipe	0.02	19.25	16.09	12.83	6.21	100
Senegal	4.21	7.04	5.18	4.72	2.18	273.38
Seychelles	0.55	65.85	44.66	5.07	2.6	5500
Sierra Leone	0.14	17.43	14.25	37.36	12.44	18.67
Somalia	0.24	10.77	6.31	-	-	16.44
South Africa	200.42	98.93	49.68	13.22	8.1	3516.14
South Sudan	0.52	0.75	0.57	304.28	-	12.75
Sudan	12.47	66.48	46.4	9.13	4	1144.04
Tanzania	6.11	16.02	13.87	17.63	5.88	111.7
Togo	1.87	21.59	13.13	32.6	14.13	242.86
Tunisia	16.8	37.65	28.56	8.64	3.43	1473.68
Uganda	2.91	19.75	14.12	28.44	11.18	70.63
Zambia	11.82	25.9	21.5	15.63	6.98	699.41
Zimbabwe	7.9	26.64	22.78	21.01	10.34	556.34

CONVERSION FACTORS

Conversion Factors for Energy

	TJ	Gcal	Mtoe	MBtu	GWh
TJ	1	238.8	2.388×10^{-5}	947.8	0.2778
Gcal	4.1868×10^{-3}	1	10^{-7}	3.968	1.163×10^{-3}
Mtoe	4.1868×10^4	10^7	1	3.968×10^7	11630
MBtu	1.0551×10^{-3}	0.252	2.52×10^{-8}	1	2.931×10^{-4}
GWh	3.6	860	8.6×10^{-5}	3412	1

Conversion Factors for Mass

	kg	t	lt	st	lb
kilogram (kg)	1	0.001	9.84×10^{-4}	1.102×10^{-3}	2.2046
ton (t)	1 000	1	0.984	1.1023	2 204.6
long ton (lt)	1 060	1.016	1	1.120	2 240.0
short ton (st)	907.2	0.9072	0.893	1	2 000.0 ⁴
pound (lb)	0454	4.54×10^{-4}	4.46×10^{-4}	5.0×10^{-4}	1

Conversion Factors for Volume

	gal U.S.	gal U.K.	bbl	Ft ³	l	m ³
U.S. gallon (gal)	1	0.8327	0.02381	0.1337	3.785	0.0038
U.K. gallon (gal)	1.201	1	0.02859	0.1605	4.5466	0.0045
barrel (bbl)	42.0	34.97	1	5.615	159.0	0.159
cubic foot (ft ³)	7.48	6.229	0.1781	1	28.3	0.0283
litre(l)	0.2642	0.220	0.0063	0.0353	1	0.001
cubic metre (m ³)	264.2	220.0	6.289	35.3147	1 000	1

GLOSSARY

Coal/peat

Coal/peat includes all coal primary (including hard coal and lignite) and derived fuels (including patent fuel, coke oven coke, gas coke, BKB, gas works gas, coke oven gas, blast furnace gas and other recovered gases). Peat is also included in this category.

Hard coal

Hard coal comprises anthracite coking coal and other bituminous coal

Steam coal

Steam coal comprises anthracite, other bituminous coal and sub-bituminous coal.

Crude oil

Crude oil comprises crude oil, natural gas liquids, refinery feedstock and additives as well as other hydrocarbons.

Oil products

Oil products comprise refinery gas liquids, refinery feedstock and additives as well as other hydrocarbons.

Oil products

Oil products comprises refinery gas, ethane, LPG, aviation gasoline, motor gasoline, jet fuels, kerosene, gas/diesel oil, fuel oil, naphtha, white spirit, lubricants, bitumen, paraffin waxes, petroleum coke and other oil products.

Natural gas

Natural gas includes both “associated” and “non-associated” gas.

Nuclear

Nuclear shows the primary heat equivalent of the electricity produced by a nuclear power plant with an average thermal efficiency of 33%

Hydro

Hydro shows the energy content of the electricity produced in hydro power plants hydro output excludes output from pumped storage plants.

Biofuels and waste

Biofuels and waste comprises solid biofuels liquid biofuels, biogases, industrial waste and municipal waste. Biofuels are defined as any plant matter used directly as fuel or converted into fuels (e.g., charcoal) or electricity and/or heat. Included here are wood, vegetal waste (including wood waste and crops used for energy production), ethanol, animal materials/ wastes and sulphite lyes. Municipal waste comprises wastes produced by residential, commercial and public services that are collected by local authorities for disposal in a central location for the production of heat and/or power.

Other

Other includes geothermal, solar, wind, tide/wave/ocean energy, electricity and heat. Unless the actual efficiency of the geothermal process is known, the quantity of geothermal energy entering electricity generation is inferred from the electricity production at geothermal plants assuming an average thermal efficiency of 10%. For solar, wind and tide/Wave/ocean energy, the quantities entering electricity generation are equal to the electrical energy generated. Direct use of geothermal and solar heat is also included here. Electricity is accounted for at the same heat value as electricity in final consumption (i.e., 1GWh = 0.000086 Mtoe). Heat includes heat that is produced for sale and is accounted for in the transformation sector.

Production

Production is the production of primary energy, i.e., hard coal, lignite, peat, crude oil, NGLs, natural gas, biofuels and waste, nuclear, hydro, geothermal, solar and the heat from heat pumps that is extracted from the ambient environment production is calculated after removal of impurities (e.g., sulphur from natural gas).

Imports and exports

Imports and exports comprise amounts having crossed the national territorial boundaries of the country, whether or not customs clearance has taken place.

a) Oil and natural gas

Quantities of crude oil and oil products imported or exported under processing agreements (i.e., refining on account) are included. Quantities of oil in transit are excluded. Crude oil, NGL and natural gas are reported as coming from the country of origin; refinery feedstock and oil products are reported as coming from the country of last consignment. Re-exports of oil imported for processing within bonded areas are shown as exports of product from the processing country to the final destination.

b) Coal/peat

Imports and exports comprise the amount of fuels obtained from or supplied to other countries, whether or not there is an economic or customs union between the relevant countries. Coal in transit is not included.

c) Electricity

Amounts are considered as imported or exported when they have crossed the national territorial boundaries of the country.

International marine bunkers

International marine bunkers cover those quantities delivered to ships of all flags that are engaged in international navigation. The international navigation may take place at sea, on inland lakes and waterways, and in coastal waters. Consumption by ships engaged in domestic navigation is excluded. The domestic/International split is determined on the basis of port of departure and port of arrival, and not by the flag or nationality of the ship. Consumption by fishing vessels and by military forces is also excluded.

International aviation bunkers

International aviation bunkers covers deliveries of aviation fuels to aircraft for international aviation. Fuels used by airlines for their road vehicles are excluded. The domestic/International split should be determined ON THE BASIS OF DEPARTURE AND LANDING LOCATIONS AND NOT BY THE NATIONALITY OF THE AIRLINE; For many countries this incorrectly excludes fuel used by domestically owned carriers for their international departures.

Stock changes

Stock changes reflects the difference between opening stock levels on the first day of the year and closing levels on the last day of the year of stocks on national territory held by producers, importers, energy transformation industries and large consumers. A stock build is shown as a negative number, and a stock draw as a positive number.

Total primary energy supply (TPES)

Total primary energy supply (TPES) is made up of production + imports – exports – international marine bunkers – international aviation bunkers $\pm$ stock changes. For the world total, international marine bunkers and international aviation bunkers are not subtracted from TPES.

Transfers

Transfers includes both inter-product transfers, products transferred and recycled products.

Statistical differences

Statistical differences include the sum of the unexplained statistical differences for individual fuels, as they appear in the basic energy statistics. It also includes the statistical differences that arise because of the variety of conversion factors in the coal/peat and oil columns.

Electricity plants

Electricity plants refer to plants which are designed to produce electricity only. If one or more units of the plant is a CHP unit (and the inputs and outputs cannot be distinguished on a unit basis) then the whole plant is designated as a CHP plant. Both main activity producers and auto producer plants are included here.

Combined heat and power plants

Combined heat and power plants refers to plants which are designed to produce both heat and electricity. Sometimes referred to as cogeneration power stations. If possible, fuel inputs and electricity/heat outputs are on a unit basis rather than on a plan basis. However, if data are not available on a unit basis, the convention for defining a CHP plan noted above is adopted. Both main activity producers and auto producer plants are included here.

Blast furnaces

Blast furnaces contain inputs to and outputs of fuels from blast furnaces.

Gas works

Gas works is treated similarly to electricity generation, with the quantity produced appearing as a positive figure in the coal/peat column or the natural gas column after blending with natural gas, inputs as negative entries in the coal/peat and oil products columns, and conversion losses appearing in the total column.

Coke ovens

Coke ovens contain losses in transformation of coal from primary to secondary fuel and from secondary to tertiary fuels (hard coal to coke and patent fuel, lignite to BKB, etc.).

Oil refineries

Oil refineries show the use of primary energy for the manufacture of finished oil products and the corresponding output. Thus, the total reflects transformation losses. In certain cases the data in the total column are positive numbers. This can be due to either problem in the primary refinery balance or to the fact that the IEA uses regional net calorific values for oil products.

Petrochemical plants

Petrochemical plants covers backflows returned from the petrochemical industry. Note that backflows from oil products that are used for non-energy purposes (i.e white spirit and lubricants) are not included here, but in non-energy use.

Liquefaction plants

Liquefaction plants include diverse liquefaction processes, such as coal liquefaction plants and gas-to-liquid plants.

Other transformation

Other transformation covers non-specified transformation not shown elsewhere, such as the transformation of primary solid biofuels into charcoal.

Energy industry own use

Energy industry own use contains the primary and secondary energy consumed by transformation industries for heating, pumping, traction and lighting purposes (ISIC 05, 06, 19 and 35, Group 091 and Classes 0892 and 0721).

Losses

Losses include losses in energy distribution, transmission and transport.

Total final consumption (TFC)

Total final consumption (TFC) is the sum of consumption by the different end-use sectors; Backflows from the petrochemical industry are not included in final consumption.

Industry

Industry consumption is specified in the following subsectors (energy used for transport by industry is not included here but reported under transport):

- Iron and steel industry [ISIC Group 241 and Class 2431];
- Chemical and petrochemical industry [ISIC Divisions 20 and 21] excluding petrochemical feedstock;
- Non-ferrous metals basic industries [ISIC Group 242 and class 2432];
- Non-metallic minerals such as glass, ceramic, cement, etc. [ISIC Division 23];
- Transport equipment [ISIC Divisions 29 and 30];
- Machinery comprises fabricated metal product, machinery and equipment other than transport equipment [ISIC Divisions 25 to 28]

Industry (ctd.)

- Mining (excluding fuels) and quarrying [ISIC Divisions 07 and 08 and Group 099];
- Food and tobacco [ISIC Divisions 10 and 12];
- Paper, pulp and printing [ISIC Divisions 17 and 18];
- Wood and wood products (other than pulp and paper) [ISIC Division 16];
- Construction [ISIC Divisions 41 and 43];
- Textile and leather [ISIC Divisions 13 to 15];
- Non-specified (any manufacturing industry not included above) [ISIC Divisions 22, 31 and 32].

Transport

Transport includes all fuels used for transport [ISIC Divisions 39 to 51]. It includes transport in industry and covers domestic aviation, road, rail, pipeline transport, domestic navigation and non-specified transport. Fuel used for ocean, coastal and inland fishing (included under fishing and military consumption (included in other non-specified) are excluded from transport.

Please note that international marine and international aviation bunkers are also included here for world total.

Other

Other covers residential, commercial and public services [ISIC Divisions 33, 36-39, 45-47, 52, 53, 56, 58-66, 68-75, 77-82, 84 (excluding Class 8422) 85-88, 90-99], agriculture/forestry [ISIC Divisions 01 and 02], fishing [ISIC Division 03] and non-specified consumption.

Non-energy use

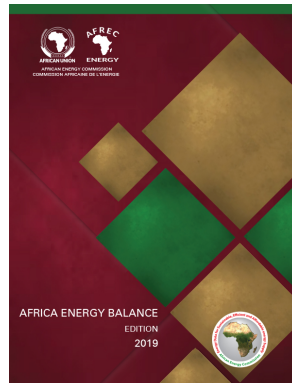
Non-energy use covers those fuels that are used as raw materials in the different sectors and are not consumed as a fuel or transformed into another fuel. Non-energy use also includes petrochemical feedstock. Non-energy use is shown separately in final consumption under the heading non-energy use.

NOTES

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978-9931-9593-0-4