

ENERGY STATISTICS POCKETBOOK 2018



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Energy Statistics Pocketbook



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Department of Economic and Social Affairs

The Department of Economic and Social Affairs of the United Nations Secretariat is a vital interface between global policies in the economic, social and environmental spheres and national action. The Department works in three main interlinked areas: (i) it compiles, generates and analyses a wide range of economic, social and environmental data and information on which States Members of the United Nations draw to review common problems and to take stock of policy options; (ii) it facilitates the negotiations of Member States in many intergovernmental bodies on joint courses of action to address ongoing or emerging global challenges; and (iii) it advises interested Governments on the ways and means of translating policy frameworks developed in United Nations conferences and summits into programmes at the country level and, through technical assistance, helps build national capacities.

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The term “country” as used in this publication also refers, as appropriate, to territories or areas.

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Introduction

This publication is the first in a series of pocketbook compilations on energy statistics designed to highlight the availability of data on various aspects of energy production, transformation and use and its linkages to other key statistics. Energy is central to the achievement of the 2030 Agenda for Sustainable Development and the Paris Agreement on climate change, and sound energy statistics are the basis for the reliable measurement of progress, thereby assisting the formulation of policy measures to achieve international and national sustainable development goals.

The information in this publication is primarily based on the energy data collection carried out by the Industrial and Energy Statistics Section of the United Nations Statistics Division (UNSD). The data are available in the 2015 editions of the Energy Statistics Yearbook, the Energy Balances and the Electricity Profiles, three annual UNSD publications that present energy data in basic indicator formats, as well as formats that show the overall picture of production, trade, transformation and consumption of energy products in more than 200 countries and territories.

The present publication aims at providing additional information by highlighting key indicators and using different visualizations to also show developments, dependencies and distributions in a way that standard data tables cannot convey.

More information about the data collection process, as well as the three publications underlying the information in this pocketbook, are available at <https://unstats.un.org/unsd/energy>.

Acknowledgements

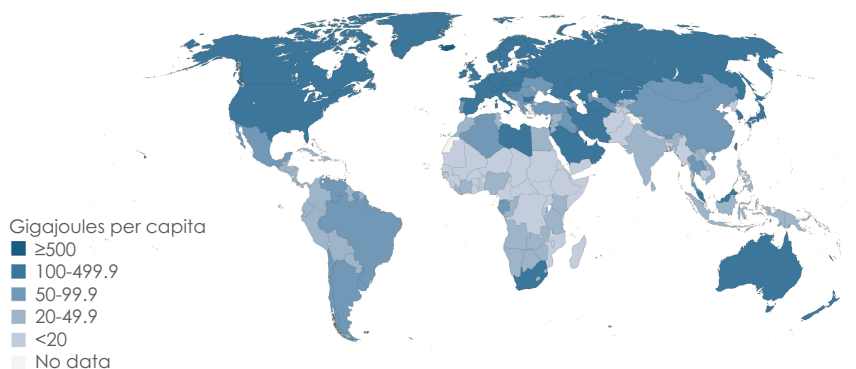
This publication has been compiled by the Industrial and Energy Statistics Section of UNSD, which is headed by Mr. Ralf Becker. The conceptual design of this pocketbook has been carried out by Mr. Becker, Mr. Leonardo Souza, Ms. Agnieszka Koscielniak and Ms. Costanza Giovannelli, with Ms. Giovannelli taking the lead in the graphic design, supported by Mr. Graham Osborn and Ms. Peng Guo. The energy data used for the pocketbook has been collected and processed by the staff of the Industrial and Energy Statistics Section under the guidance of Mr. Souza.

Enquiries, comments and suggestions for improving this publication are welcome and should be addressed to: energy_stat@un.org.

Total energy supply

1. Total energy supply per capita, 2015

Gigajoules per capita



Source: United Nations Energy Database.

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FACTS AND FIGURES

World total energy supply¹ (TES) increased by 60% in 2015 compared to 1990, exceeding 550 EJ. This growth was driven by Asia, where Chinese total energy supply increased almost fourfold during this period, accounting for 22% of world TES in 2015.

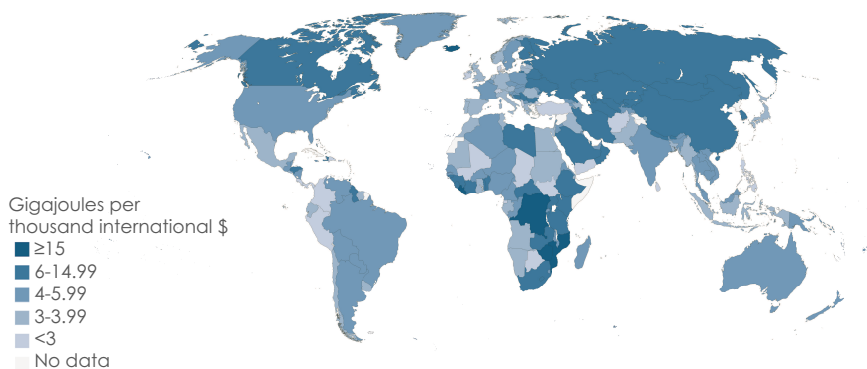
The European share of world TES fell from 37% in 1990 to 19% in 2015. A similar trend was observed in the United States, whose share of TES dropped by 7 percentage points since 1990 to reach 16% in 2015.

Oil remained the dominant fuel in the energy mix in 2015 (accounting for 30% of TES in 2015), followed closely by coal (representing almost 29% of TES in 2015).

(1) International aviation and marine bunkers are excluded from world total energy supply.

2. Energy intensity², 2015

Gigajoules per thousand international \$



Source: United Nations Energy Database.

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3. Energy supply (total, per capita and energy intensity²), major countries, 2015

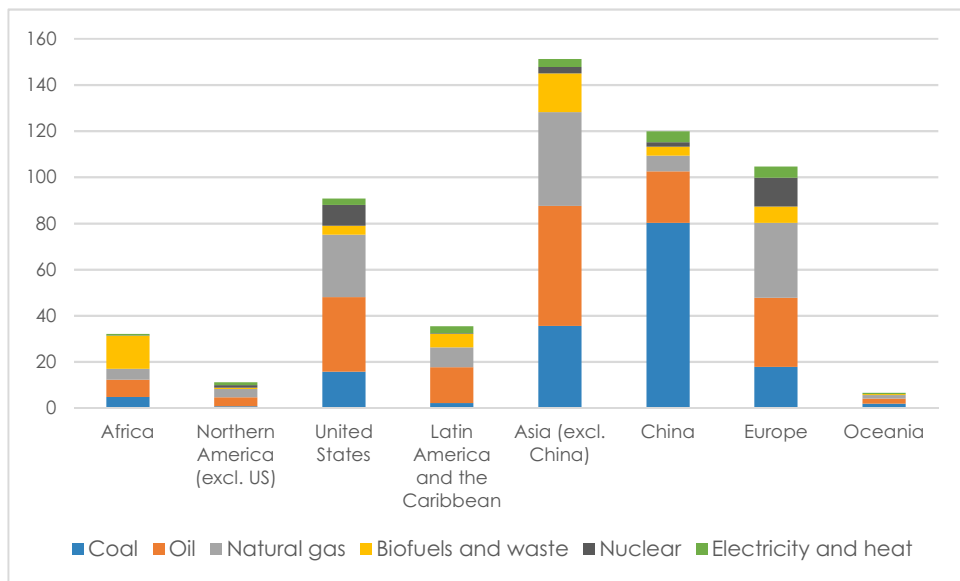
Exajoules, gigajoules per capita and gigajoules per thousand international \$

Country	TES	Country	TES per capita	Country	Energy intensity ²
China	119.9	Iceland	950.2	Liberia	26.0
United States	90.7	Qatar	847.5	Iceland	22.2
India	36.7	Trinidad and Tobago	599.8	Dem. Rep. Congo	21.1
Russian Federation	29.8	Curaçao	592.0	Trinidad and Tobago	19.2
Japan	18.0	Bahrain	420.4	Mozambique	17.2
Germany	12.9	United Arab Emirates	391.7	Zimbabwe	15.6
Brazil	12.3	Kuwait	374.5	Togo	14.3
Republic of Korea	11.4	Saudi Arabia	354.2	Turkmenistan	13.9
World	551.7	World	75.1	World	5.1

(2) Energy intensity is calculated by dividing the total energy supply by GDP, PPP (constant 2011 international \$)

4. Total energy supply by region and source, 2015

Exajoules



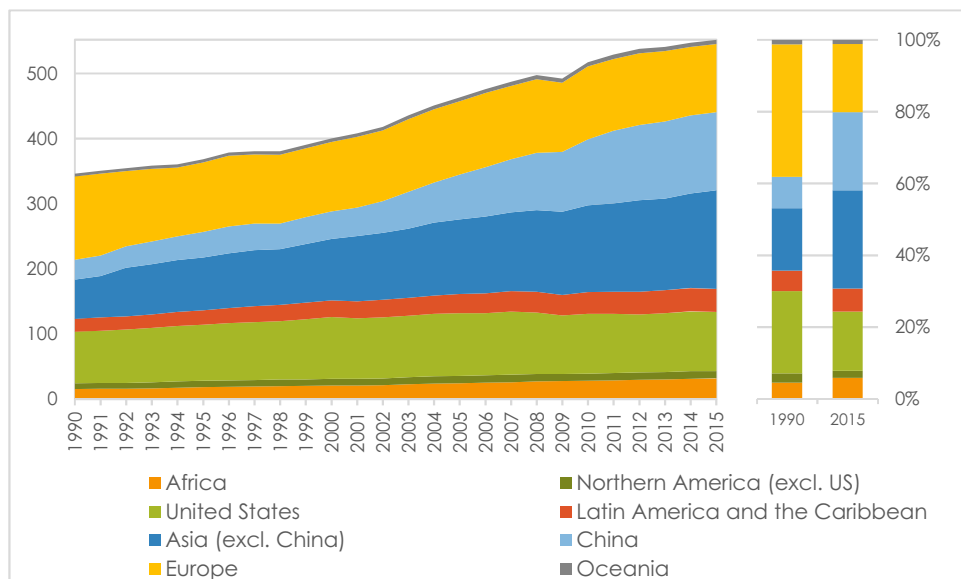
5. Total energy supply by region and source, 2015

Exajoules

Region	Coal	Oil	Natural gas	Biofuels & waste	Nuclear	Electricity and heat	TES
Africa	4.8	7.5	4.7	14.3	0.1	0.7	32.1
Northern America (excl. US)	0.8	3.8	3.6	0.6	1.1	1.3	11.2
United States	15.8	32.2	27.1	3.9	9.0	2.8	90.7
Latin America and the Caribbean	2.1	15.5	8.7	5.7	0.4	3.1	35.4
Asia (exc. China)	35.5	52.1	40.7	16.7	2.8	3.4	151.2
China	80.3	22.3	6.7	4.0	1.8	4.8	119.9
Europe	17.8	30.0	32.4	7.0	12.6	4.8	104.6
Oceania	1.9	2.2	1.5	0.3	-	0.5	6.5
World	158.9	165.6	125.4	52.6	27.8	21.4	551.7

6. Total energy supply by region, 1990 – 2015

Exajoules



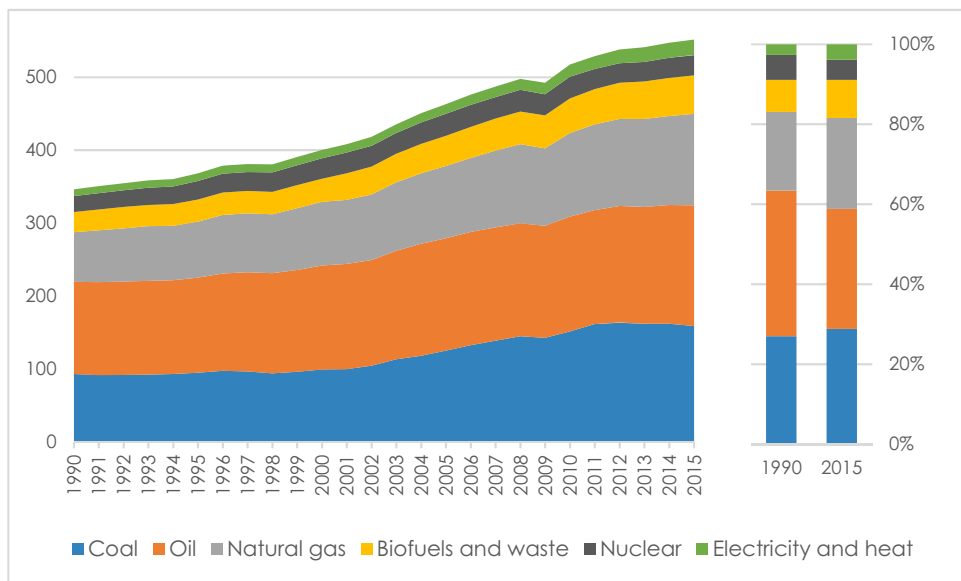
7. Total energy supply by region, 1990, 2000, 2010 and 2015

Exajoules

Region	1990	2000	2010	2015
Africa	15.7	20.8	28.3	32.1
Northern America (excl. US)	8.8	10.5	10.9	11.2
United States	79.5	94.5	92.0	90.7
Latin America and the Caribbean	19.6	25.8	33.0	35.4
Asia (excl. China)	60.2	94.1	133.0	151.2
China	30.4	42.5	101.6	119.9
Europe	127.9	106.6	111.8	104.6
Oceania	4.4	5.5	6.5	6.5
World	346.4	400.4	517.2	551.7

8. World total energy supply by source, 1990 – 2015

Exajoules



9. World total energy supply by source, 1990, 2000, 2010 and 2015

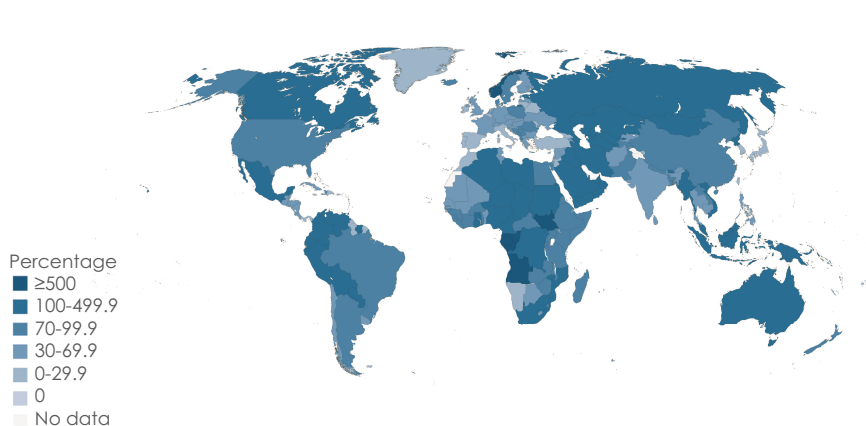
Exajoules

Source	1990	2000	2010	2015
Coal	93.5	99.3	151.7	158.9
Oil	125.9	142.7	157.1	165.6
Natural gas	68.2	87.1	114.6	125.4
Biofuels and waste	27.7	31.6	47.3	52.6
Nuclear	21.8	28.0	29.8	27.8
Electricity and heat	9.3	11.7	16.7	21.4
Total	346.4	400.4	517.2	551.7

Primary energy production

10. Energy self-sufficiency³, 2015

Percentage



Source: United Nations Energy Database.

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FACTS AND FIGURES

World primary energy production was 572 EJ in 2015, showing a 60% increase compared to 1990. Coal, oil and natural gas represented more than 82% of total primary energy production, and oil continued to be the largest type of fuel in the production mix, accounting for 32% of the total.

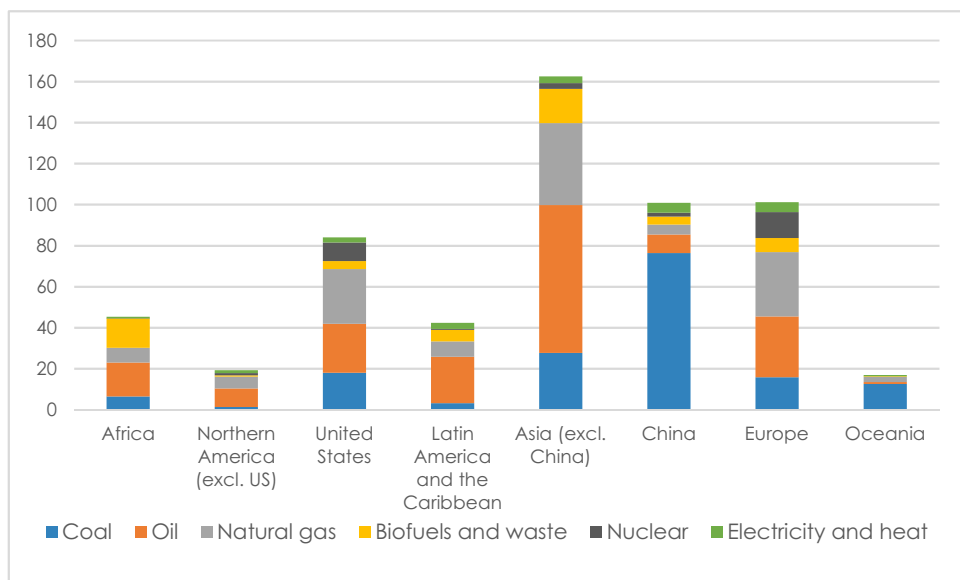
A significant share of 2015 primary energy production occurred in a handful of countries:

- China and the United States produced more than half of all primary coal (59%);
- The six biggest producers of oil (Saudi Arabia, United States, Russian Federation, Canada, China and United Arab Emirates) produced more than half of all primary oil (53%);
- Five natural gas producers (United States, Russian Federation, Iran, Qatar and Canada) produced more than half of all natural gas (53%).

(3) Energy self-sufficiency is calculated as the ratio between primary energy production and total energy supply expressed in percentage

11. Primary energy production by region and source, 2015

Exajoules



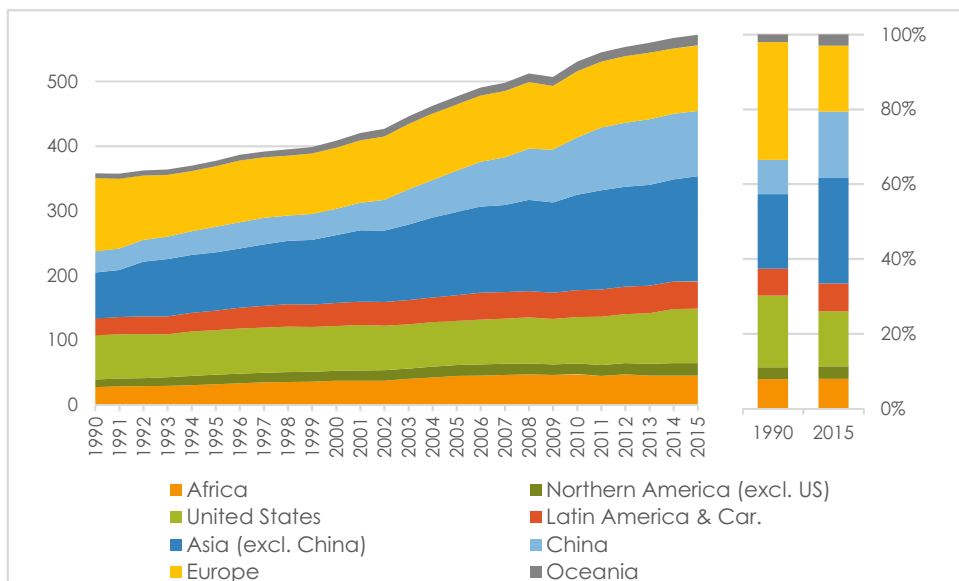
12. Primary energy production by region and source, 2015

Exajoules

Source	Coal	Oil	Natural gas	Biofuels and waste	Nuclear	Electricity & heat	Total
Africa	6.5	16.6	7.1	14.3	0.1	0.6	45.2
Northern America (excl. US)	1.3	9.1	5.8	0.6	1.1	1.5	19.3
United States	18.1	23.9	26.7	3.9	9.0	2.5	84.0
Latin America and the Caribbean	3.2	22.6	7.5	5.8	0.4	3.1	42.4
Asia (excl. China)	27.7	72.1	40.0	16.7	2.8	3.3	162.5
China	76.4	9.0	4.8	4.0	1.8	4.9	100.9
Europe	15.8	29.7	31.4	6.8	12.6	4.8	101.1
Oceania	12.6	0.9	2.6	0.3	0	0.5	16.9
World	161.5	183.7	125.7	52.4	27.8	21.3	572.4

13. Total primary energy production by region, 1990 – 2015

Exajoules



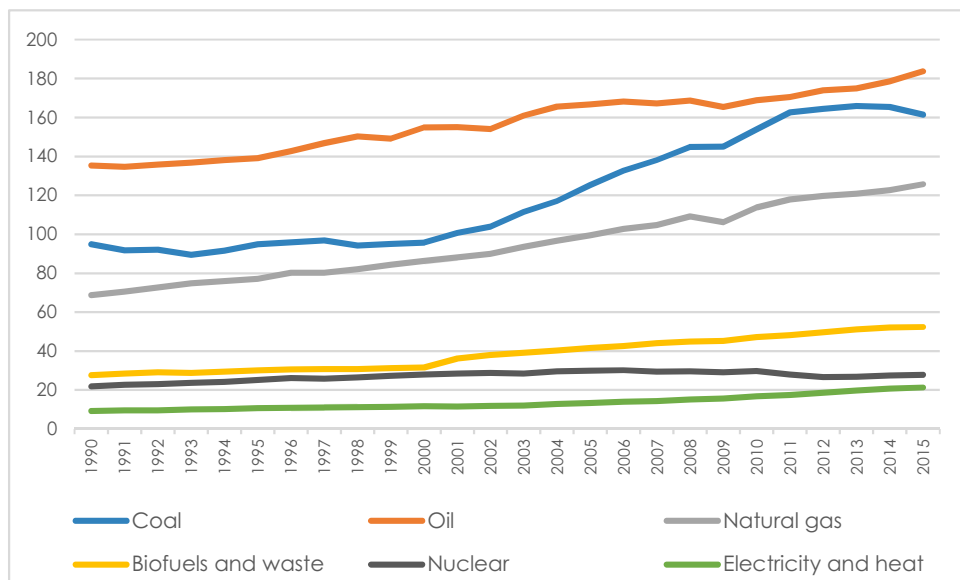
14. Total primary energy production by region, 1990, 2000, 2010 and 2015

Exajoules

Region	1990	2000	2010	2015
Africa	27.9	37.2	47.7	45.2
Northern America (excl. US)	11.5	15.5	16.5	19.3
United States	68.6	69.3	71.9	84.0
Latin America and the Caribbean	25.7	35.4	41.3	42.4
Asia (excl. China)	71.2	104.8	147.4	162.5
China	32.7	40.8	88.6	100.9
Europe	112.8	94.6	102.5	101.1
Oceania	7.3	10.6	14.5	16.9
World	357.6	408.2	530.3	572.4

15. World primary energy production by source, 1990 – 2015

Exajoules



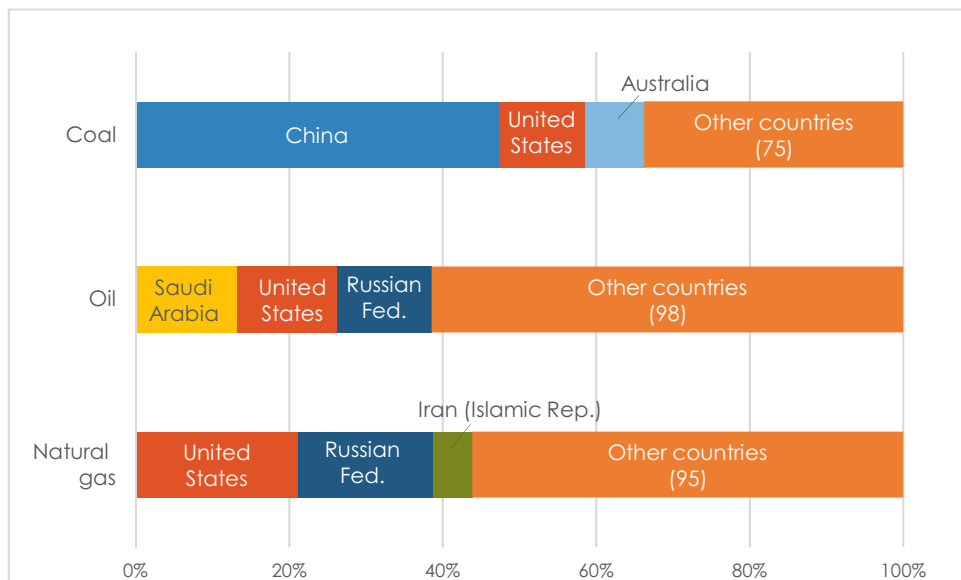
16. World primary energy production by source, 1990, 2000, 2010 and 2015

Percentage

Source	1990	2000	2010	2015
Coal	26.5%	23.5%	29.0%	28.2%
Oil	37.8%	37.9%	31.8%	32.1%
Natural gas	19.2%	21.2%	21.5%	22.0%
Biofuels and waste	7.7%	7.7%	8.9%	9.2%
Nuclear	6.1%	6.9%	5.6%	4.9%
Electricity and heat	2.6%	2.9%	3.2%	3.7%
Total	100.0%	100.0%	100.0%	100.0%

17. Primary production of coal, oil, and natural gas, major countries, 2015

Percentage

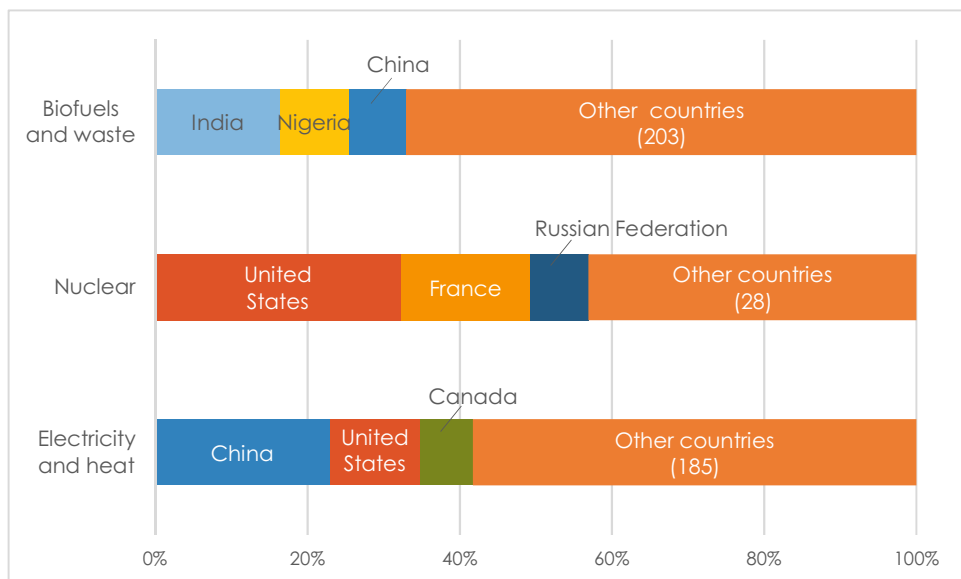


18. Primary production of coal, oil, and natural gas, major countries, 2015

Exajoules

Coal		Oil		Natural gas	
China	76.4	Saudi Arabia	24.4	United States	26.7
United States	18.1	United States	23.9	Russian Federation	22.0
Australia	12.5	Russian Federation	22.6	Iran (Islamic Rep.)	6.5
India	11.1	Canada	9.1	Qatar	6.1
Indonesia	11.0	China	9.0	Canada	5.8
Russian Federation	8.4	UAE	7.6	China	4.8
South Africa	6.1	Iraq	7.3	Norway	4.3
Colombia	2.6	Iran (Islamic Rep.)	6.9	Saudi Arabia	4.2
Others	15.3	Others	73.0	Others	45.4
World	161.5	World	183.7	World	125.7

19. Primary production of biofuels and waste, nuclear, and electricity and heat, major countries, 2015 - Percentage

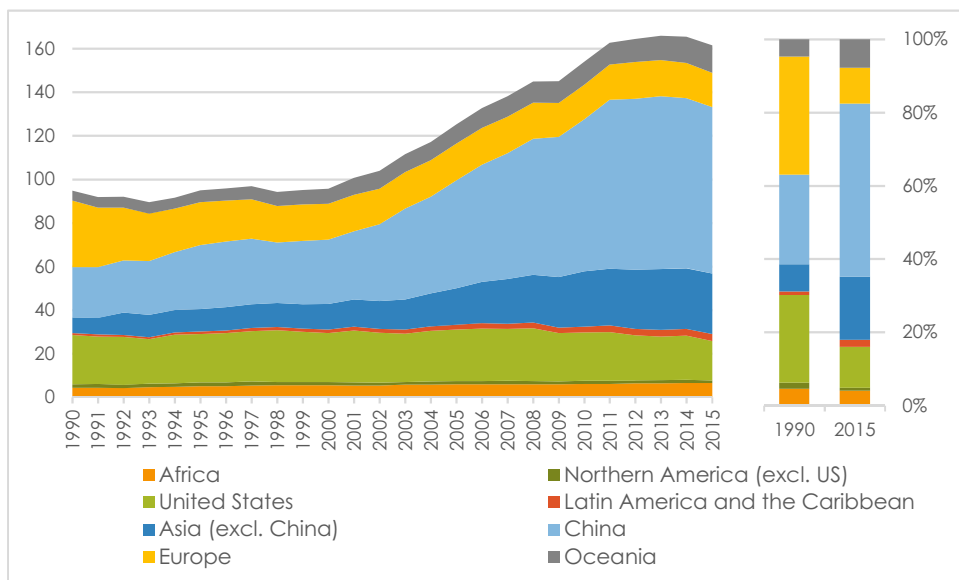


20. Primary production of biofuels and waste, nuclear and electricity and heat, major countries, 2015 - Exajoules

Biofuels and waste		Nuclear		Electricity and heat	
India	8.6	United States	8.97	China	4.88
Nigeria	4.7	France	4.72	United States	2.53
China	4.0	Russian Federation	2.13	Canada	1.48
United States	3.9	China	1.84	Brazil	1.37
Brazil	3.5	Republic of Korea	1.78	Russian Federation	0.62
Indonesia	2.4	Canada	1.10	India	0.57
Ethiopia	1.3	Germany	0.99	Japan	0.57
Germany	1.3	Ukraine	0.95	Italy	0.54
Others	22.7	Others	5.30	Others	8.72
World	52.4	World	27.78	World	21.29

21. Primary production of coal by region, 1990 – 2015

Exajoules



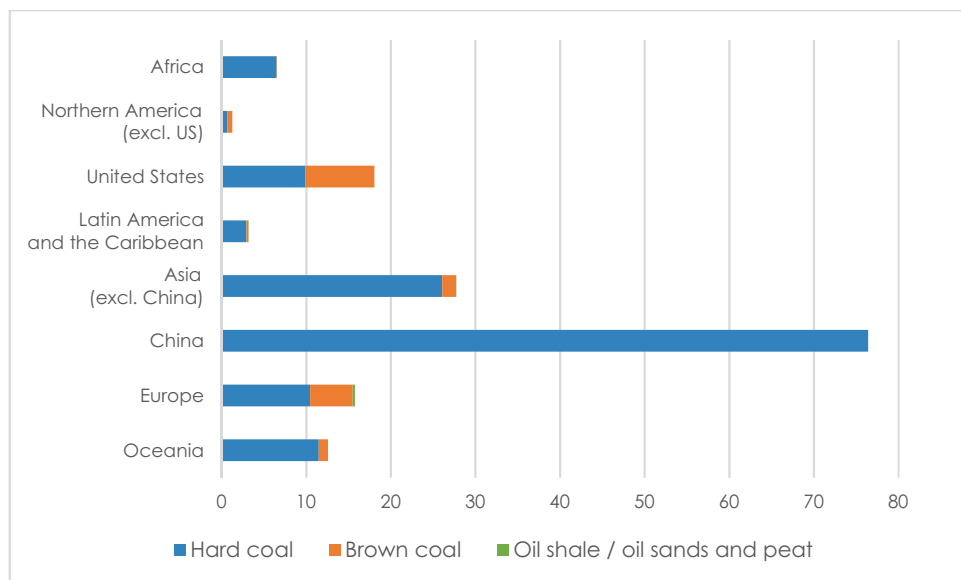
22. Primary production of coal by region, 1990, 2000, 2010 and 2015

Exajoules

Region	1990	2000	2010	2015
Africa	4.3	5.5	6.1	6.5
Northern America (excl. US)	1.6	1.4	1.4	1.3
United States	22.7	22.5	22.3	18.1
Latin America and the Caribbean	0.9	1.6	2.6	3.2
Asia (excl. China)	7.1	11.8	25.5	27.7
China	23.1	29.5	69.7	76.4
Europe	30.6	16.5	15.8	15.8
Oceania	4.5	7.0	10.6	12.6
World	94.8	95.8	153.9	161.5

23. Primary production of coal by region and type of fuel, 2015

Exajoules



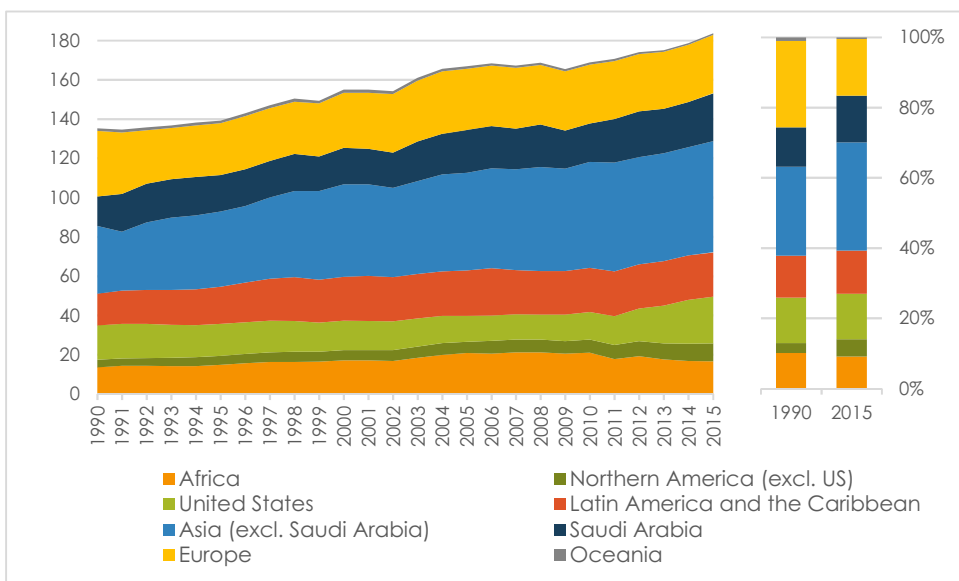
24. Primary production of coal by region and type of fuel, 2015

Exajoules

Region	Hard coal	Brown coal	Oil shale/peat	Total
Africa	6.5	6.5
Northern America (excl. US)	0.7	0.6	-	1.3
United States	9.9	8.1	-	18.1
Latin America and the Caribbean	2.9	0.2	...	3.2
Asia (excl. China)	26.1	1.6	...	27.7
China	76.4	-	-	76.4
Europe	10.5	5.0	0.3	15.8
Oceania	11.5	1.1	-	12.6
World	144.5	16.7	0.3	161.5

25. Primary production of oil by region, 1990 – 2015

Exajoules



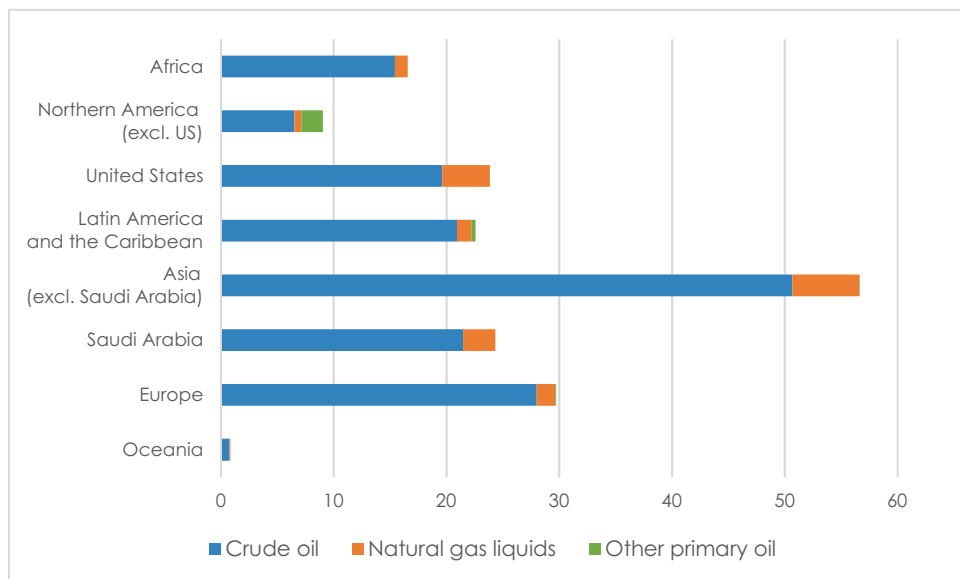
26. Primary production of oil by region, 1990, 2000, 2010 and 2015

Exajoules

Region	1990	2000	2010	2015
Africa	13.6	17.1	21.0	16.6
Northern America (excl. US)	3.8	5.2	6.7	9.1
United States	17.6	14.9	14.0	23.9
Latin America and the Caribbean	16.1	22.3	22.5	22.6
Asia (excl. Saudi Arabia)	34.3	47.2	54.0	56.7
Saudi Arabia	15.1	18.7	19.6	24.4
Europe	33.3	27.9	29.9	29.7
Oceania	1.4	1.6	1.2	0.9
World	135.3	154.9	168.8	183.7

27. Primary production of oil by region and type of fuel, 2015

Exajoules



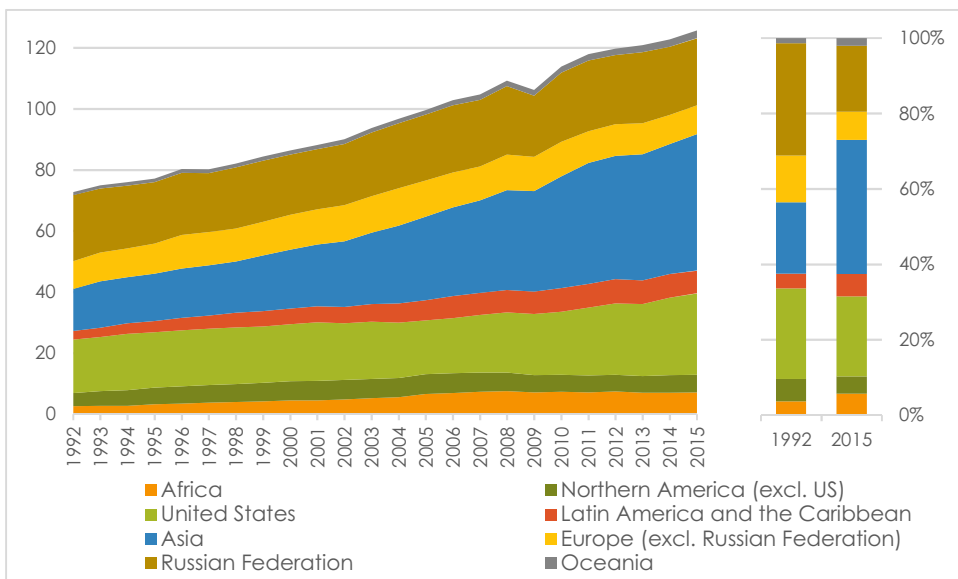
28. Primary production of oil by region and type of fuel, 2015

Exajoules

Region	Crude oil	Natural gas liquids	Other primary oil	Total
Africa	15.4	1.1	-	16.6
Northern America (excl. US)	6.5	0.6	1.9	9.1
United States	19.6	4.2	...	23.9
Latin America and the Caribbean	21.0	1.3	0.3	22.6
Asia (excl. Saudi Arabia)	50.7	6.0	...	56.7
Saudi Arabia	21.5	2.9	-	24.4
Europe	28.0	1.6	0.1	29.7
Oceania	0.8	0.1	-	0.9
World	163.6	17.8	2.3	183.7

29. Production of natural gas by region, 1992 – 2015

Exajoules

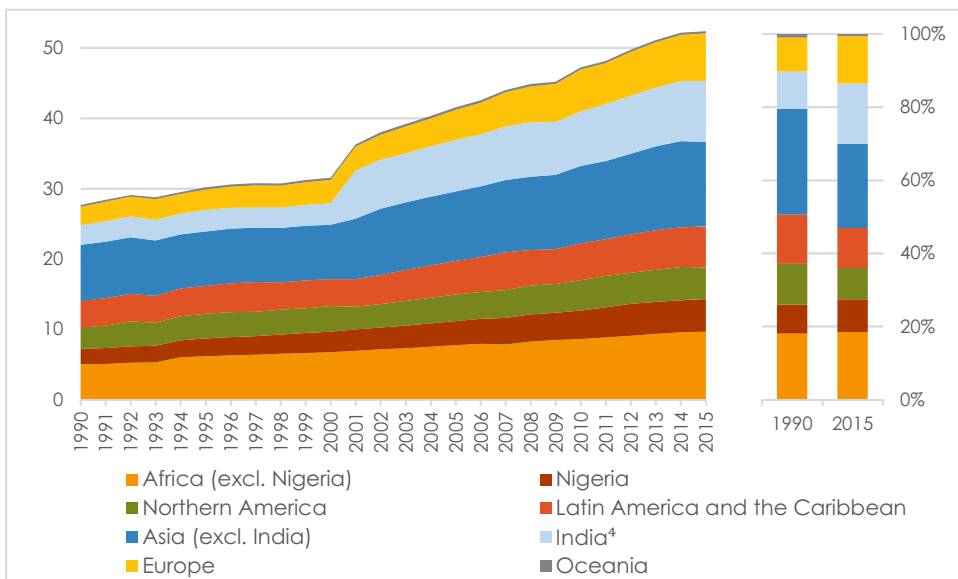
**30. Production of natural gas by region, 1992, 2000, 2010 and 2015**

Exajoules

Region	1992	2000	2010	2015
Africa	2.6	4.5	7.3	7.1
Northern America (excl. United States)	4.3	6.2	5.5	5.8
United States	17.5	18.7	20.7	26.7
Latin America and the Caribbean	2.8	5.1	7.7	7.5
Asia	13.8	19.4	36.6	44.7
Europe (excl. Russian Federation)	9.0	11.4	11.3	9.4
Russian Federation	21.7	19.7	22.6	22.0
Oceania	1.0	1.4	2.0	2.6
World	72.7	86.4	113.8	125.7

31. Primary production of biofuels and waste by region, 1990 – 2015

Exajoules



32. Primary production of biofuels and waste by region, 1990, 2000, 2010 and 2015

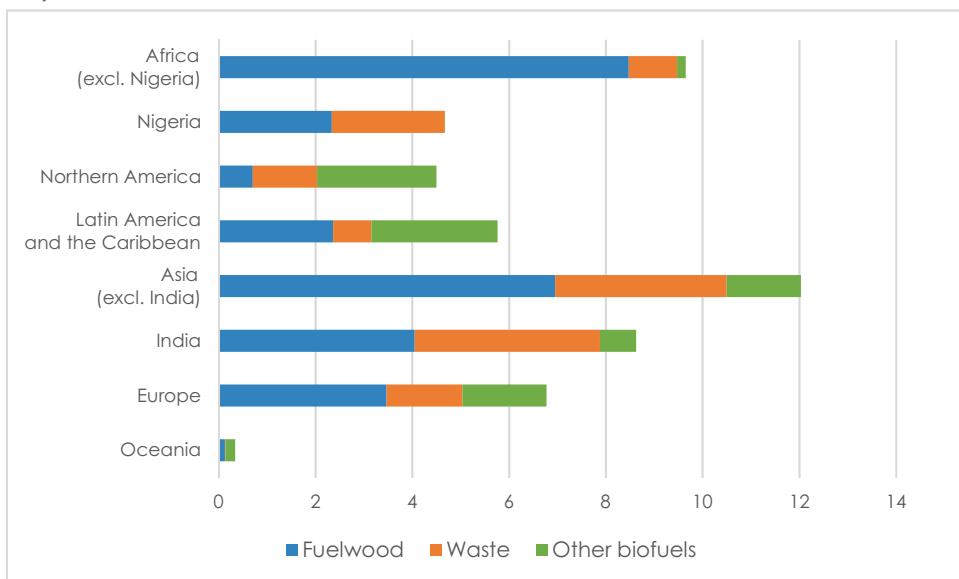
Exajoules

Region	1990	2000	2010	2015
Africa (excl. Nigeria)	5.0	6.7	8.6	9.7
Nigeria	2.2	2.9	4.1	4.7
Northern America	3.1	3.6	4.3	4.5
Latin America and the Caribbean	3.7	3.8	5.2	5.8
Asia (excl. India)	8.0	7.7	11.0	12.0
India ⁴	2.8	3.0	7.8	8.6
Europe	2.6	3.3	5.9	6.8
Oceania	0.3	0.3	0.3	0.3
World	27.7	31.5	47.2	52.4

(4) There is a break in primary energy production of biofuels and waste between 2000 and 2001 following a methodological change in accounting of biofuels in India.

33. Primary production of biofuels and waste by region and type of fuel, 2015

Exajoules

**34. Primary production of biofuels and waste by region and type of fuel, 2015**

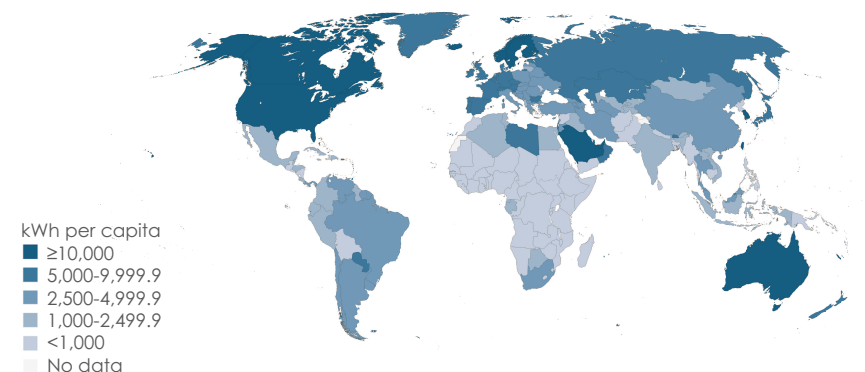
Exajoules

Region	Fuelwood	Waste	Other biofuels	Total
Africa (excl. Nigeria)	8.5	1.0	0.2	9.7
Nigeria	2.3	2.3	0+	4.7
Northern America	0.7	1.3	2.5	4.5
Latin America and the Caribbean	2.4	0.8	2.6	5.8
Asia (excl. India)	7.0	3.5	1.5	12.0
India	4.1	3.8	0.7	8.6
Europe	3.5	1.6	1.7	6.8
Oceania	0.1	0.01	0.2	0.3
World	28.5	14.4	9.5	52.4

Electricity

35. Electricity generation per capita, 2015

Kilowatt hours per capita



Source: United Nations Energy Database.

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FACTS AND FIGURES

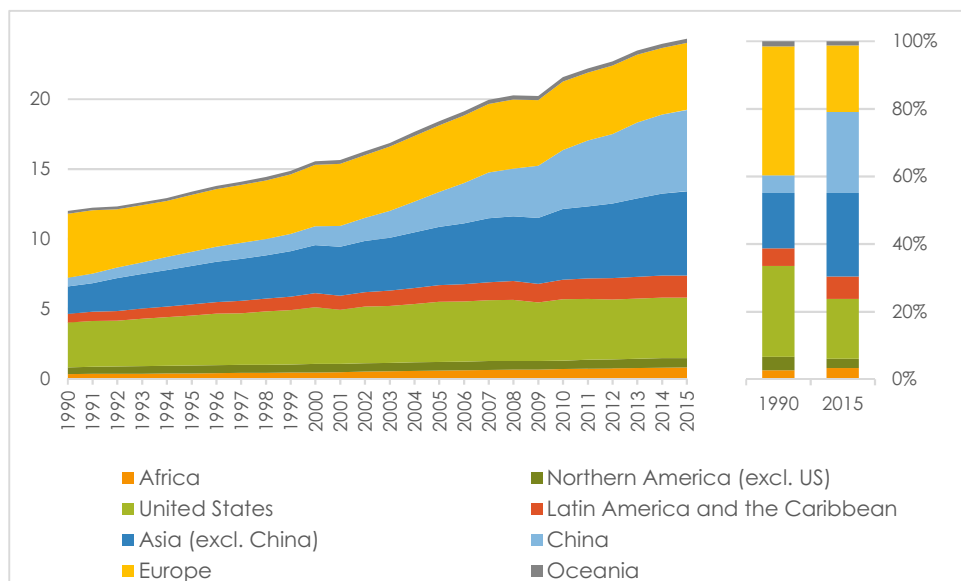
World electricity generation more than doubled from 1990 to 2015, reaching above 24,300 TWh in 2015. The biggest absolute growth from 1990 to 2015 was observed for electricity generated from coal (around 5,200 TWh or +115%) and natural gas (around 3,100 TWh or +167%) while the fastest growth was visible for electricity generated from solar, wind and other sources⁵ (+2,712% or 1,136 TWh).

While almost 80% of electricity in 2015 was generated from thermal (68% or 16,595 TWh) and nuclear sources (11% or 2,570 TWh), renewable electricity accounted for over 50% of global electricity capacity additions over the past five years (or 646 GW), reaching 1,972 GW in 2015 (31% of total electricity capacity).

(5) "Solar, wind and other sources" refers to solar, wind, geothermal, chemical heat, tide, wave and marine and other non-specified sources

36. Total electricity generation by region, 1990 – 2015

Petawatt hours



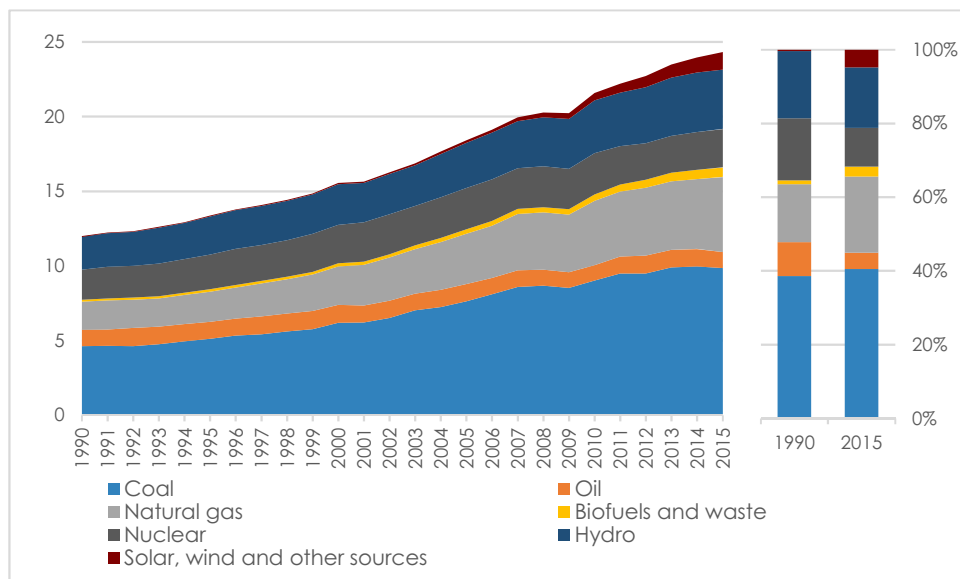
37. Total electricity generation by region, 2015

Terawatt hours

Region	1990	2000	2010	2015
Africa	312.3	436.8	677.1	791.6
Northern America (excl. US)	482.9	606.7	605.2	672.1
United States	3,218.6	4,052.7	4,378.4	4,317.2
Latin America and the Caribbean	624.2	1,006.1	1,407.1	1,594.0
Asia (excl. China)	1,959.4	3,437.9	5,067.9	6,026.4
China	621.2	1,355.6	4,207.2	5,814.6
Europe	4,571.1	4,383.5	4,907.7	4,797.5
Oceania	192.5	257.7	308.1	308.3
World	11,982.1	15,537.1	21,558.8	24,321.6

38. World electricity generation by source, 1990 – 2015

Petawatt hours



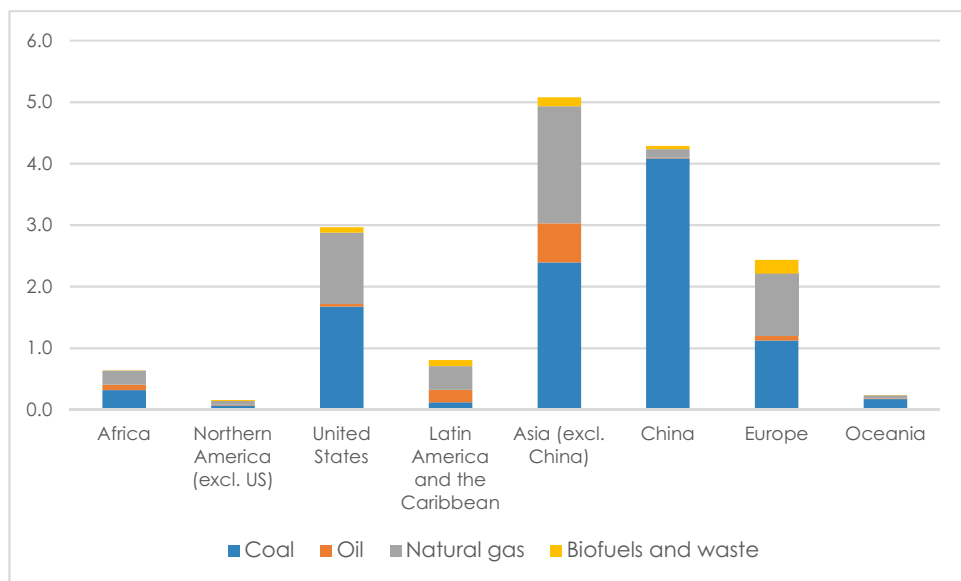
39. World electricity generation by source, 1990, 2000, 2010 and 2015

Terawatt hours

Type	1990	2000	2010	2015
Thermal	7,729.8	10,157.8	14,784.7	16,595.5
- Coal	4,623.3	6,189.5	9,009.3	9,838.1
- Oil	1,102.9	1,200.5	1,033.5	1,089.7
- Natural gas	1,878.9	2,571.6	4,296.2	5,017.6
- Biofuels and waste	124.6	196.2	445.6	650.1
Nuclear	2,019.8	2,589.0	2,756.3	2,569.9
Hydro	2,190.7	2,706.5	3,528.4	3,978.1
Solar, wind and other sources	41.9	83.7	489.4	1,178.2
Total	11,982.1	15,537.1	21,558.8	24,321.6

40. Thermal electricity generation by region and source, 2015

Petawatt hours



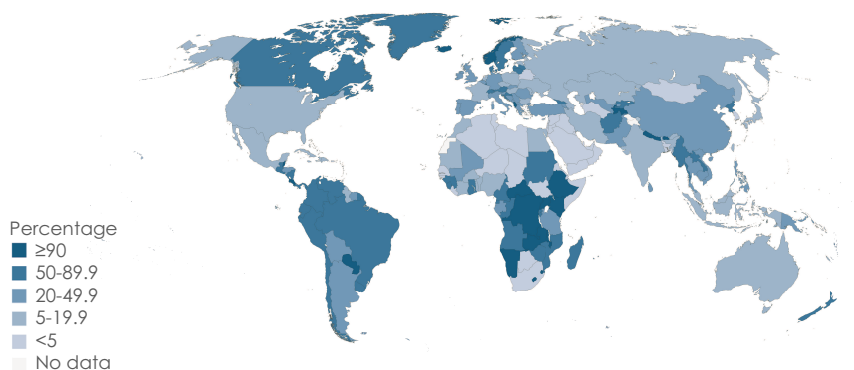
41. Thermal electricity generation by region and source, 2015

Terawatt hours

Region	Coal	Oil	Natural gas	Biofuels and waste	Total
Africa	315.1	90.7	227.0	5.6	638.4
Northern America (excl. US)	67.7	9.3	64.7	13.3	154.9
United States	1,671.9	43.4	1,161.9	85.6	2,962.9
Latin America and the Caribbean	121.4	199.6	383.5	101.6	806.1
Asia (excl. China)	2,391.5	634.4	1,906.6	142.0	5,074.4
China	4,083.2	11.2	138.5	51.3	4,284.2
Europe	1,122.3	74.5	1,014.6	223.3	2,434.6
Oceania	168.7	11.9	55.1	4.4	240.0
World	9,942	1,075	4,952	627	16,595

42. Renewable electricity share in total electricity generation, 2015

Percentage



Source: United Nations Energy Database.

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

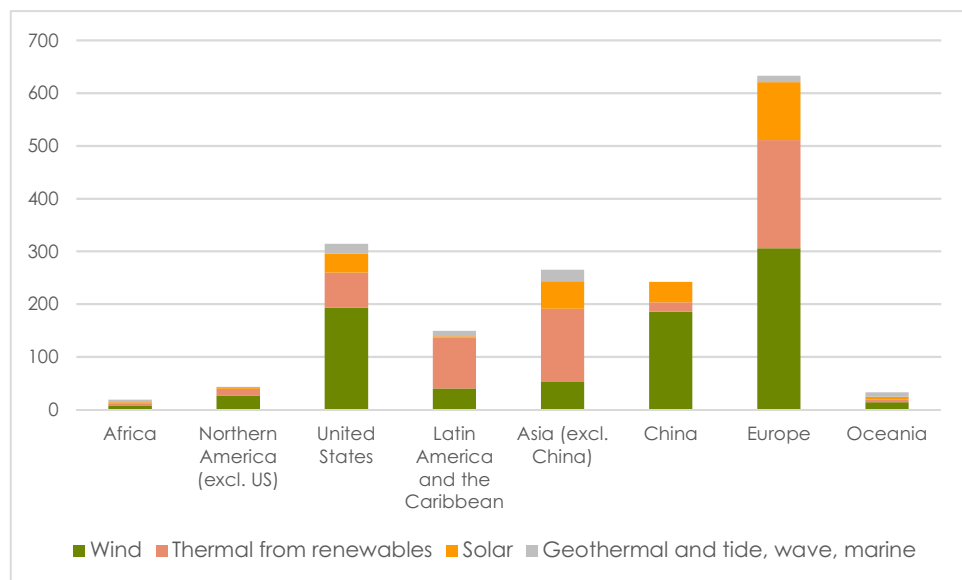
43. Renewable electricity generation by type, major countries, 2015

Terawatt hours

Country	Hydro	Country	Wind	Country	Total renewables
China	1,130.3	United States	193.0	China	1,371.9
Canada	380.7	China	185.8	United States	585.1
Brazil	359.7	Germany	79.2	Brazil	433.4
United States	271.1	Spain	49.3	Canada	423.1
Russian Federation	169.9	United Kingdom	40.3	India	207.9
Norway	139.0	India	30.0	Germany	193.9
Others	1,527.3	Others	248.5	Others	2,458.8
World	3,978.1	World	826.1	World	5,674.0

44. Electricity from non-hydro renewable sources by region and type, 2015

Terawatt hours



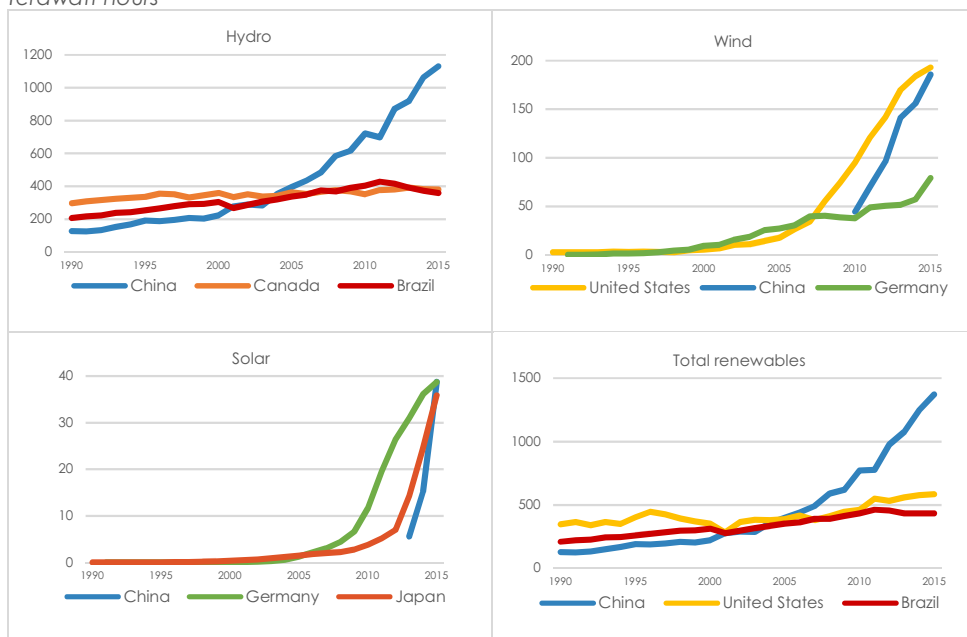
45. Electricity from non-hydro renewable sources by region and type, 2015

Terawatt hours

Region	Wind	Thermal (ren.)	Solar	Geothermal and tide	Total
Africa	7.6	3.4	2.9	4.5	18.5
Northern America (excl. US)	26.4	13.1	2.9	0.0	42.4
United States	193.0	66.6	35.6	18.7	314.0
Latin America and the Caribbean	40.1	96.1	2.5	10.3	148.9
Asia (excl. China)	53.5	137.2	52.1	21.9	264.8
China	185.8	17.1	38.8	-	241.7
Europe	305.7	205.0	109.8	12.5	632.9
Oceania	13.9	4.5	6.0	8.3	32.7
World	826.1	543.0	250.6	76.2	1,695.9

46. Renewable electricity by type, major countries in 2015, 1990 – 2015

Terawatt hours



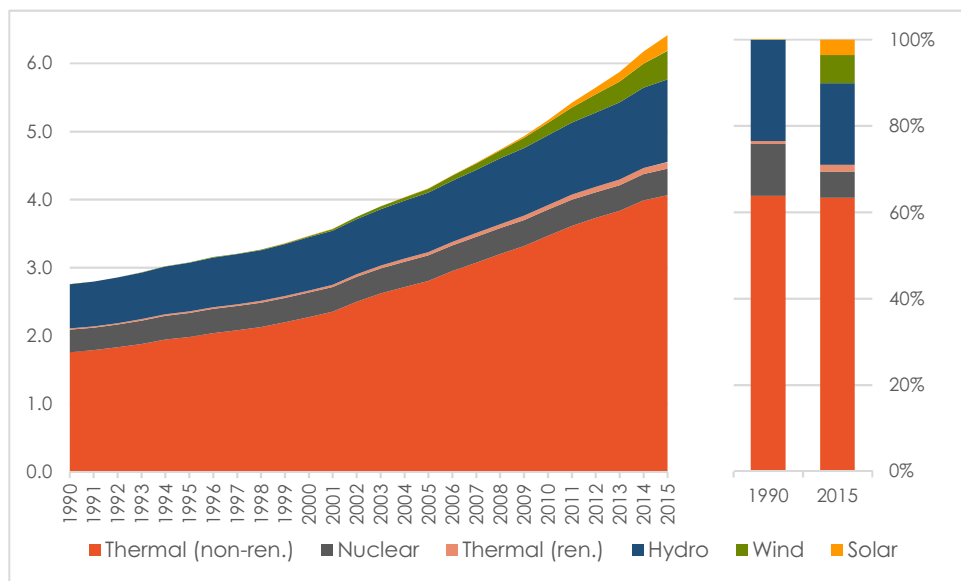
47. Renewable electricity by type, major countries in 2015, 1990 and 2015, and share in total electricity generation, 2015

Gigawatt hours and percentage

Hydro	1990	2015	%2015	Wind	1990	2015	%2015
China	126,720	1,130,270	19%	United States	3,066	192,992	4%
Canada	296,848	380,717	57%	China	0	185,766	3%
Brazil	206,708	359,743	62%	Germany	71	79,206	12%
Solar	1990	2015	%2015	Total renewables	1990	2015	%2015
China	0	38,776	1%	China	126,720	1,371,926	24%
Germany	1	38,726	6%	United States	346,722	585,128	14%
Japan	1	35,858	3%	Brazil	210,246	433,395	75%

48. World electricity capacity by type⁶, 1990 – 2015

Terawatt

**49. World electricity capacity by type⁶, 1990, 2000, 2010 and 2015**

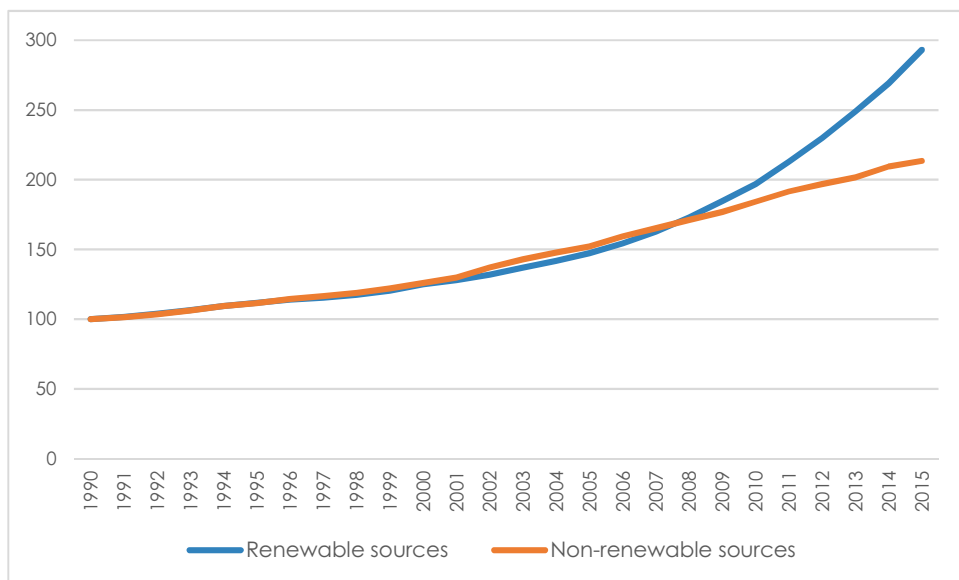
Gigawatt

Type	1990	2000	2010	2015
Non-renewable, of which	2,090.5	2,632.4	3,850.8	4,463.2
- Thermal (non-ren.)	1,760.1	2,273.9	3,467.3	4,063.5
- Nuclear	330.4	358.3	381.8	389.3
Renewable, of which	672.7	841.0	1,325.0	1,971.7
- Thermal (ren.)	19.0	30.0	67.0	98.2
- Hydro	644.9	784.1	1,027.5	1,213.1
- Wind	2.4	17.2	180.8	420.3
- Solar	0.4	1.2	39.4	227.8
Total	2,763.2	3,473.4	5,175.8	6,434.9

(6) Non-renewables sources refer to thermal from non-renewable fuels, nuclear and other non-specified capacities. Renewable sources refer to thermal from renewable fuels, hydro, wind, solar, geothermal and tide, wave and marine capacities. Sources not shown in tables 49 and 51 have negligible values for capacity (less than 23 GW in 2015) and are not included in chart 48.

50. World electricity capacity by type⁶, 1990 – 2015

Index number (1990=100)

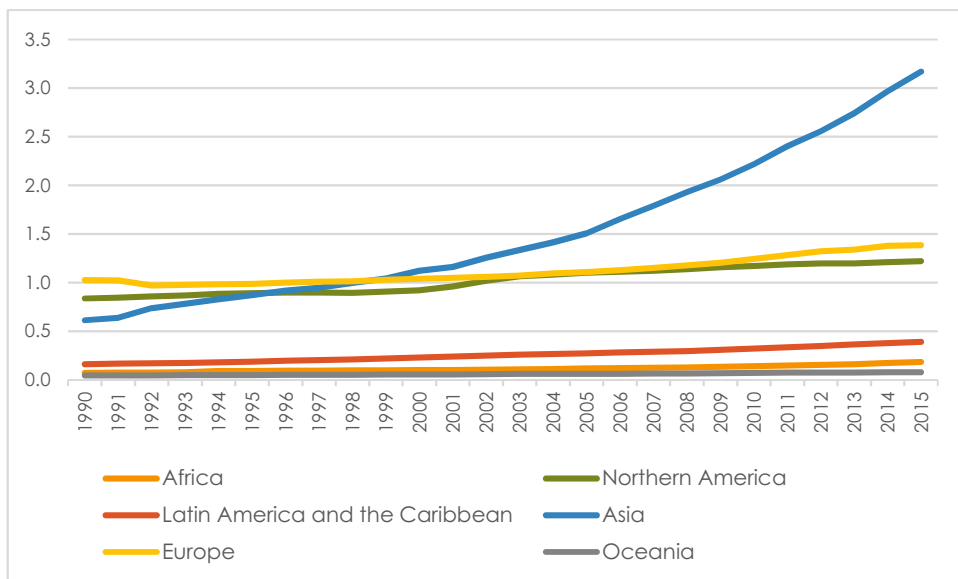
**51. World electricity capacity by type⁶, 1990, 2000, 2010 and 2015, and share in 2015**

Index numbers (1990=100) and percentage

Type	1990	2000	2010	2015	2015%
Non-renewable, of which	100	126	184	213	69.4%
- Thermal (non-ren.)	100	129	197	231	63.1%
- Nuclear	100	108	116	118	6.0%
Renewable, of which	100	125	197	293	30.6%
- Thermal (ren.)	100	158	353	517	1.5%
- Hydro	100	122	159	188	18.9%
- Wind	100	728	7,676	17,848	6.5%
- Solar	100	341	11,203	64,728	3.5%
Total	100	126	187	233	100.0%

52. Total electricity capacity by region, 1990 – 2015

Terawatt

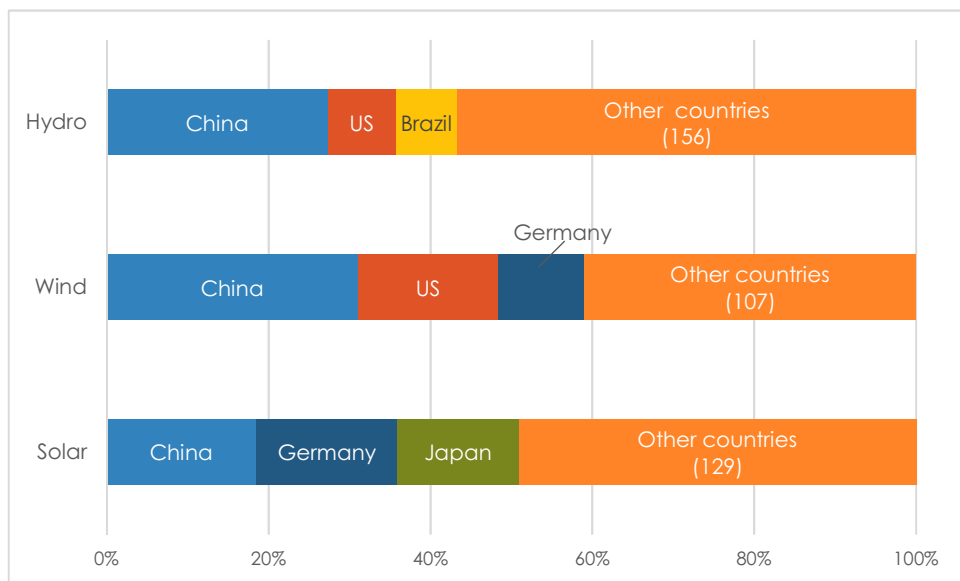
**53. Total electricity capacity by region, 1990, 2000, 2010 and 2015**

Gigawatt

Region	1990	2000	2010	2015
Africa	74.7	101.3	141.3	186.1
Northern America	838.0	923.0	1,173.8	1,222.2
Latin America and the Caribbean	162.4	231.2	324.2	391.1
Asia	614.1	1,121.3	2,218.4	3,170.3
Europe	1,026.8	1,039.9	1,244.8	1,385.6
Oceania	47.1	56.7	73.4	79.6
World	2,763.2	3,473.4	5,175.8	6,434.9

54. Electricity capacity by type (hydro, wind and solar), major countries, 2015

Percentage



29

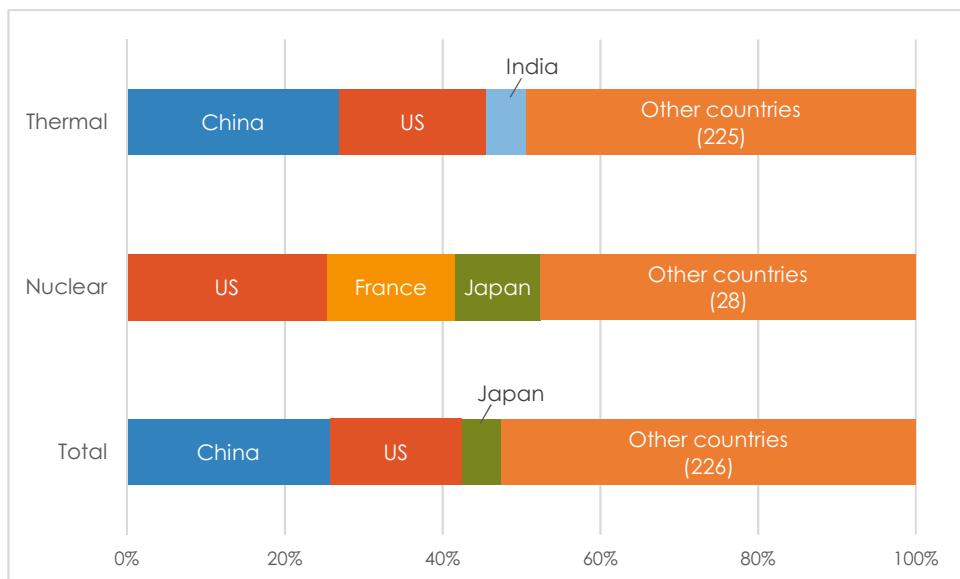
55. Electricity capacity by type (hydro, wind and solar), major countries, 2015

Gigawatt

Country	Hydro	Country	Wind	Country	Solar
China	331.7	China	130.8	China	42.2
United States	102.2	United States	72.6	Germany	39.8
Brazil	91.7	Germany	44.7	Japan	34.2
Canada	79.4	India	25.1	United States	23.4
Russian Federation	51.0	Spain	22.9	Italy	18.9
Japan	50.0	United Kingdom	14.3	United Kingdom	9.2
Others	507.1	Others	110.0	Others	60.2
World	1,213.1	World	420.3	World	227.8

56. Electricity capacity by type (thermal, nuclear, total) major countries, 2015

Percentage

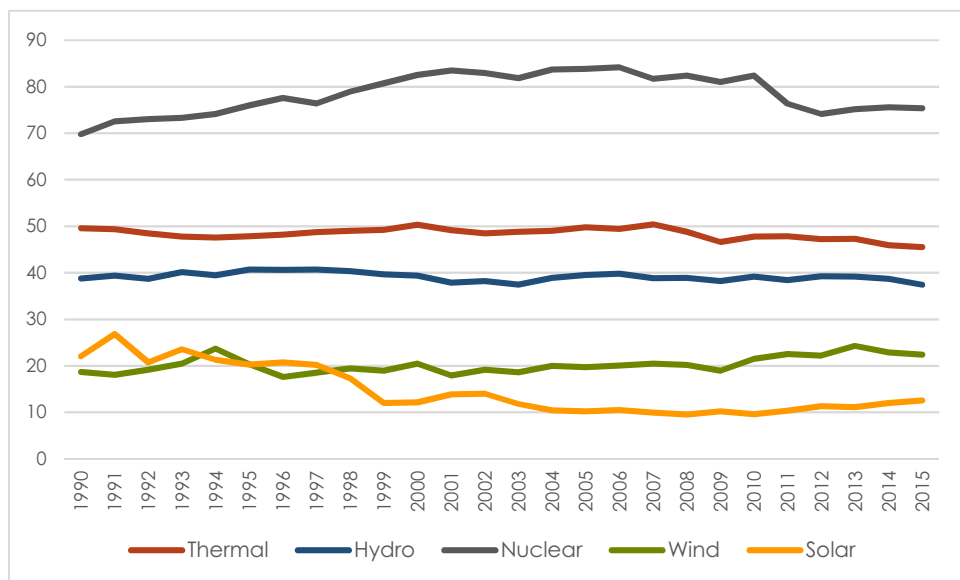
**57. Electricity capacity by type (thermal, nuclear, total) major countries, 2015**

Gigawatt

Country	Thermal	Country	Nuclear	Country	Total
China	1,122.1	United States	98.7	China	1,657.9
United States	771.7	France	63.1	United States	1,072.5
India	210.4	Japan	42.0	Japan	323.9
Japan	194.4	China	27.2	India	287.1
Russian Federation	179.1	Russian Federation	26.3	Russian Federation	257.1
Germany	97.0	Republic of Korea	21.7	Germany	204.1
Others	1,587.0	Others	110.3	Others	2,632.4
World	4,161.7	World	389.3	World	6,434.9

58. Utilization of electricity capacity by type, 1990 – 2015

Percentage

**59. Utilization of electricity capacity by type, 1990, 2000, 2010 and 2015**

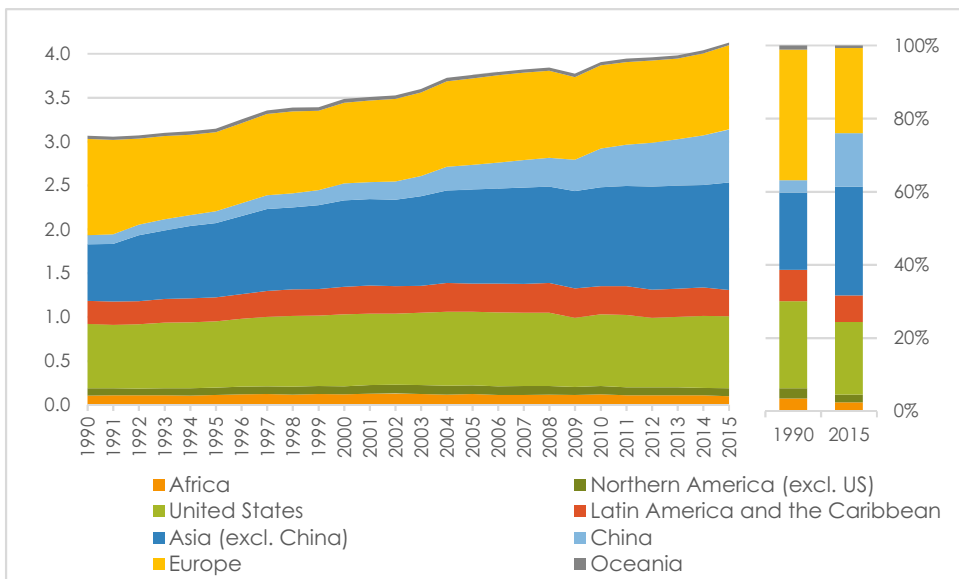
Percentage

Type	1990	2000	2010	2015
Thermal	50	50	48	46
Hydro	39	39	39	37
Nuclear	70	82	82	75
Wind	19	20	21	22
Solar	22	12	10	13
Total	50	51	48	43

Refinery output

60. Total refinery output by region, 1990 – 2015

Billion metric tons



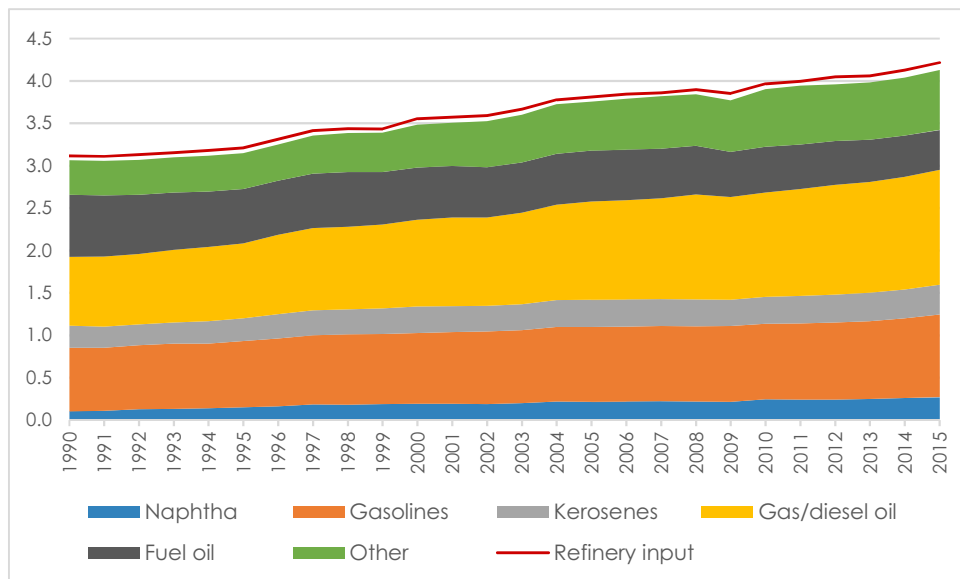
61. Total refinery output by region, 1990, 2000, 2010 and 2015

Million metric tons

Region	1990	2000	2010	2015
Africa	106.3	118.5	119.0	99.6
Northern America (excl. US)	84.2	93.7	96.1	87.6
United States	730.6	817.9	814.2	820.5
Latin America and the Caribbean	261.8	315.2	321.9	299.6
Asia (excl. China)	645.7	983.8	1,127.3	1,227.2
China	106.0	191.8	440.5	603.2
Europe	1,094.0	919.8	947.2	959.3
Oceania	35.5	41.8	36.8	31.2
World	3,064.0	3,482.5	3,903.1	4,128.1

62. World total refinery input and refinery output by type of fuel, 1990 – 2015

Billion metric tons

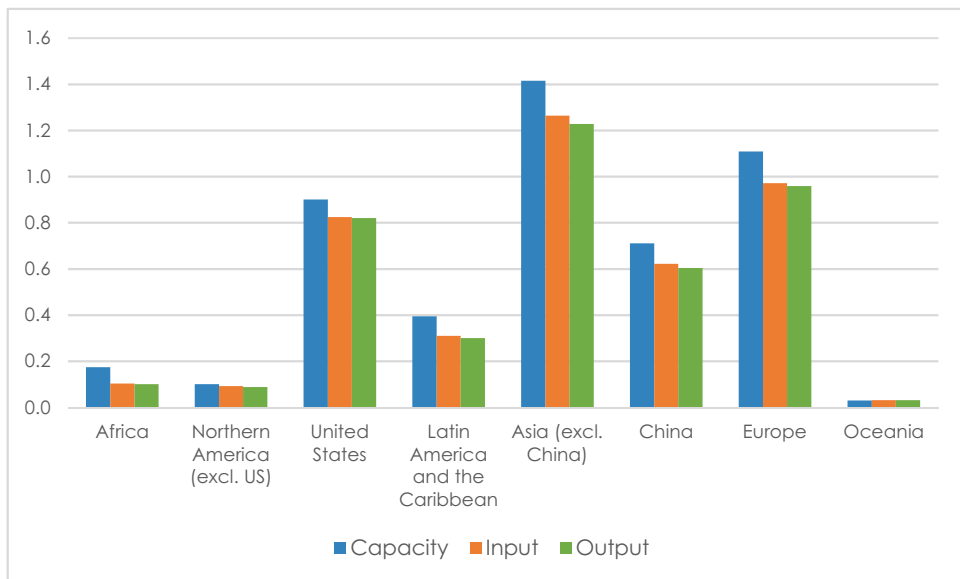


33

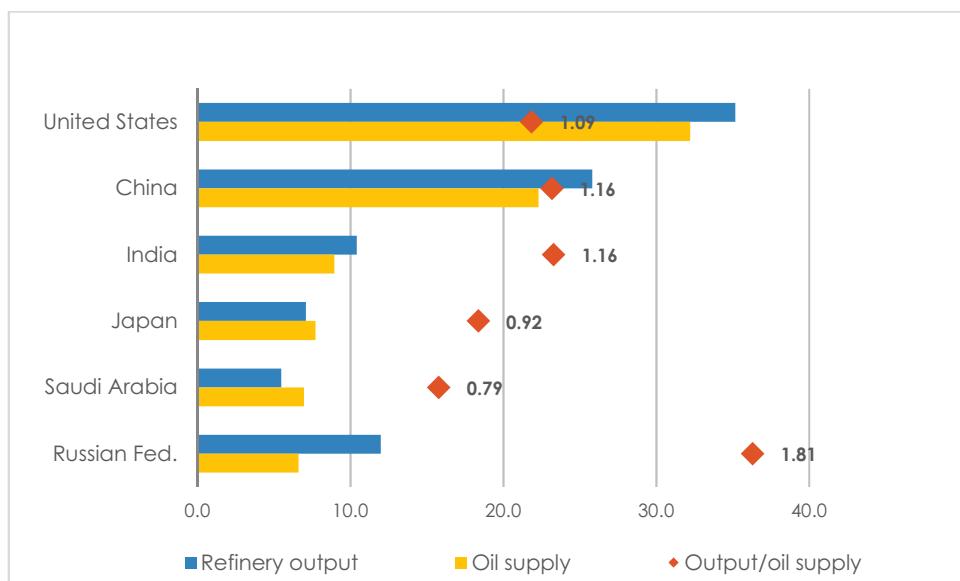
63. World total refinery input and refinery output by type, 1990, 2000, 2010 and 2015

Million metric tons

Refinery input and output	1990	2000	2010	2015
Total refinery input	3,115.7	3,555.3	3,966.0	4,216.3
Total refinery output	3,064.0	3,482.5	3,903.1	4,128.1
- Naphtha	104.7	192.3	244.2	269.4
- Gasolines	749.0	834.3	892.6	976.5
- Kerosenes	258.1	311.4	316.3	350.8
- Gas/diesel oil	812.9	1,022.8	1,230.4	1,354.2
- Fuel oil	732.1	615.0	540.7	471.1
- Other	407.3	506.7	678.9	706.2

64. Total refinery capacity, input and output by region, 2015*Billion metric tons***65. Total refinery capacity, input and output by region, 2015***Million metric tons*

Region	Capacity	Input	Output
Africa	173.3	102.7	99.6
Northern America (excl. US)	100.1	91.7	87.6
United States	900.6	823.8	820.5
Latin America and the Caribbean	394.1	309.2	299.6
Asia (excl. China)	1,415.2	1,264.3	1,227.2
China	710.0	621.9	603.2
Europe	1,108.5	971.4	959.3
Oceania	29.3	31.4	31.2
World	4,831.2	4,216.3	4,128.1

66. Total refinery output and total oil supply, countries with the largest total oil supply, 2015*Exajoules and ratio between total refinery output and total oil supply*

35

67. Total refinery output and total oil supply⁷, countries with the largest total oil supply, 2015*Exajoules and ratio between total refinery output and total oil supply*

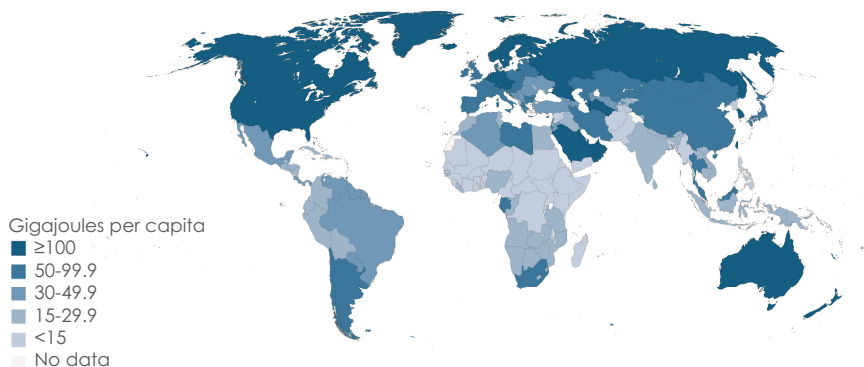
Country	Refinery output	Oil supply	Output/oil supply
United States	35.2	32.2	1.09
China	25.8	22.3	1.16
India	10.4	9.0	1.16
Japan	7.1	7.7	0.92
Saudi Arabia	5.5	7.0	0.79
Russian Federation	12.0	6.6	1.81
Others	81.4	80.8	1.01
World	177.4	165.6	-

(7) World oil supply excludes international aviation and marine bunkers.

Total final consumption

68. Total final consumption per capita, 2015

Gigajoules per capita



Source: United Nations Energy Database.

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FACTS AND FIGURES

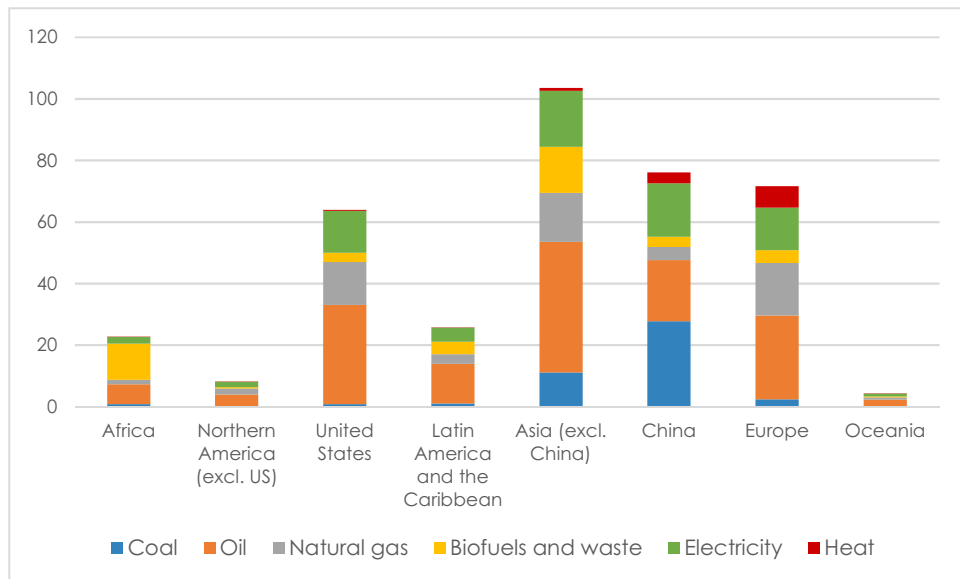
World total final consumption (TFC) reached almost 376 EJ in 2015, showing an increase of 52% compared to 1992. Energy use in the industry sector accounted for the largest share of TFC in 2015 (31% of TFC or 117 EJ), followed by transport (around 25% or 93 EJ) and households (around 21% or 80 EJ).

In 2015, more than 80% of coal (or 35 EJ) was consumed by the industry sector, while around 58% of oil (85 EJ) was consumed for transport and 18% for non-energy use (26 EJ). Natural gas was used mostly in industry (38% of all consumed natural gas or 22 EJ) and households (almost 30% or 18 EJ). The largest share of electricity was consumed by industry (42% of electricity TFC or 31 EJ), followed by households (27% or 20 EJ); other sectors⁸ accounted for 29% of electricity TFC or 21 EJ.

(8) Other sectors refer to agriculture, forestry and fishing, commerce and public services and to other non-specified consumers

69. Total final consumption by region and source, 2015

Exajoules



37

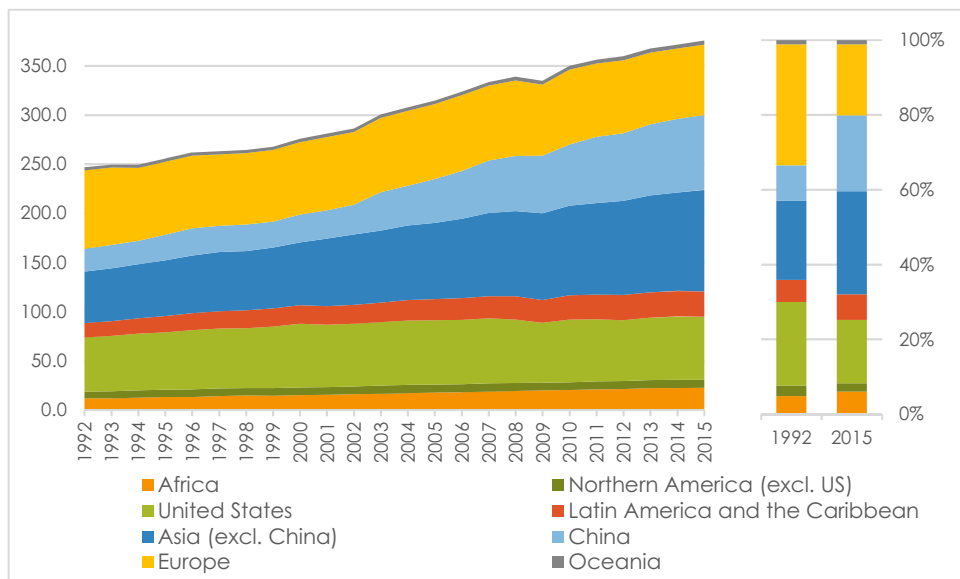
70. Total final consumption by region and source, 2015

Exajoules

Region	Coal	Oil	Natural gas	Biofuels and waste	Electricity	Heat	Total
Africa	0.8	6.4	1.4	11.7	2.2	0.02	22.7
Northern America (excl. US)	0.1	3.8	2.0	0.4	1.8	0.03	8.1
United States	0.8	32.2	14.0	3.0	13.6	0.3	63.9
Latin America and the Caribbean	0.9	12.9	3.2	4.0	4.6	0.01	25.7
Asia (excl. China)	11.1	42.5	15.9	15.0	18.2	0.9	103.5
China	27.7	19.9	4.3	3.3	17.4	3.5	76.0
Europe	2.4	27.2	17.1	4.1	13.9	7.0	71.6
Oceania	0.1	2.1	0.7	0.3	0.9	0.02	4.2
World	43.9	147.0	58.5	41.9	72.7	11.8	375.8

71. Total final consumption by region, 1992 – 2015

Exajoules

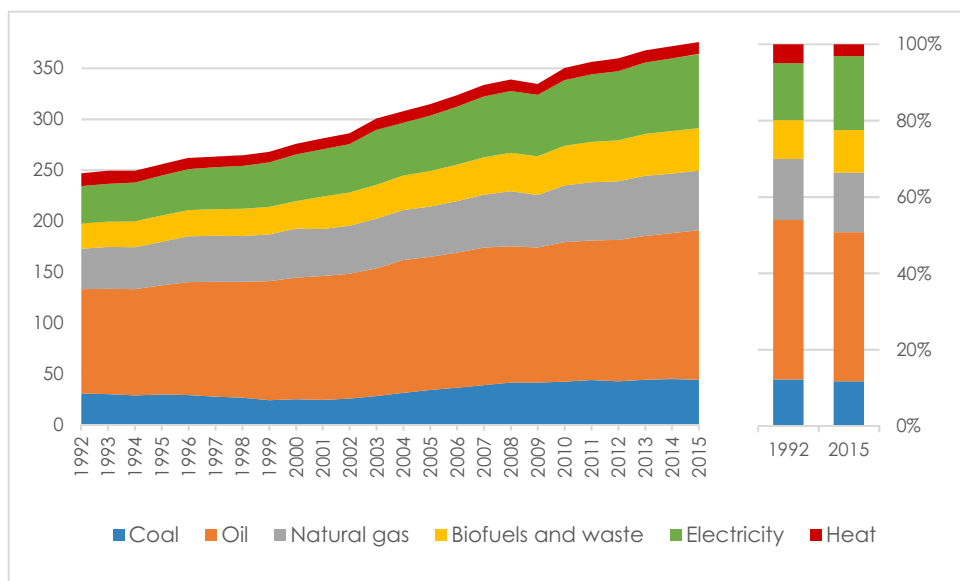
**72. Total final consumption by region, 1992, 2000, 2010 and 2015**

Exajoules

Region	1992	2000	2010	2015
Africa	11.9	14.9	20.2	22.7
Northern America (excl. US)	6.8	8.0	7.9	8.1
United States	55.2	64.6	63.7	63.9
Latin America and the Caribbean	14.6	18.9	24.7	25.7
Asia (excl. China)	52.2	63.9	91.2	103.5
China	23.4	28.2	62.2	76.0
Europe	79.6	73.5	76.3	71.6
Oceania	2.9	3.6	3.9	4.2
World	246.7	275.7	350.2	375.8

73. World total final consumption by source, 1992 – 2015

Exajoules

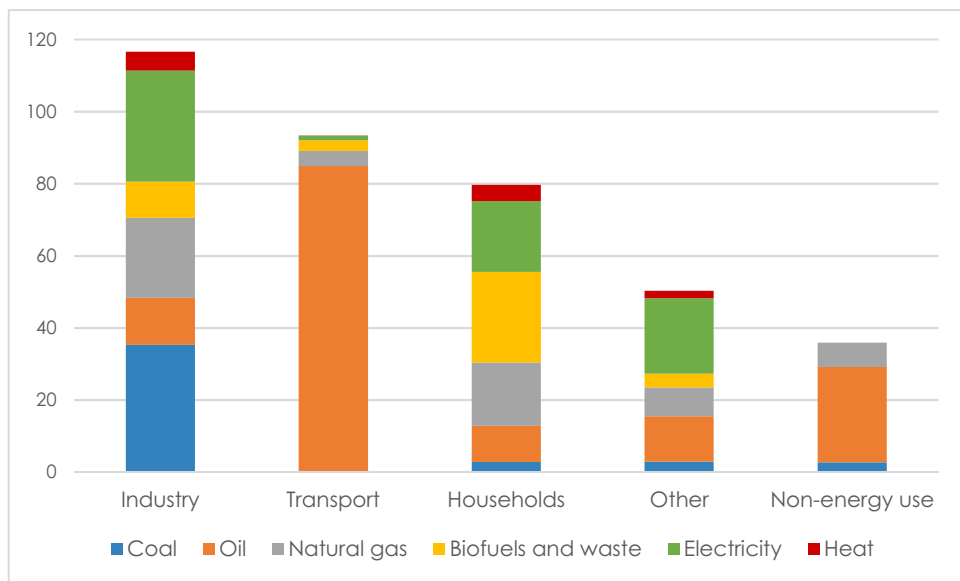
**74. World total final consumption by source, 1992, 2000, 2010 and 2015**

Exajoules

Source	1992	2000	2010	2015
Coal	30.1	24.6	41.9	43.9
Oil	102.9	119.7	137.1	147.0
Natural gas	39.6	47.9	55.7	58.5
Biofuels and waste	25.0	27.1	39.2	41.9
Electricity	36.6	45.9	64.4	72.7
Heat	12.4	10.5	11.9	11.8
Total	246.7	275.7	350.2	375.8

75. World total final consumption by sector and source, 2015

Exajoules

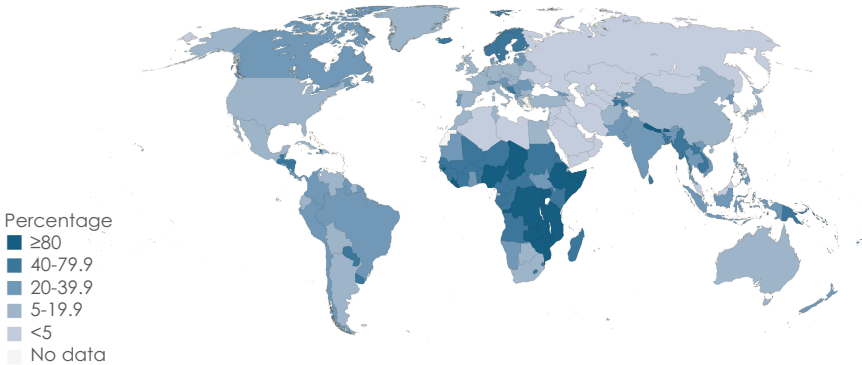
**76. World total final consumption by sector and source, 2015**

Exajoules

Sector	Coal	Oil	Natural gas	Biofuels and waste	Electricity	Heat	Total
Total final consumption	43.9	147.0	58.5	41.9	72.7	11.8	375.8
- Total energy consumption	41.2	120.5	51.8	41.9	72.7	11.8	339.9
- Industry	35.3	13.0	22.2	10.0	30.8	5.2	116.6
- Transport	0.1	84.8	4.1	3.0	1.3	0.0	93.3
- Households	2.8	10.0	17.5	25.1	19.7	4.5	79.7
- Other	2.9	12.6	8.0	3.8	20.9	2.0	50.3
- Non-energy use	2.7	26.5	6.7	-	-	-	35.9

77. Renewable energy share in total final energy consumption (TFEC), 2015

Percentage



Source: United Nations Energy Database.

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78. Final consumption (total and per capita) and renewable energy share in TFEC, major countries, 2015

Exajoules, gigajoules per capita and percentage

Country	TFC	Country	TFC per capita	Country	% REN in TFEC
China	76.0	Trinidad and Tobago	423.6	Dem. Rep. Congo	95.8%
United States	63.9	Qatar	364.1	Burundi	95.7%
India	27.2	Iceland	363.5	Somalia	94.3%
Russian Fed.	19.2	United Arab Emirates	315.3	Ethiopia	90.2%
Japan	12.3	Luxembourg	266.4	Chad	89.4%
Brazil	9.9	S. Maarten (Dutch part)	254.5	Uganda	89.1%
Germany	9.3	Falkland Isl. (Malvinas)	232.9	Zambia	87.3%
Canada	8.1	Gibraltar	229.6	Bhutan	86.9%
Others	149.9	Others	50.6	Others	16.5%
World	375.8	World	51.1	World	17.2%

World energy balance, 2015 (Exajoules)				
	Primary coal	Coal products	Primary oil	Oil products
Primary production	161.5	-	183.7	-
Imports	31.7	0.8	93.4	56.7
Exports	-33.9	-0.8	-93.1	-57.7
International bunkers	-0.1	-	-	-15.9
Stock changes	-0.3	0.02	-0.8	-0.7
Total energy supply	158.9	0.01	183.2	-17.6
Statistical difference	-0.8	0.05	0.2	-1.2
Transfers	-	-	-1.2	5.7
Transformation	-119.9	11.7	-180.2	166.3
- Electricity plants	-84.3	-1.7	-1.7	-7.9
- CHP and heat plants	-12.7	-1.0	-0.03	-1.2
- Coke ovens	-20.4	22.5	-	-0.1
- Oil refineries	-	-	-169.0	168.3
- Other transformation	-2.5	-8.1	-9.4	7.3
Energy industries own use	-6.1	-1.2	-0.5	-9.4
Losses	-0.2	-0.1	-0.4	-0.02
Final consumption	33.6	10.3	0.7	146.2
- Final energy consumption	31.5	9.7	0.4	120.1
- Industry	25.9	9.5	0.4	12.7
. Iron and steel	4.7	7.8	0+	0.4
. Chemical and petrochem.	3.1	0.5	0.1	2.4
. Non-ferrous metals	0.2	0.02	0+	0.2
. Non-metallic minerals	1.6	0.1	0+	1.8
. Other industries	16.4	1.1	0.3	7.9
- Transport	0.1	0+	0.01	84.8
. of which Road	-	-	0+	75.9
- Households	2.7	0.2	0+	10.0
- Commerce, public services	0.4	0.04	-	2.8
- Other energy use	2.5	0.04	0+	9.8
- Non-energy use	2.1	0.6	0.4	26.1

Natural gas	Biofuels and waste	Nuclear	Electricity	Heat	Total	of which: renewables ⁹
125.7	52.4	27.8	17.9	3.4	572.4	71.3
36.7	0.9	-	2.7	0 ⁺	222.9	0.9
-36.3	-0.7	-	-2.6	0 ⁻	-225.0	-0.7
-	-0.01	-	-	-	-16.1	-0.01
-0.7	0.01	-	-	-	-2.5	0.01
125.4	52.6	27.8	18.0	3.4	551.7	71.6
1.9	0.1	-	0.1	0.01	0.3	18.3
-	-0.1	-	-	-	4.3	-0.1
-51.8	-9.9	-27.8	69.4	10.7	-131.4	-11.2
-35.1	-4.4	-27.5	62.0	-3.3	-103.9	-6.0
-15.2	-2.4	-0.3	7.4	14.0	-11.5	-2.0
0 ⁻	0 ⁻	-	-	-	2.0	-
-0.01	-	-	-	-	-0.8	-
-1.4	-3.2	-	-	-	-17.2	-3.2
-12.3	-0.5	-	-7.5	-1.5	-39.1	-0.5
-1.0	-0.01	-	-7.0	-0.7	-9.5	-0.01
58.5	41.9	-	72.7	11.8	375.8	41.4
51.8	41.9	-	72.7	11.8	339.9	41.4
22.2	10.0	-	30.8	5.2	116.6	9.5
2.2	0.2	-	4.1	0.6	20.0	0.2
4.9	0.1	-	4.0	2.0	17.0	0.04
0.5	0.01	-	1.7	0.02	2.6	0.01
1.9	0.2	-	0.9	0.1	6.6	0.1
12.7	9.4	-	20.1	2.4	70.3	9.2
4.1	3.0	-	1.3	0.03	93.3	3.0
1.4	3.0	-	0.1	-	80.4	3.0
17.5	25.1	-	19.7	4.5	79.7	25.1
7.1	1.0	-	15.1	1.5	27.9	1.1
0.9	2.8	-	5.9	0.5	22.3	2.7
6.7	-	-	-	-	35.9	-

(9) See General notes

Energy indicators, 2015

Region	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TREC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
WORLD	551,688	75.1	5.1	103.7	12.2	2,748.6
Africa	32,123	27.1	5.7	140.8	53.6	523.2
Northern Africa	8,602	38.4	3.7	132.6	9.7	1,206.4
Sub-Saharan Africa	23,521	24.4	7.0	143.9	67.2	364.2
Americas	137,309	138.4	5.0	106.1	8.3	5,613.8
Latin America and the Caribbean	35,449	55.9	3.8	119.6	16.5	2,025.9
Northern America	101,860	284.7	5.5	101.4	5.3	11,974.6
Asia	271,125	61.7	5.4	97.1	11.1	2,251.6
Central Asia	6,483	96.3	9.0	204.3	0.1	2,195.9
Eastern Asia	155,042	96.2	5.9	68.5	3.4	4,075.6
South-eastern Asia	26,015	41.1	4.0	119.2	28.1	1,270.9
Southern Asia	53,000	29.1	5.0	79.0	27.0	781.7
Western Asia	30,585	118.9	4.9	232.4	1.9	3,665.5
Europe	104,626	141.7	4.5	96.6	6.4	5,223.3
Eastern Europe	44,345	151.4	7.0	146.9	3.4	4,070.7
Northern Europe	14,206	138.8	3.3	120.5	9.1	6,980.1
Southern Europe	15,065	98.9	3.4	30.9	9.2	4,594.8
Western Europe	31,011	162.5	3.7	45.7	7.3	6,552.3
Oceania	6,506	165.4	5.2	259.7	7.9	6,638.1
Australia and New Zealand	6,207	217.8	5.2	269.2	6.5	8,788.6
Melanesia	269	27.9	5.1	67.5	36.8	776.6
Micronesia	9	17.4	7.4	2.7	1.7	4,062.6
Polynesia	20	29.8	4.5	11.8	9.2	1,483.6

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TEEC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
Afghanistan	145	4.5	2.4	41.3	9.6	119.5
Albania	92	31.8	2.9	94.7	12.5	2,035.8
Algeria	2,221	56.0	4.1	264.9	0.02	1,264.4
American Samoa ¹⁰	0.01	0.1	-	-	-	2,806.2
Andorra	9	124.5	-	6.3	0.3	6,860.6
Angola	602	24.0	3.5	687.7	46.3	336.6
Anguilla	2	150.8	-	0.1	0.1	5,556.3
Antigua and Barbuda	8	85.2	3.9	0	0	2,722.8
Argentina	3,610	83.1	4.4	85.9	4.3	2,986.0
Armenia	129	42.7	5.4	35.3	8.3	1,778.8
Aruba ¹¹	13	122.7	7.5 ²⁰¹¹	4.1	0.3	7,492.6
Australia	5,261	219.5	5.0	302.9	6.0	8,816.3
Austria	1,374	160.8	3.6	36.4	15.1	7,117.1
Azerbaijan	603	61.9	3.7	409.7	0.9	1,806.3
Bahamas	34	87.1	4.1	0.9	1.2	5,190.5
Bahrain	579	420.4	9.6	165.3	0.4	20,196.2
Bangladesh	1,789	11.1	3.5	84.4	44.5	301.7
Barbados	17	58.2	3.5	15.4	2.7	3,283.6
Belarus	1,053	110.9	6.4	13.9	3.9	3,083.4
Belgium	2,226	197.0	4.7	19.9	4.7	7,231.8
Belize	15	41.2	5.1	61.6	18.7	1,639.2
Benin	190	17.5	9.1	59.8	51.0	101.6

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TEEC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
Bermuda ¹¹	8	133.1	2.3 ²⁰¹³	7.3	0	9,523.6
Bhutan	63	81.8	10.4	121.2	75.1	2,654.9
Bolivia (Plurinational State of)	337	31.4	4.8	258.8	12.1	734.3
Bonaire, Sint Eustatius and Saba	5	211.9	-	2.7	0.1	3,845.4
Bosnia and Herzegovina	331	86.8	8.6	77.8	35.2	2,801.5
Botswana	80	35.5	2.4	69.2	8.0	1,544.8
Brazil	12,350	59.4	4.1	92.8	25.4	2,370.4
British Virgin Islands	3	84.0	-	0.8	0.9	3,742.1
Brunei Darussalam	114	268.9	3.7	591.2	0.3	8,013.0
Bulgaria	775	108.4	6.4	65.1	12.8	3,961.8
Burkina Faso	169	9.4	5.9	74.5	73.9	66.3
Burundi	59	5.3	7.7	94.9	94.2	23.1
Cabo Verde	9	16.8	2.8	20.8	23.2	585.0
Cambodia	295	18.9	5.8	62.4	61.4	319.9
Cameroon	326	14.0	4.3	136.8	71.4	247.8
Canada	11,151	310.3	7.2	173.3	6.1	13,997.4
Cayman Islands ¹¹	8	132.5	3.0 ²⁰¹¹	0	0	10,031.4
Central African Republic	23	4.7	8.1	81.8	73.3	32.9
Chad	80	5.7	2.8	281.8	89.4	15.3
Chile	1,504	83.8	3.8	35.9	14.9	3,723.8
China	119,926	87.2	6.4	84.1	4.0	3,511.1
China, Hong Kong SAR	583	80.0	1.5	0	0.05	6,025.3

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TEEC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
China, Macao SAR	40	67.5	0.7	5.7	0.1	8,221.5
Colombia	1,475	30.6	2.4	379.3	16.5	1,060.6
Comoros	5	6.5	4.7	53.5	45.3	40.0
Congo	111	23.9	4.0	563.6	60.7	172.3
Cook Islands	1	40.8	-	1.0	0	1,411.2
Costa Rica	207	43.0	2.9	53.1	16.5	1,961.0
Côte d'Ivoire	543	23.9	7.3	96.9	63.1	264.9
Croatia	350	82.5	4.0	52.5	19.2	3,618.4
Cuba	480	42.1	-	44.1	2.4	1,418.9
Curaçao	93	592.0	-	0.1	0.04	4,338.3
Cyprus	85	73.0	3.3	6.0	7.5	3,510.7
Czechia	1,764	167.3	5.5	68.8	11.8	5,166.7
Democratic People's Rep. of Korea	332	13.2	-	237.5	13.1	407.9
Democratic Rep. of the Congo	1,209	15.7	21.1	100.7	92.9	94.0
Denmark	668	117.9	2.6	99.1	11.0	5,415.3
Djibouti	10	11.2	3.4	35.4	15.4	346.9
Dominica	3	36.8	3.7	5.9	4.1	1,306.5
Dominican Republic	328	31.2	2.3	7.7	9.5	1,479.6
Ecuador	651	40.3	3.8	199.1	5.1	1,416.8
Egypt	3,457	37.8	3.7	88.3	8.5	1,685.2
El Salvador	180	29.4	3.6	48.1	12.8	935.9
Equatorial Guinea	71	83.9	2.2	1,240.0	5.7	831.9

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TEEC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
Eritrea ¹¹	36	6.8	4.7 ²⁰¹¹	76.9	79.6	63.5
Estonia	230	175.6	6.4	100.9	17.8	5,220.3
Ethiopia	1,471	14.8	9.6	90.7	87.9	83.6
Falkland Islands (Malvinas)	1	257.4	-	20.4	0.9	6,079.9
Faroe Islands	9	188.4	-	7.5	0	5,976.5
Fiji	38	42.5	5.0	20.3	25.7	925.9
Finland	1,349	245.1	6.3	54.4	22.9	14,257.6
France	10,310	160.0	4.1	55.5	8.6	6,594.7
French Guiana	12	45.6	-	27.5	13.1	2,952.3
French Polynesia	12	41.1	-	7.5	0.4	2,253.0
Gabon	106	61.5	3.3	524.3	57.9	1,073.4
Gambia	14	7.1	4.6	47.9	51.5	106.3
Georgia	197	49.3	5.9	29.3	12.5	2,476.8
Germany	12,882	159.6	3.6	38.9	7.0	6,379.2
Ghana	339	12.4	3.1	109.6	31.9	353.3
Gibraltar	9	271.6	-	0	0.01	6,114.8
Greece	985	89.9	3.8	36.0	9.1	4,636.1
Greenland	9	158.0	-	18.2	0	7,482.4
Grenada	4	37.8	3.0	7.9	10.9	1,722.7
Guadeloupe	33	71.1	-	16.5	0.5	3,209.9
Guam ¹⁰	-	-	-	-	-	9,188.6
Guatemala	476	29.1	4.0	66.4	53.0	579.2

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TEEC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
Guernsey ¹⁰	1	12.9	-	0	0	5,813.1
Guinea	152	12.1	7.2	76.0	74.3	76.6
Guinea-Bissau	30	16.4	11.8	84.1	86.9	19.7
Guyana	35	45.0	6.4	20.9	24.6	1,029.7
Haiti	179	16.7	10.1	77.6	75.8	38.4
Honduras	237	29.4	6.1	47.4	45.5	967.7
Hungary	1,058	107.4	4.3	44.5	12.8	3,672.5
Iceland	313	950.2	22.2	91.0	3.3	53,031.8
India	36,697	28.0	4.9	64.1	31.7	784.9
Indonesia	9,452	36.7	3.5	189.7	38.9	826.1
Iran (Islamic Republic of)	9,989	126.3	7.6	136.5	1.2	2,943.0
Iraq	1,997	54.8	3.7	378.8	0.1	1,154.1
Ireland	555	118.4	1.9	14.4	3.2	5,347.2
Isle of Man ¹⁰	0.3	3.3	-	159.2	0	4,180.9
Israel	955	118.5	3.6	32.2	3.0	6,742.7
Italy	6,402	107.0	3.1	23.6	7.4	4,805.0
Jamaica	108	38.8	4.7	7.6	9.5	1,089.4
Japan	17,984	142.1	3.7	7.1	1.2	7,499.5
Jersey ¹⁰	3	29.0	-	24.5	0	6,056.5
Jordan	362	47.6	4.7	2.1	0.9	2,176.4
Kazakhstan	3,258	184.9	7.9	225.2	0.2	3,735.3
Kenya	949	20.6	7.1	80.2	59.0	167.9

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TEEC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
Kiribati	1	7.8	3.9	4.2	3.4	174.3
Kuwait	1,458	374.5	5.4	480.4	0.2	11,124.0
Kyrgyzstan	167	28.2	8.7	45.0	0.1	1,782.3
Lao People's Democratic Republic	187	27.5	4.9	98.6	48.5	623.2
Latvia	179	90.9	3.9	54.6	26.0	3,278.9
Lebanon	312	53.3	4.0	2.5	2.9	2,837.8
Lesotho	59	27.5	10.0	53.0	47.7	325.1
Liberia	92	20.4	26.0	82.8	83.8	58.8
Libya ¹¹	1,022	162.7	8.2 ²⁰¹¹	146.4	2.1	1,557.7
Liechtenstein ¹⁰	3	76.4	-	30.4	13.9	10,530.0
Lithuania	294	102.3	3.8	25.8	14.8	3,245.5
Luxembourg	157	277.6	2.9	3.9	3.6	10,969.7
Madagascar	179	7.4	5.4	74.0	68.4	49.3
Malawi	78	4.5	4.1	87.3	75.3	89.5
Malaysia	3,424	112.9	4.5	109.5	2.0	4,358.5
Maldives	19	51.9	3.3	0.9	0.9	960.8
Mali	95	5.4	2.8	58.4	58.8	76.4
Malta	27	64.7	1.8	2.3	2.3	5,049.3
Marshall Islands	2	41.7	11.4	8.4	11.1	1,415.3
Martinique	31	79.2	-	2.8	1.3	3,635.0
Mauritania	54	13.3	3.6	55.5	31.1	229.0
Mauritius	67	52.3	2.8	17.8	4.5	1,967.9

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TEEC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
Mayotte	5	20.9	-	6.2	8.6	1,137.8
Mexico	7,883	62.1	3.8	101.6	6.1	2,026.9
Micronesia (Federates States of)	2	21.6	6.6	1.2	1.0	493.4
Mongolia	272	92.0	8.0	240.4	2.7	1,785.5
Montenegro	42	67.8	4.5	71.0	26.3	4,281.1
Montserrat	1	148.8	-	0	0	3,867.1
Morocco	796	22.8	3.1	7.4	6.7	856.6
Mozambique	538	19.2	17.2	150.5	76.3	435.3
Myanmar	846	15.7	3.2	134.9	63.6	248.6
Namibia	76	30.8	3.1	26.2	8.1	1,538.1
Nauru	1	65.4	4.4	0.1	0	2,250.0
Nepal	505	17.7	7.6	85.2	83.4	136.6
Netherlands	3,034	179.3	3.9	65.6	2.8	6,092.3
New Caledonia	63	239.8	-	2.6	0.4	10,801.2
New Zealand	946	208.9	5.9	81.9	9.5	8,641.7
Nicaragua	165	27.1	5.5	55.9	41.8	558.4
Niger	95	4.8	5.3	105.0	75.2	46.0
Nigeria	5,832	32.0	5.7	181.8	86.4	137.7
Niue	0.1	63.9	-	16.3	22.1	1,858.4
Northern Mariana Islands ¹⁰	-	-	-	-	-	6,068.6
Norway	1,219	233.8	3.7	707.0	5.4	21,256.7
Oman	1,280	285.1	7.6	271.9	0.1	6,438.4

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TEEC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
Other Asia	4,542	194.2	-	11.2	0.6	9,869.7
Pakistan	3,360	17.8	3.8	71.9	25.1	490.1
Palau	3	147.3	9.8	0	0	3,475.6
Panama	171	43.6	2.1	21.0	6.2	2,175.7
Papua New Guinea	159	20.8	5.2	105.8	48.6	480.9
Paraguay	260	39.2	4.5	126.4	48.0	1,593.0
Peru	937	29.9	2.5	102.5	13.8	1,349.2
Philippines	2,050	20.4	2.9	48.7	24.2	673.4
Poland	3,999	103.6	4.2	70.9	9.0	3,310.4
Portugal	907	87.6	3.3	24.4	16.2	4,426.4
Puerto Rico ¹⁰	60	16.2	0.5	2.3	0	4,747.2
Qatar	1,895	847.5	6.4	486.9	0.04	16,273.9
Republic of Korea	11,364	225.9	6.5	18.6	1.9	9,848.4
Republic of Moldova	84	20.7	5.0	17.9	16.1	905.7
Réunion	59	68.9	-	15.4	1.5	3,085.4
Romania	1,340	68.7	3.3	83.2	16.7	2,205.4
Russian Federation	29,841	208.0	8.3	187.7	0.5	5,063.0
Rwanda	97	8.4	4.9	87.1	85.6	36.1
Saint Helena	0.1	37.2	-	9.0	5.2	2,272.2
Saint Kitts and Nevis	3	60.3	2.6	1.1	0	3,307.4
Saint Lucia	6	32.6	2.8	1.5	2.1	1,824.6
Saint Pierre et Miquelon	1	174.6	-	0.8	0.7	7,077.0

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TEEC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
Saint Vincent and the Grenadines	3	30.6	2.9	4.8	2.3	1,370.3
Samoa	6	29.1	5.2	25.9	31.3	601.9
Sao Tome and Principe	3	14.1	4.7	39.1	40.0	279.0
Saudi Arabia	11,172	354.2	7.0	255.7	0.01	9,282.2
Senegal	171	11.3	5.0	46.6	41.9	222.8
Serbia	612	69.1	6.5	73.3	13.4	3,058.8
Seychelles	6	65.3	2.6	1.0	0.7	3,361.6
Sierra Leone	67	10.3	7.0	80.6	77.2	17.05
Singapore	1,233	220.0	2.8	2.3	0.1	8,478.9
Sint Maarten (Dutch part)	12	304.7	-	0	0.05	10,156.1
Slovakia	677	124.7	4.4	39.2	7.1	4,491.3
Slovenia	275	133.2	4.6	51.5	13.3	6,185.2
Solomon Islands	6	10.4	5.0	53.7	63.2	141.7
Somalia	137	12.7	-	93.8	94.3	29.20
South Africa	6,367	116.8	9.3	110.7	17.1	3,642.1
South Sudan	23	1.9	1.1	1,381.9	39.2	23.5
Spain	4,905	106.3	3.3	27.9	6.9	5,031.0
Sri Lanka	433	20.9	1.9	41.8	42.5	566.8
State of Palestine	72	15.5	3.8	12.6	6.3	1,117.4
Sudan	655	16.3	3.9	100.5	56.0	263.0
Suriname	29	54.2	3.6	137.6	9.0	3,264.1
Swaziland	49	38.1	4.8	76.9	29.5	834.8

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TEEC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
Sweden	1,887	192.9	4.2	74.6	21.3	12,767.5
Switzerland	1,024	123.4	2.2	49.7	6.3	7,017.9
Syrian Arab Republic	419	22.7	-	46.8	0.1	700.7
Tajikistan	114	13.4	5.0	71.9	0.8	1,467.4
Thailand	5,412	79.6	5.2	54.1	15.0	2,573.2
TF Yugoslav Rep. Macedonia	118	56.8	4.4	49.3	19.4	3,188.7
Timor-Leste	8	6.7	3.3	1,850.7	18.2	214.6
Togo	143	19.6	14.3	79.0	68.7	150.6
Tonga	2	15.7	3.0	1.9	1.1	463.1
Trinidad and Tobago	816	599.8	19.2	193.3	0.1	7,134.1
Tunisia	452	40.1	3.7	57.7	10.8	1,371.7
Turkey	5,338	67.9	2.9	24.6	6.6	2,730.7
Turkmenistan	1,160	215.8	13.9	293.8	0.1	2,321.2
Turks and Caicos Islands	3	84.2	-	0.4	0.6	6,403.8
Tuvalu	0.1	14.4	3.9	5.0	0	716.0
Uganda	655	16.8	9.8	90.9	87.2	71.5
Ukraine	3,753	83.7	11.7	68.0	2.9	2,654.6
United Arab Emirates	3,587	391.7	5.9	269.9	0.1	12,130.2
United Kingdom	7,498	115.9	3.0	65.7	3.2	4,679.7
United Republic of Tanzania	1,087	20.3	8.3	88.1	85.1	98.2
United States	90,691	281.8	5.3	92.6	5.2	11,750.0
United States Virgin Islands ¹⁰	0.1	1.0	-	-	-	6,167.0

Country or area	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable energy share in TREC	Electricity consumption per capita
	PJ	GJ	MJ/ INTL \$	%	%	kWh
Uruguay	212	61.9	3.1	59.5	40.7	3,071.2
Uzbekistan	1,783	59.7	10.0	131.4	0.02	1,554.6
Vanuatu	3	10.8	3.9	32.6	33.5	219.9
Venezuela (Bolivarian Republic) ¹¹	2,449	78.7	5.4 ²⁰¹⁴	299.6	2.9	2,306.9
Viet Nam	2,994	32.0	5.8	101.7	29.5	1,537.6
Wallis and Futuna Islands	0.3	25.7	-	0	0	1,194.4
Yemen	145	5.4	2.0	118.8	2.8	116.1
Zambia	430	26.5	7.4	89.6	75.6	706.3
Zimbabwe	472	30.2	15.6	95.2	78.6	440.7

(10) Energy statistics for this country are partially covered by another country (see country notes at: <https://unstats.un.org/unsd/energy/yearbook/2015/06cn.pdf>). Indicators, therefore, should be interpreted with caution.

(11) Energy intensity for this country refers to the year indicated in the table.

General notes

Please note that all UN data are subject to the Terms and Conditions available at: <http://data.un.org/Host.aspx?Content=UNdataUse>.

Data sources

Data used in this publication derive from the Energy Statistics database maintained by the United Nations Statistics Division. For more information please refer to <https://unstats.un.org/unsd/energy/edbase.htm>.

Population data used to calculate the per capita indicators are from the United Nations Population Division and are available at: <https://esa.un.org/unpd/wpp>.

GDP data used to calculate energy intensity are from the World Bank (GDP, PPP, constant 2011 international \$) and are available at: <https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD>.

Geographical Notes

The assignment of countries and areas follows the United Nations publication "Standard Country or Area Codes for Statistical Use" originally published as Series M, No. 49 and now commonly referred to as the M49 standard. For more information please refer to <https://unstats.un.org/unsd/methodology/m49>.

For a detailed description of the geographical coverage of the data please refer to <https://unstats.un.org/unsd/energy/yearbook/2015/06cn.pdf>.

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The designations employed and the presentation of material on the maps do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. Final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined. A dispute exists between the Governments of Argentina and the United Kingdom of Great Britain and Northern Ireland concerning sovereignty over the Falkland Islands (Malvinas).

The expression *Other countries (x)* is used to represent all the countries that are not shown separately in a chart and indicates that x countries have positive values.

Products and flows

All the definitions of products and flows are based on the International Recommendations for Energy Statistics (IRES) available at: <https://unstats.un.org/unsd/energy/ires>. Particularly for products, the definitions

come from the Standard International Energy Product Classification (SIEC) contained in IRES. A more concise version of these definitions can be found in the Energy Balance publication under the chapter "Concepts and Definitions". The Energy Balance publication is available at: <https://unstats.un.org/unsd/energy/balance>.

Please note that in the present publication the product coal includes peat unless otherwise specified; energy sources (i.e. coal, oil, biofuels and waste, and electricity and heat) generally refer to both primary and secondary products, with the exception of the chapter on primary energy.

Chapter: Total energy supply

International aviation and marine bunkers are excluded from world total energy supply.

Total energy supply per capita is calculated by dividing total energy supply by population.

Energy intensity is calculated by dividing total energy supply by GDP, PPP (constant 2011 international \$).

Chapter: Primary energy production

Energy self-sufficiency is calculated as the ratio between primary energy production and total energy supply expressed in percentage.

There is a break in primary energy production of biofuels and waste between 2000 and 2001 following a methodological change in accounting of biofuels in India.

The categories *other primary oil* (chart 27 and table 28) refer to additives and oxygenates, and other hydrocarbons.

The category *waste* (chart 33 and table 34) refers to other vegetable material and residues (vegetal waste), animal waste, industrial waste and municipal waste.

The category *other biofuels* (chart 33 and table 34) refers to biogasoline, biodiesel, biogases, bio jet kerosene, bagasse, black liquor and other liquid biofuels as defined in SIEC (for definitions, see section "Products and flows" above).

Chapter: Electricity

Electricity generation per capita is calculated by dividing electricity consumption by population.

Electricity Capacity is the abbreviated form for the Net Maximum Electrical Capacity, which in turn is defined as the maximum active power that can be supplied continuously, with all plants running, at the point of outlet (i.e., after taking

the power supplies for the station auxiliaries and allowing for the losses in those transformers considered integral to the station). For annual data, it is considered as measured at the end of the reference year.

Utilization of electricity capacity is calculated by dividing electricity production by electricity capacity and then by the total number of hours in a year. It shows a percentage of theoretical maximal utilization; since the capacity is measured on a net basis and the production on a gross basis, there is a small upwards bias in this utilization indicator.

The category *solar, wind and other sources* (Facts and figures box, chart 38 and table 39) refers to solar, wind, geothermal, chemical heat, tide, wave and marine and other non-specified sources.

Both the category *total renewables* (table 43 and 47 and chart 46) and the category *renewable sources* (tables 49 and 51 and chart 50) refer to hydro, wind, solar, geothermal, tide, wave, marine as well as thermal from combustible renewables.

The category *non-renewable sources* (tables 49 and 51 and chart 50) refers to thermal from non-renewable fuels, nuclear and other non-specified net installed capacities.

Chapter: Refinery output

Refinery output refers to total refinery output as reported. Note that this number is different from the one found in the energy balance, column Oil products and row Oil refineries. This is due to the principles of constructing balances, where what appears in the transformation block is the net output (output minus input). Since refinery feedstocks are not considered primary oil, they enter as input in the same cell as the output of all oil products and end up causing this difference.

Refinery input refers to the amount of oil (conventional crude oil, natural gas liquids, feedstocks, other hydrocarbons, and additives and oxygenates) that has entered the refinery process.

Refinery capacity is the theoretical maximum capacity of crude oil refineries available for operation at the end of the reference year.

The category *others* (chart 62 and table 63) refers to refinery gas, ethane, LPG, white spirit and SBP industrial spirits, lubricants, paraffin waxes, petroleum coke, bitumen, refinery feedstocks, and other oil products not elsewhere classified. The category *gasolines* refers to aviation gasoline, motor gasoline and gasoline-type jet fuel; the category *kerosenes* refers to kerosene-type jet fuel and other kerosene.

The category *world total oil supply* (table 67) excludes international aviation and marine bunkers.

Chapter: Total final consumption

Total final consumption per capita is calculated by dividing total final consumption by population.

The category *other* (chart 75 and table 76) refers to agriculture, forestry and fishing, commerce and public services and to other non-specified consumers. The categories *industry*, *transport*, *households* and *other* do not include non-energy use in these sectors.

Renewable energy share in total final energy consumption (map 77 and table 78) refers to renewables directly consumed as energy products, as well as final consumption of electricity and heat attributed to renewable sources, including combustible renewables. It corresponds to SDG indicator 7.2.1.

Chapter: Balances

The category *total energy supply* excludes international aviation and marine bunkers.

Note that the figure found in the column Oil products and row Oil refineries does not correspond to the total refinery output. This is due to the principles of constructing balances, where what appears in the transformation block is the net output (output minus input). Since refinery feedstocks are not considered primary oil, they enter as input in the same cell as the output of all oil products and end up causing this difference. For the total refinery output, the reader should refer to the respective chapter.

The category *of which: renewables* follows the convention used in the Energy Balance publication available at: <https://unstats.un.org/unsd/energy/balance> and therefore includes only directly identifiable renewable energy. As a result, no part of imports and exports of heat or electricity, nor their consumption, losses or own use, is considered as renewable, which may lead to differences with values presented in other chapters.

Chapter: Indicators

Energy statistics for American Samoa, Guam, Guernsey, Isle of Man, Jersey, Liechtenstein, Northern Mariana Islands, Puerto Rico, United States Virgin Islands are partially covered by another country (see country notes at: <https://unstats.un.org/unsd/energy/yearbook/2015/06cn.pdf>). Indicators for these areas, therefore, should be interpreted with caution.

Energy use (TES) per capita is calculated by dividing total energy supply by population.

Energy intensity is calculated by dividing total energy supply by GDP, PPP (constant 2011 international \$).

Self-sufficiency is calculated as the ratio between primary energy production and total energy supply expressed in percentage.

Renewable energy share in total final energy consumption refers to renewables directly consumed as energy products, as well as final consumption of electricity and heat attributed to renewable sources, including combustible renewables. It corresponds to SDG indicator 7.2.1.

Electricity consumption per capita is calculated by dividing electricity consumption by population.