

Department of Economic and Social Affairs
Statistics Division

Statistics Papers

Series E No.7

2024

Energy Statistics Pocketbook



United Nations
New York, 2024

Department of Economic and Social Affairs

The Department of Economic and Social Affairs of the United Nations 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 United Nations Member States 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.

Note

The designations employed and the presentation of the material in the present publication do not imply the expression of any opinion whatsoever on the part of the United Nations concerning the legal status of any country or of its authorities, or the delimitations of its frontiers. The term "country" as used in this report also refers, as appropriate, to territories or areas. The designations of country groups are intended solely for statistical or analytical convenience and do not necessarily express a judgement about the stage reached by a particular country, territory or area in the development process. Mention of the names of firms and commercial products does not imply endorsement by the United Nations. The symbols of United Nations documents are composed of capital letters and numbers.

United Nations Publications, 405 East 42nd Street, S-09FW001, New York, NY 10017 USA

Email: publications@un.org

Website: shop.un.org

ST/ESA/STAT/SER.E/7

Sales number: E.24.XVII.5

print ISBN 978-92-1-003003-8

PDF ISBN 978-92-1-358694-5

print ISSN 2617-2828

online ISSN 2617-2836

Copyright © United Nations 2024

All rights reserved

Content

	Page
Introduction.....	iv
Total energy supply.....	1
Primary energy production.....	6
Electricity.....	19
Refinery output.....	33
Total final consumption.....	37
CO ₂ emissions from fossil fuel combustion.....	43
Energy balances.....	46
Energy indicators.....	60
General notes.....	68

Introduction

This publication is the seventh 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 Energy Statistics Section of the United Nations Statistics Division (UNSD). The data are available in the 2021 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 a more detailed, yet number-heavy, 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 other three annual publications sourced from the same database as this pocketbook, is available at <https://unstats.un.org/unsd/energystats>.

Acknowledgements

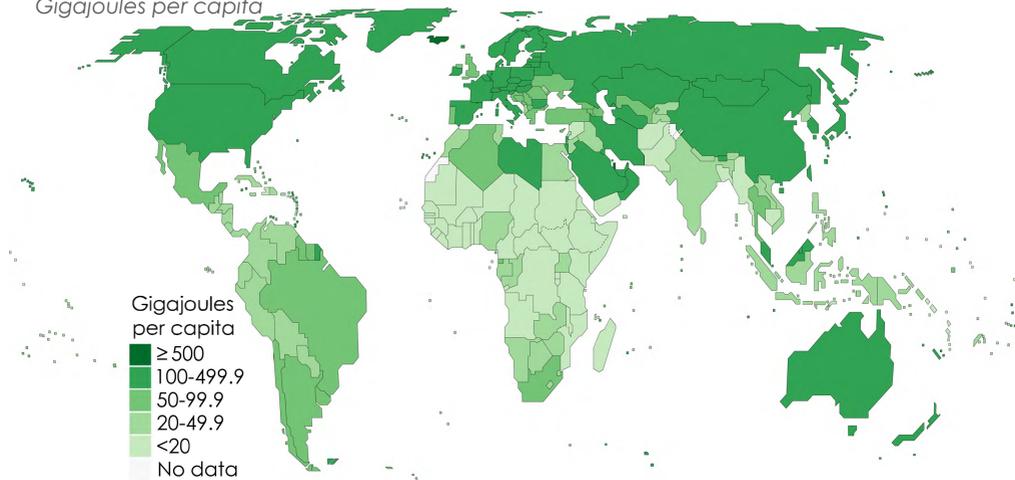
This publication has been compiled by the Energy Statistics Section of UNSD, which is headed by Mr. Leonardo Souza. The conceptual design of this pocketbook has been carried out by Mr. Souza, Ms. Agnieszka Koscielniak and Ms. Costanza Giovannelli. Ms. Giovannelli took the lead in the graphic design,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

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, 2021

Gigajoules per capita



Source: UN Energy Statistics Database / UN Geospatial. The designations employed and the presentation of material on the maps in this publication 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).

FACTS AND FIGURES

World total energy supply¹ (TES) was 612.1 EJ in 2021, increasing by 5.5% compared to 2020. The increase affected almost all the regions but was most intense in Latin America and the Caribbean (+7.1%) and Europe (+7.0%). In China, TES increase between 2020 and 2021 was equal to 8.7 EJ (+6.2%).

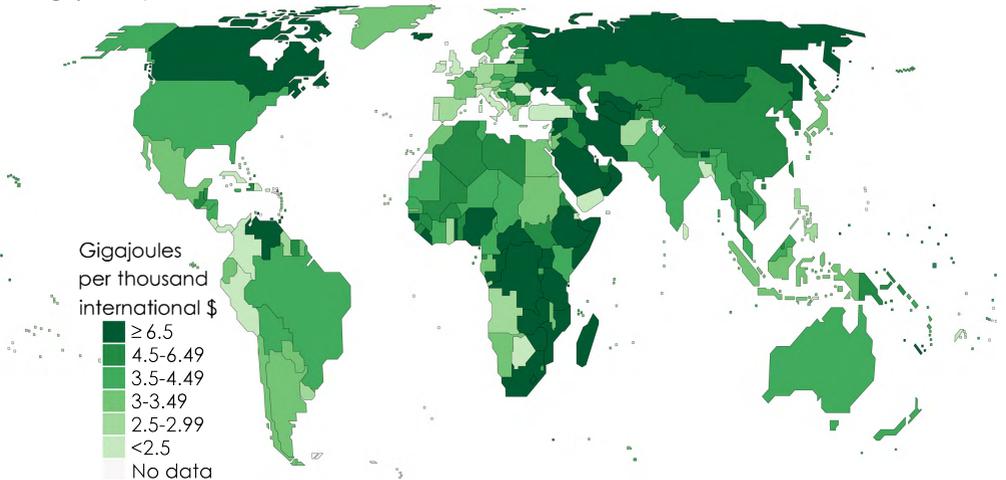
The Asian share of TES was more than half of the world total in 2021 (51.0%) with China alone accounting for 24.3% of the world TES. Despite the significant resurgence of Europe's TES in the last year, its share of world TES has been declining in the last 30 years, dropping from 35.3% in 1990 to 17.7% in 2021.

International bunkers were equal to 12.9 EJ in 2021 (corresponding to 2.1% of world TES), showing an increase compared to 2020 (+4.9%) but remaining well below the levels reached before the pandemic.

(1) See notes on pages 68-74.

2. Energy intensity², 2021

Gigajoules per thousand international \$



Source: UN Energy Statistics Database / UN Geospatial. The designations employed and the presentation of material on the maps in this publication 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).

3. Energy supply (total, per capita and energy intensity²), major countries, 2021

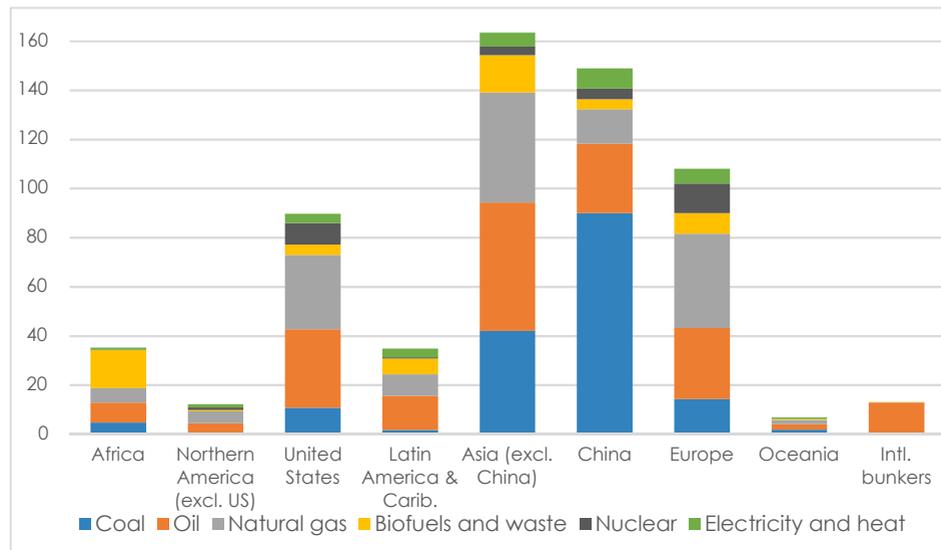
Exajoules, gigajoules per capita and gigajoules per thousand international \$

Country	TES	Country	TES per capita	Country	Energy intensity ²
China	148.9	Iceland	980.6	Iceland	18.3
United States	89.7	Qatar	665.0	Trinidad and Tobago	18.3
India	40.1	Bahrain	444.1	Zimbabwe	14.4
Russian Federation	34.8	Trinidad and Tobago	421.3	Liberia	13.7
Japan	16.8	United Arab Emirates	379.4	Dem. Rep. Congo	13.7
Brazil	12.9	Brunei Darussalam	376.9	Mongolia	12.4
Iran (Islamic Rep. of)	12.3	Kuwait	355.8	New Caledonia	12.3
Republic of Korea	12.2	Gibraltar	322.5	Mozambique	11.9
World	612.1	World	77.4	World	4.5

(2) See notes on pages 68-74.

4. Total energy supply by region and source, 2021

Exajoules



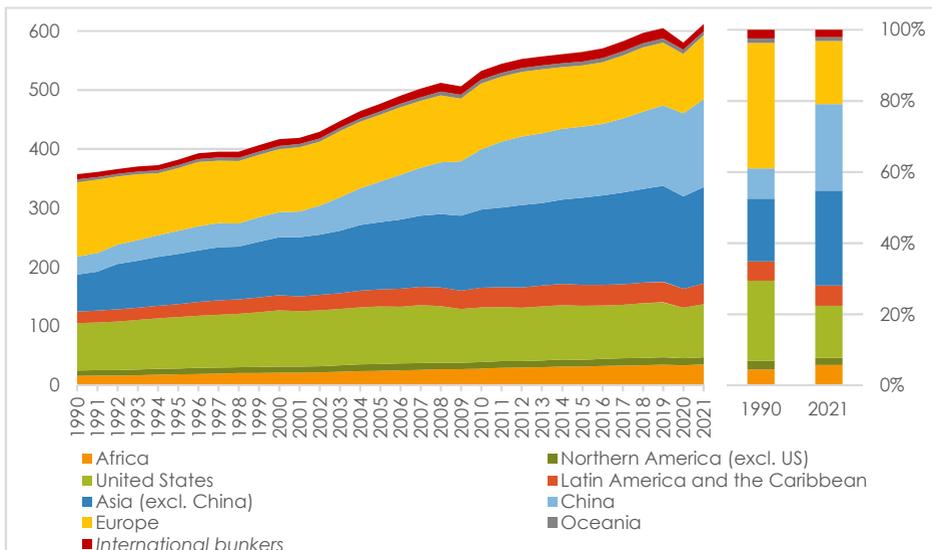
5. Total energy supply by region and source, 2021

Exajoules

Region	Coal	Oil	Natural gas	Biofuels and waste	Nuclear	Electricity and heat	TES
Africa	4.7	8.1	5.9	15.5	0.1	0.9	35.3
Northern America (excl. US)	0.4	4.0	4.9	0.5	1.0	1.4	12.2
United States	10.7	32.0	30.3	4.2	8.8	3.8	89.7
Latin America and the Caribbean	1.6	14.0	8.7	6.5	0.4	3.6	34.8
Asia (excl. China)	42.1	52.2	44.7	15.2	3.5	5.7	163.5
China	89.9	28.3	14.0	4.1	4.4	8.2	148.9
Europe	14.2	29.1	38.3	8.5	12.0	6.0	108.1
Oceania	1.8	2.2	1.7	0.3	0.0	0.7	6.8
International bunkers	-	12.9	0.02	0.01	-	-	12.9
World	165.4	182.8	148.5	54.9	30.3	30.3	612.1

6. Total energy supply by region, 1990 – 2021

Exajoules and percentage



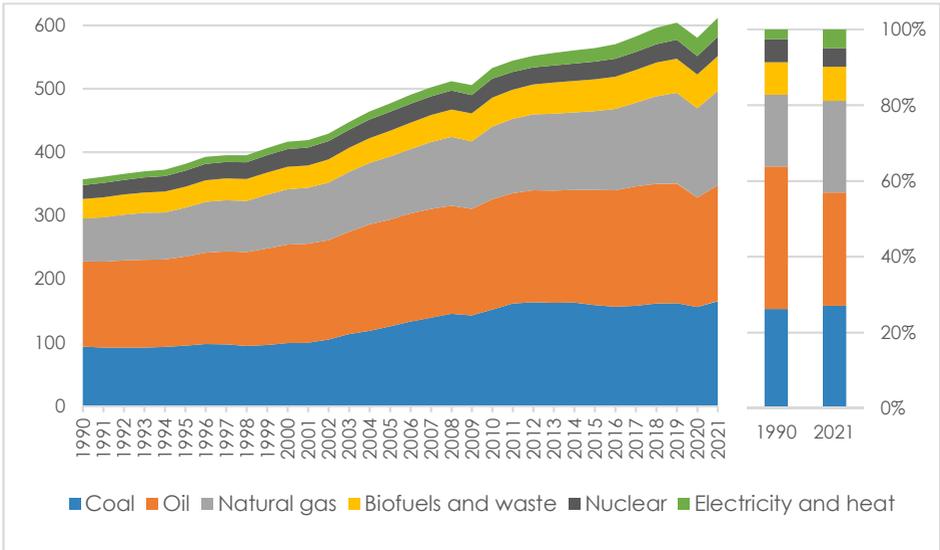
7. Total energy supply by region, 1990, 2000, 2010, 2020 and 2021

Exajoules

Region	1990	2000	2010	2020	2021
Africa	15.9	21.0	28.3	33.7	35.3
Northern America (excl. US)	8.9	10.6	10.8	11.9	12.2
United States	80.3	95.3	92.9	85.4	89.7
Latin America and the Caribbean	19.6	25.5	33.0	32.5	34.8
Asia (excl. China)	62.8	98.1	132.3	156.2	163.5
China	30.4	42.5	101.6	140.2	148.9
Europe	126.3	106.7	111.9	101.0	108.1
Oceania	4.4	5.5	6.5	6.9	6.8
International bunkers	8.8	11.2	14.9	12.3	12.9
World	357.3	416.3	532.3	580.2	612.1

8. World total energy supply by source, 1990 – 2021

Exajoules and percentage



9. World total energy supply by source, 1990, 2000, 2010, 2020 and 2021

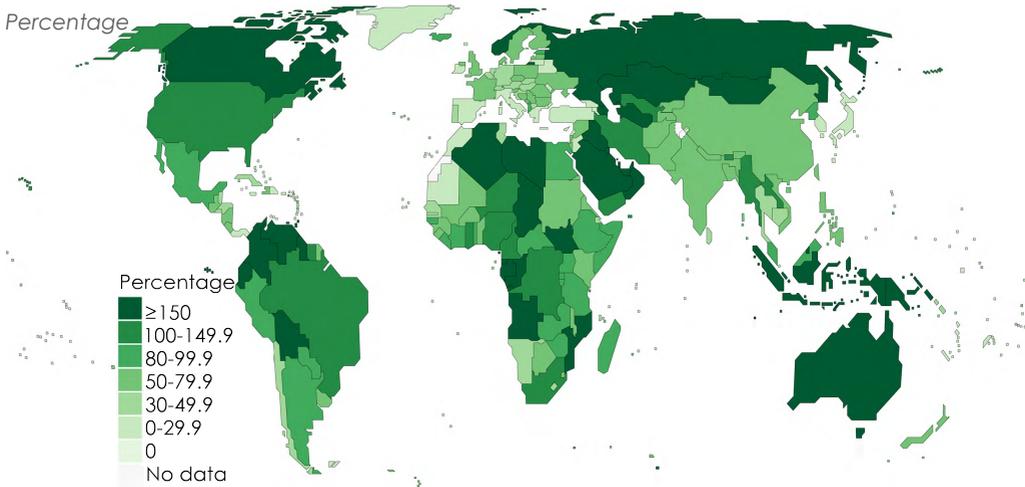
Exajoules

Source	1990	2000	2010	2020	2021
Coal	93.5	99.3	151.6	155.9	165.4
Oil	134.4	155.0	174.0	172.2	182.8
Natural gas	67.7	87.3	114.6	141.1	148.5
Biofuels and waste	30.5	35.2	45.6	53.4	54.9
Nuclear	21.8	28.0	29.8	28.9	30.3
Electricity and heat	9.3	11.7	16.7	28.7	30.3
Total	357.3	416.3	532.3	580.2	612.1

Primary energy production

10. Energy self-sufficiency³, 2021

Percentage



Source: UN Energy Statistics Database / UN Geospatial. The designations employed and the presentation of material on the maps in this publication 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).

FACTS AND FIGURES

World primary energy production reached almost 610 EJ in 2021, a 3.5% increase compared to 2020. Since 1990, primary production increased by 68.9%, corresponding to an average compounded yearly growth of 1.7%. Oil, coal and natural gas, in this order, are the largest energy sources, together representing 81.2% of total primary energy production.

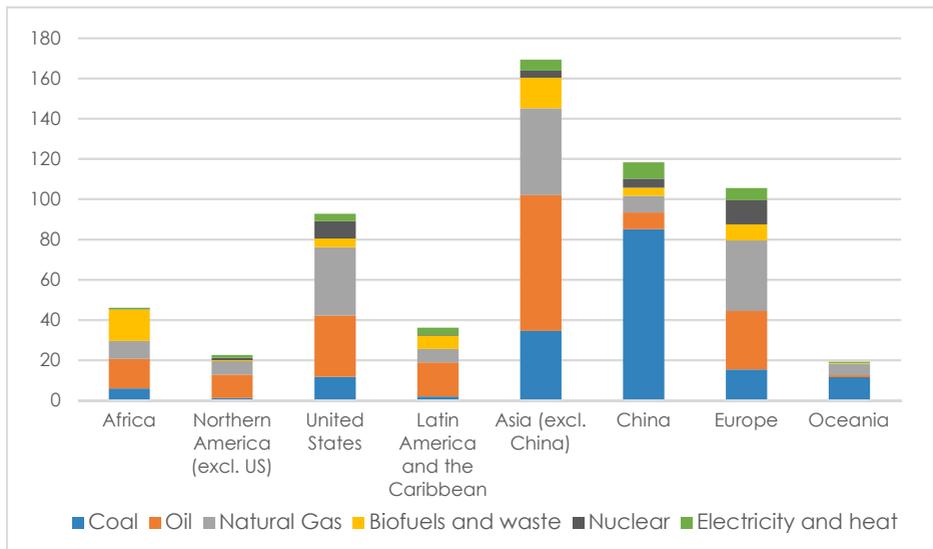
A significant share of 2021 primary energy production occurred in a handful of countries:

- Six countries produced 87.9% of all primary coal, with China alone producing more than half (50.9%) of the world coal;
- The United States topped the oil producers with 16.9% of the world production. Five countries concentrated more than half of all primary oil production (52.9%);
- Four countries (United States, Russian Federation, Iran and China) produced more than half of all natural gas (53.2%). Of the major four producers, the largest increase in 2021 was registered in Russian Federation, where natural gas production rose by 2.5 EJ (+9.9%).

(3) See notes on pages 68-74.

11. Primary energy production by region and source, 2021

Exajoules



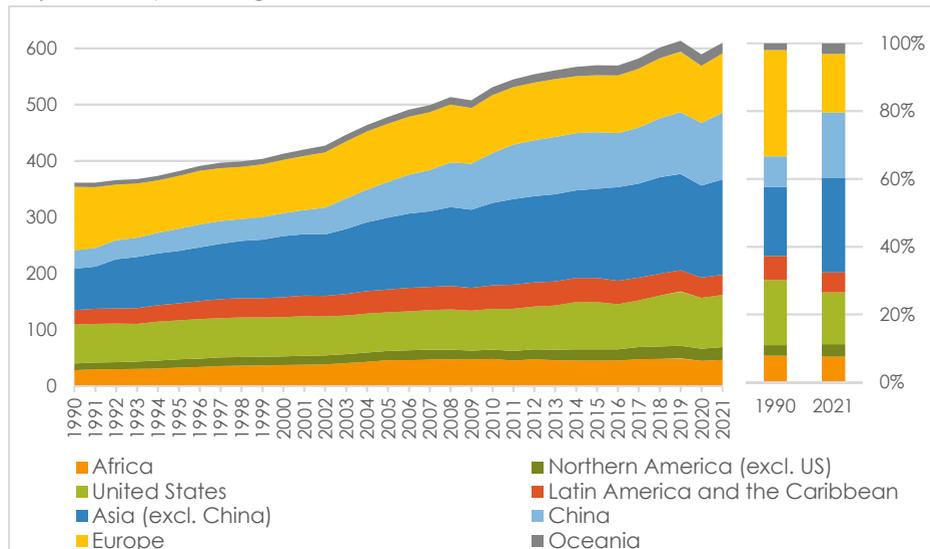
12. Primary energy production by region and source, 2021

Exajoules

Region	Coal	Oil	Natural gas	Biofuels and waste	Nuclear	Electricity and heat	Total
Africa	6.0	14.6	9.1	15.4	0.1	0.9	46.1
Northern America (excl. US)	1.1	11.7	6.7	0.5	1.0	1.5	22.6
United States	11.7	30.4	34.0	4.2	8.8	3.7	92.8
Latin America and the Caribbean	1.9	17.1	6.6	6.5	0.4	3.6	36.1
Asia (excl. China)	34.5	67.5	43.2	15.1	3.5	5.5	169.4
China	85.0	8.3	8.3	4.1	4.4	8.2	118.4
Europe	15.3	29.2	34.9	8.0	12.0	6.0	105.5
Oceania	11.5	0.9	5.8	0.3	0.0	0.7	19.2
World	167.0	179.7	148.6	54.2	30.3	30.1	609.9

13. Total primary energy production by region, 1990 – 2021

Exajoules and percentage



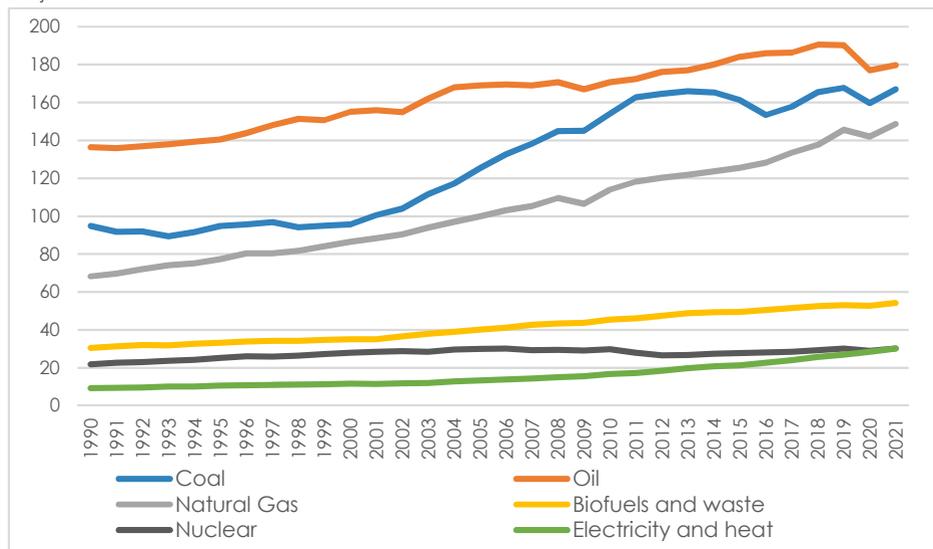
14. Total primary energy production by region, 1990, 2000, 2010, 2020 and 2021

Exajoules

Region	1990	2000	2010	2020	2021
Africa	28.1	36.6	47.6	44.2	46.1
Northern America (excl. US)	11.6	15.6	16.6	21.7	22.6
United States	69.1	69.7	72.3	90.4	92.8
Latin America and the Caribbean	25.8	35.4	41.8	35.8	36.1
Asia (excl. China)	73.5	108.5	146.7	163.5	169.4
China	32.7	40.8	88.6	111.7	118.4
Europe	112.9	95.0	102.7	101.4	105.5
Oceania	7.4	10.6	14.5	20.3	19.2
World	361.1	412.3	530.9	589.1	609.9

15. World primary energy production by source, 1990 – 2021

Exajoules



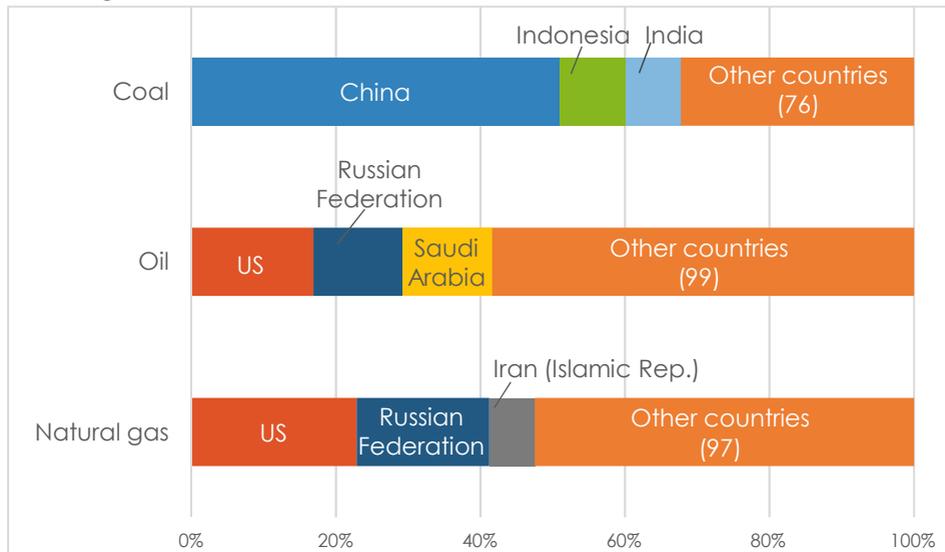
16. World primary energy production by source, 1990, 2000, 2010, 2020 and 2021

Percentage

Source	1990	2000	2010	2020	2021
Coal	26.3%	23.2%	29.0%	27.1%	27.4%
Oil	37.8%	37.6%	32.2%	30.1%	29.5%
Natural gas	18.9%	21.0%	21.5%	24.1%	24.4%
Biofuels and waste	8.4%	8.5%	8.6%	9.0%	8.9%
Nuclear	6.0%	6.8%	5.6%	4.9%	5.0%
Electricity and heat	2.6%	2.8%	3.1%	4.8%	4.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

17. Primary production of coal, oil, and natural gas, major countries, 2021

Percentage

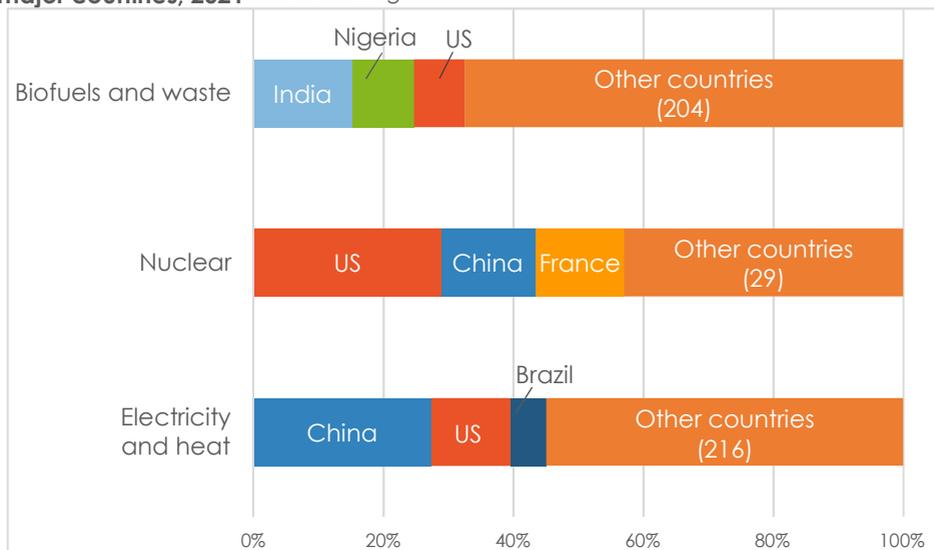


18. Primary production of coal, oil, and natural gas, major countries, 2021

Exajoules

Coal		Oil		Natural gas	
China	85.0	United States	30.4	United States	34.0
Indonesia	15.5	Russian Federation	22.2	Russian Federation	27.3
India	12.7	Saudi Arabia	22.2	Iran (Islamic Republic of)	9.4
United States	11.7	Canada	11.7	China	8.3
Australia	11.5	Iraq	8.5	Canada	6.7
Russian Federation	10.5	China	8.3	Qatar	6.3
South Africa	5.4	United Arab Emirates	7.6	Australia	5.1
Kazakhstan	1.9	Iran (Islamic Republic of)	6.5	Saudi Arabia	4.4
Others	12.8	Others	62.2	Others	47.0
World	167.0	World	179.7	World	148.6

19. Primary production of biofuels and waste, nuclear, and electricity and heat, major countries, 2021 – Percentage

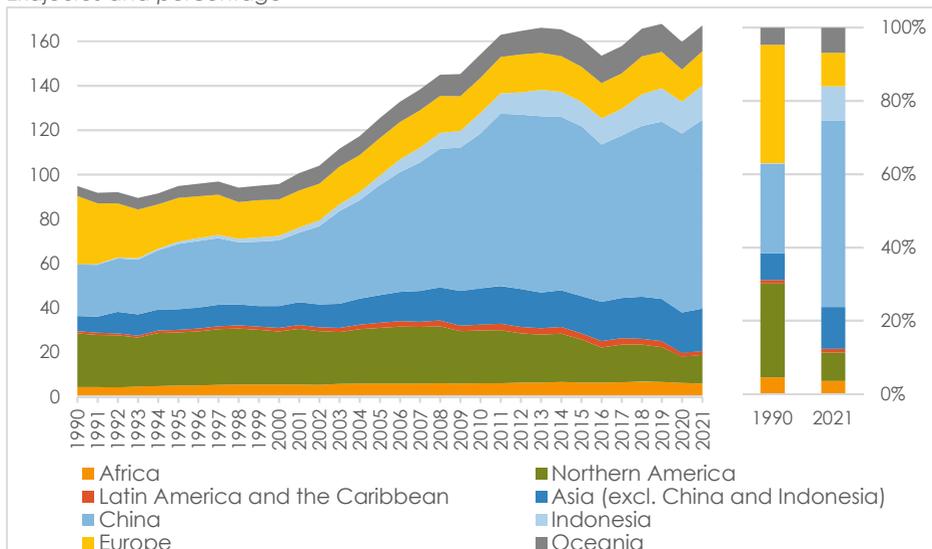


20. Primary production of biofuels and waste, nuclear, and electricity and heat, major countries, 2021 – Exajoules

Biofuels and waste		Nuclear		Electricity and heat	
India	8.2	United States	8.8	China	8.2
Nigeria	5.1	China	4.4	United States	3.7
United States	4.2	France	4.1	Brazil	1.7
Brazil	4.2	Russian Federation	2.4	Canada	1.5
China	4.1	Republic of Korea	1.7	India	1.1
Ethiopia	1.7	Canada	1.0	Türkiye	0.9
Indonesia	1.4	Ukraine	0.9	Russian Federation	0.8
Germany	1.4	Japan	0.8	Japan	0.7
Others	24.0	Others	6.2	Others	11.5
World	54.2	World	30.3	World	30.1

21. Primary production of coal by region, 1990 – 2021

Exajoules and percentage



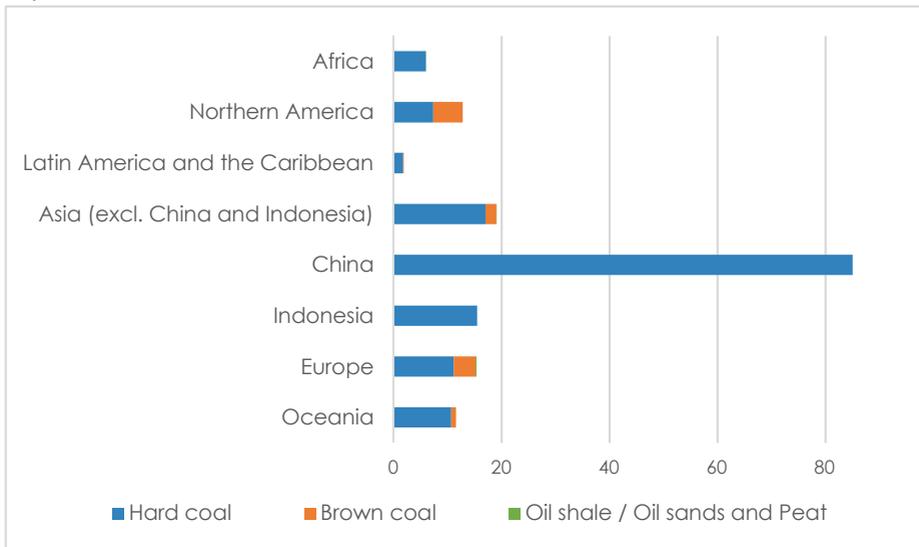
22. Primary production of coal by region, 1990, 2000, 2010, 2020 and 2021

Exajoules

Region	1990	2000	2010	2020	2021
Africa	4.3	5.5	6.2	6.3	6.0
Northern America	24.3	23.9	23.7	11.8	12.8
Latin America and the Caribbean	0.9	1.6	2.5	1.7	1.9
Asia (excl. China and Indonesia)	6.9	9.9	16.4	18.1	19.0
China	23.1	29.5	69.7	80.5	85.0
Indonesia	0.2	1.9	9.2	14.3	15.5
Europe	30.6	16.5	15.9	14.5	15.3
Oceania	4.5	7.0	10.6	12.4	11.5
World	94.8	95.7	154.1	159.7	167.0

23. Primary production of coal by region and type of fuel, 2021

Exajoules



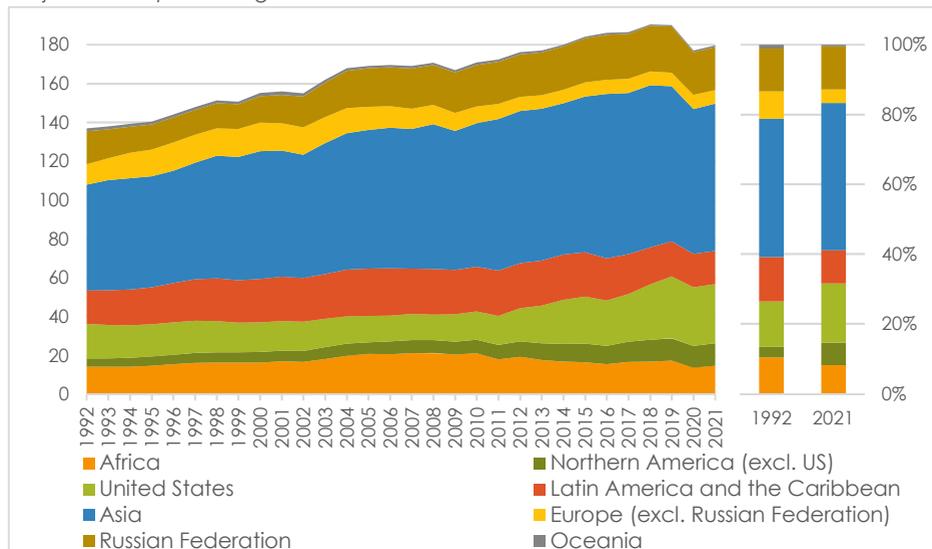
24. Primary production of coal by region and type of fuel, 2021

Exajoules

Region	Hard coal	Brown coal	Oil shale/ Peat	Total
Africa	6.0	0.0	0 ⁺	6.0
Northern America	7.3	5.5	0.0	12.8
Latin America and the Caribbean	1.8	0.1	0 ⁺	1.9
Asia (excl. China and Indonesia)	17.0	2.0	0 ⁺	19.0
China	85.0	0.0	0.0	85.0
Indonesia	15.5	0.0	0.0	15.5
Europe	11.1	4.0	0.2	15.3
Oceania	10.6	0.9	0.0	11.5
World	154.3	12.6	0.2	167.0

25. Primary production of oil by region, 1992 – 2021

Exajoules and percentage



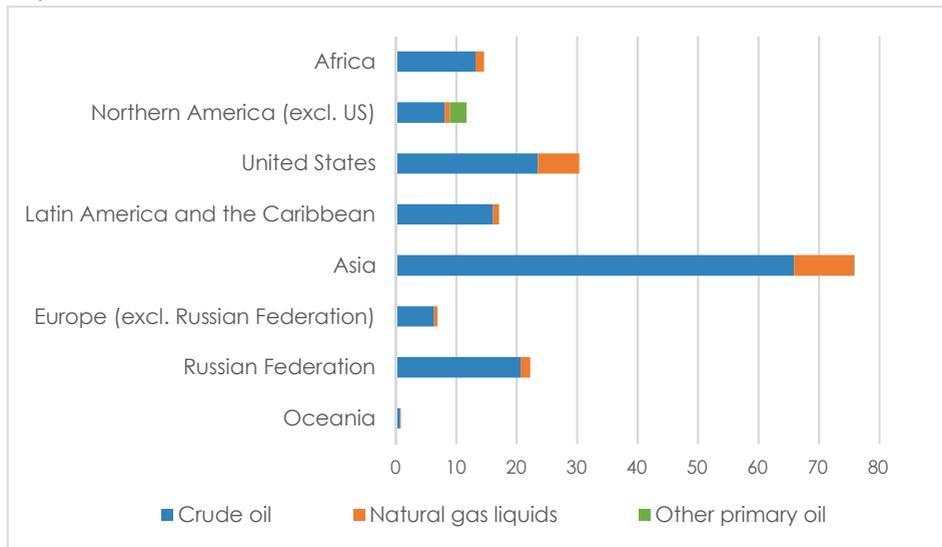
26. Primary production of oil by region, 1992, 2000, 2010, 2020 and 2021

Exajoules

Region	1992	2000	2010	2020	2021
Africa	14.2	16.4	21.1	13.8	14.6
Northern America (excl. US)	4.1	5.4	7.0	11.1	11.7
United States	17.8	15.3	14.4	30.2	30.4
Latin America and the Caribbean	17.3	22.3	23.1	17.2	17.1
Asia	54.4	65.8	73.9	74.6	75.9
Europe (excl. Russian Federation)	10.7	14.7	8.6	7.3	7.0
Russian Federation	16.8	13.6	21.4	21.9	22.2
Oceania	1.5	1.7	1.2	1.0	0.9
World	137.0	155.2	170.8	177.1	179.7

27. Primary production of oil by region and type of fuel, 2021

Exajoules



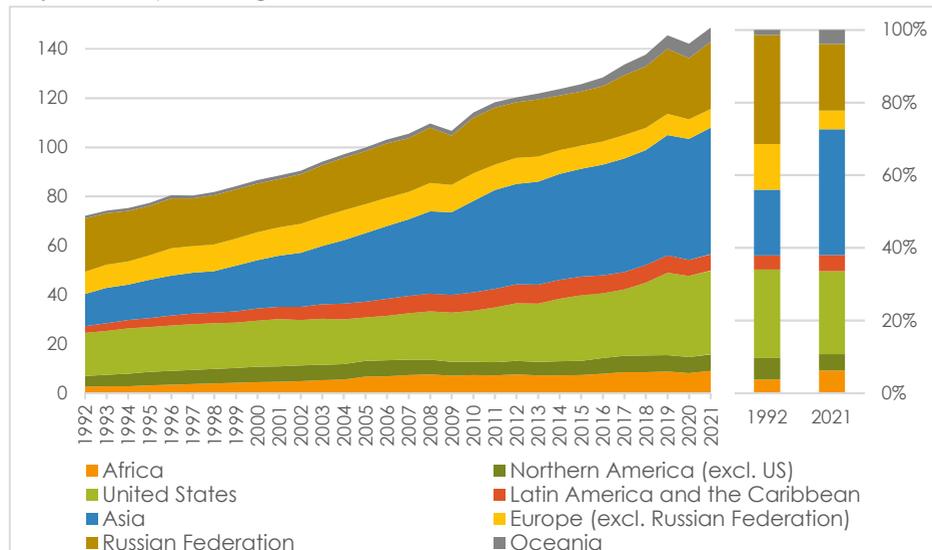
28. Primary production of oil by region and type of fuel, 2021

Exajoules

Region	Crude oil	Natural gas liquids	Other primary oil	Total
Africa	13.2	1.4	0.02	14.6
Northern America (excl. US)	8.1	0.8	2.8	11.7
United States	23.6	6.8	0.0	30.4
Latin America and the Caribbean	16.1	0.9	0.01	17.1
Asia	65.9	9.9	0.1	75.9
Europe (excl. Russian Federation)	6.4	0.5	0.1	7.0
Russian Federation	20.7	1.6	0.0	22.2
Oceania	0.7	0.1	0.0	0.9
World	154.6	22.1	2.9	179.7

29. Production of natural gas by region, 1992 – 2021

Exajoules and percentage



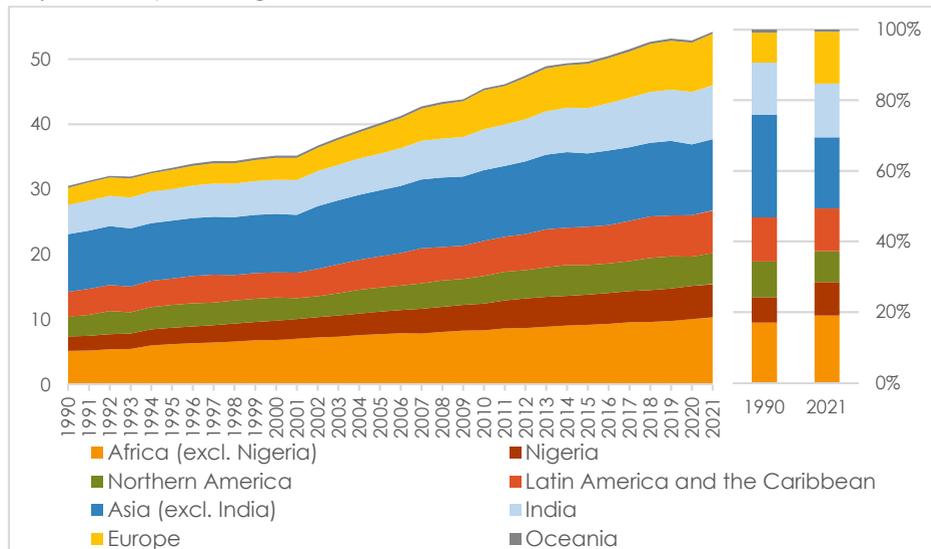
30. Production of natural gas by region, 1992, 2000, 2010, 2020 and 2021

Exajoules

Region	1992	2000	2010	2020	2021
Africa	2.6	4.5	7.3	8.1	9.1
Northern America (excl. US)	4.3	6.2	5.4	6.5	6.7
United States	17.5	18.7	20.7	33.0	34.0
Latin America and the Caribbean	2.8	5.0	7.5	6.6	6.6
Asia	13.1	19.7	37.1	49.2	51.5
Europe (excl. Russian Federation)	9.0	11.4	11.3	7.9	7.6
Russian Federation	21.7	19.7	22.6	24.8	27.3
Oceania	1.0	1.4	2.0	6.0	5.8
World	72.0	86.6	114.0	142.1	148.6

31. Primary production of biofuels and waste by region, 1990 – 2021

Exajoules and percentage



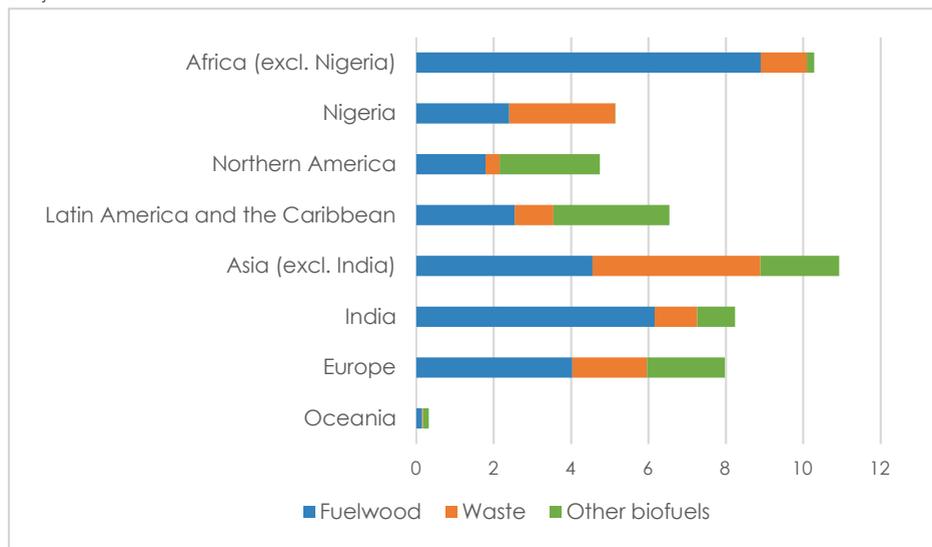
32. Primary production of biofuels and waste by region, 1990, 2000, 2010, 2020, 2021

Exajoules

Region	1990	2000	2010	2020	2021
Africa (excl. Nigeria)	5.2	6.9	8.3	10.1	10.3
Nigeria	2.2	2.9	4.1	5.1	5.1
Northern America	3.1	3.6	4.3	4.5	4.8
Latin America and the Caribbean	3.8	3.8	5.3	6.4	6.5
Asia (excl. India)	8.9	9.0	10.9	10.9	10.9
India	4.5	5.3	6.3	8.0	8.2
Europe	2.6	3.3	6.0	7.6	8.0
Oceania	0.3	0.3	0.3	0.3	0.3
World	30.5	35.1	45.5	52.8	54.2

33. Primary production of biofuels and waste by region and type of fuel, 2021

Exajoules

**34. Primary production of biofuels and waste by region and type of fuel, 2021**

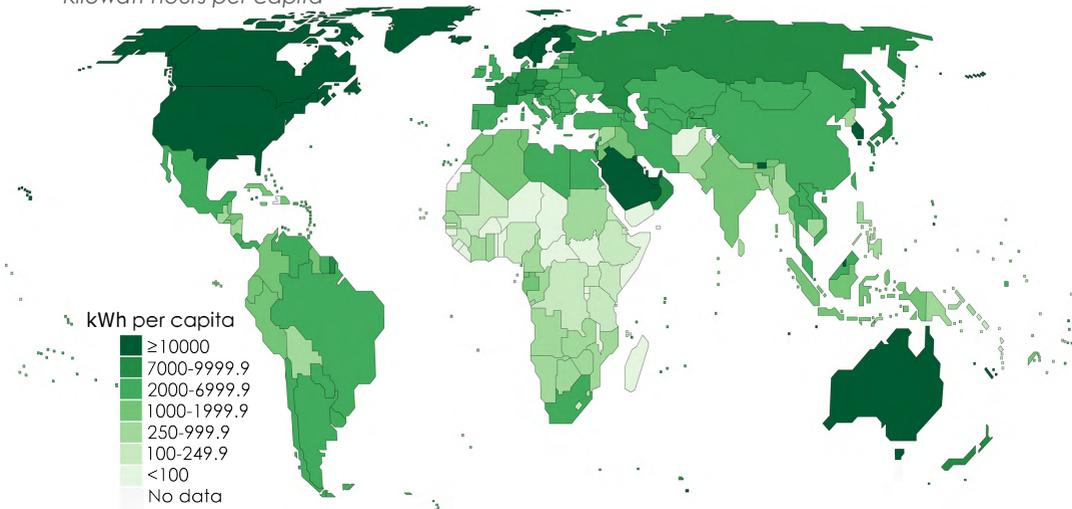
Exajoules

Region	Fuelwood	Waste	Other biofuels	Total
Africa (excl. Nigeria)	8.9	1.2	0.2	10.3
Nigeria	2.4	2.7	0 ⁺	5.1
Northern America	1.8	0.4	2.6	4.8
Latin America and the Caribbean	2.5	1.0	3.0	6.5
Asia (excl. India)	4.6	4.3	2.0	10.9
India	6.2	1.1	1.0	8.2
Europe	4.0	1.9	2.0	8.0
Oceania	0.2	0.03	0.1	0.3
World	30.6	12.7	10.9	54.2

Electricity

35. Electricity generation per capita, 2021

Kilowatt hours per capita



Source: UN Energy Statistics Database / UN Geospatial. The designations employed and the presentation of material on the maps in this publication 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).

FACTS AND FIGURES

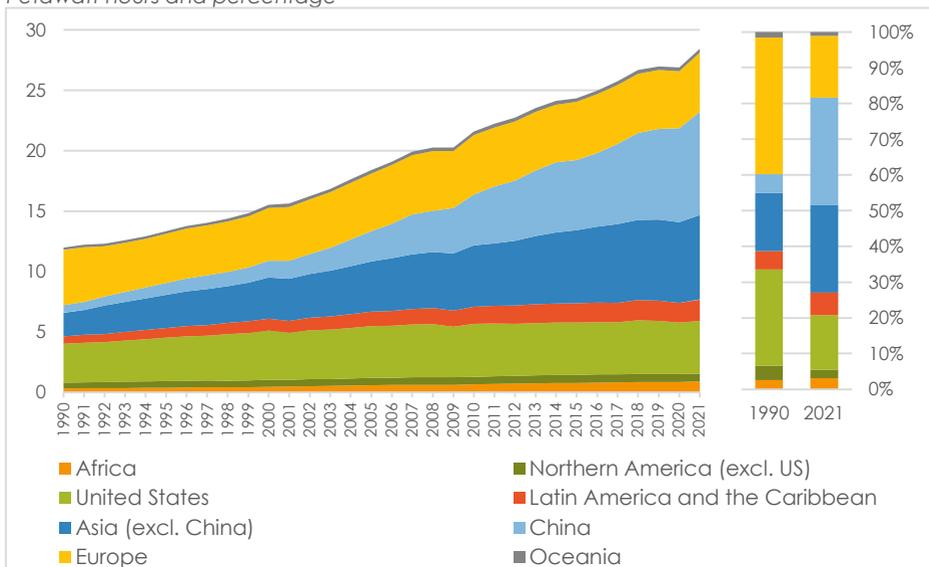
In 2021, total electricity generation reached 28.4 PWh, with a significant rebound after the decline in 2020 (+5.7%); overall, electricity from renewable sources kept increasing in 2021 at a faster pace than thermal electricity; for example, solar grew by 23.3% and wind by 16.7% in 2021, while electricity generated from thermal sources increased by 5.8% in comparison to 2020.

In the long run, electricity production increased by 137.4% between 1990 and 2021; the largest absolute growth was observed for electricity generated from coal (5,743 TWh or +129.3%) and natural gas (4,910 TWh or +274.4%), while the fastest growth was recorded for electricity generated from solar, wind and other sources⁴ (+4,834.7% or 2,973 TWh). In 2021, 72.1% of all electricity was generated from non-renewable sources (20,490 TWh), mainly from non-renewable thermal (62.1% or 17,651 TWh) and nuclear sources (9.8% or 2,799 TWh). However, renewable electricity accounted for 62.4% of global electricity capacity additions since 2010, growing to 3,152 GW in 2021 and reaching 38.9% of total electricity capacity.

(4) See notes on pages 68-74.

36. Total electricity generation by region, 1990-2021

Petawatt hours and percentage



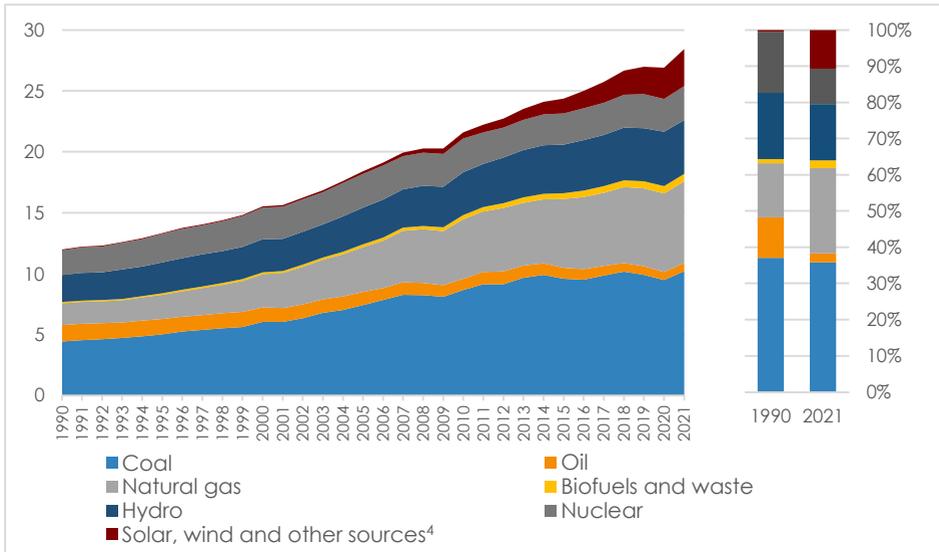
37. Total electricity generation by region, 1990, 2000, 2010, 2020 and 2021

Terawatt hours

Region	1990	2000	2010	2020	2021
Africa	311.6	437.3	677.6	850.7	902.0
Northern America (excl. US)	483.3	607.2	604.2	652.7	644.2
United States	3,218.6	4,052.7	4,378.4	4,260.0	4,374.7
Latin America and the Caribbean	624.5	1,010.7	1,405.4	1,625.4	1,751.3
Asia (excl. China)	1,951.7	3,403.8	5,093.5	6,702.2	6,999.0
China	621.2	1,355.6	4,207.2	7,779.1	8,534.3
Europe	4,571.5	4,386.8	4,913.8	4,696.3	4,900.5
Oceania	192.8	257.9	308.1	321.9	322.5
World	11,975.3	15,511.9	21,588.3	26,888.3	28,428.5

38. World electricity generation by source, 1990-2021

Petawatt hours and percentage



39. World electricity generation by source, 1990, 2000, 2010, 2020 and 2021

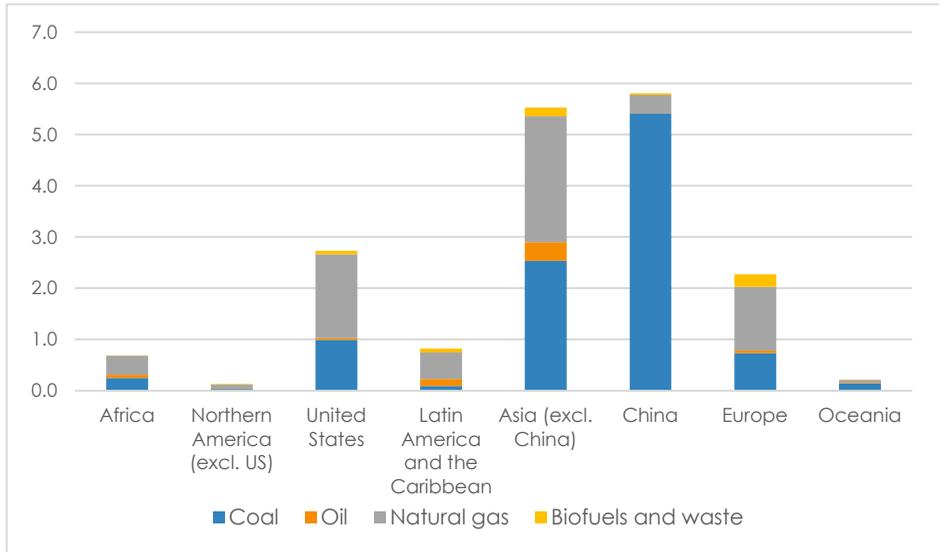
Terawatt hours

Source	1990	2000	2010	2020	2021
Thermal	7,701.0	10,112.2	14,792.6	17,183.1	18,187.0
- Coal	4,441.6	6,042.1	8,667.2	9,483.5	10,185.0
- Oil	1,339.1	1,198.6	919.3	660.7	694.0
- Natural gas	1,789.2	2,707.2	4,863.8	6,442.5	6,699.5
- Biofuels and waste	131.2	164.2	342.3	596.4	608.5
Nuclear	2,019.8	2,589.0	2,756.3	2,676.4	2,798.9
Hydro	2,193.0	2,706.8	3,528.6	4,463.4	4,408.3
Solar, wind and other sources ⁴	61.5	103.8	510.9	2,565.4	3,034.3
Total	11,975.3	15,511.9	21,588.3	26,888.3	28,428.5

(4) See notes on pages 68-74.

40. Thermal electricity generation by region and source, 2021

Petawatt hours



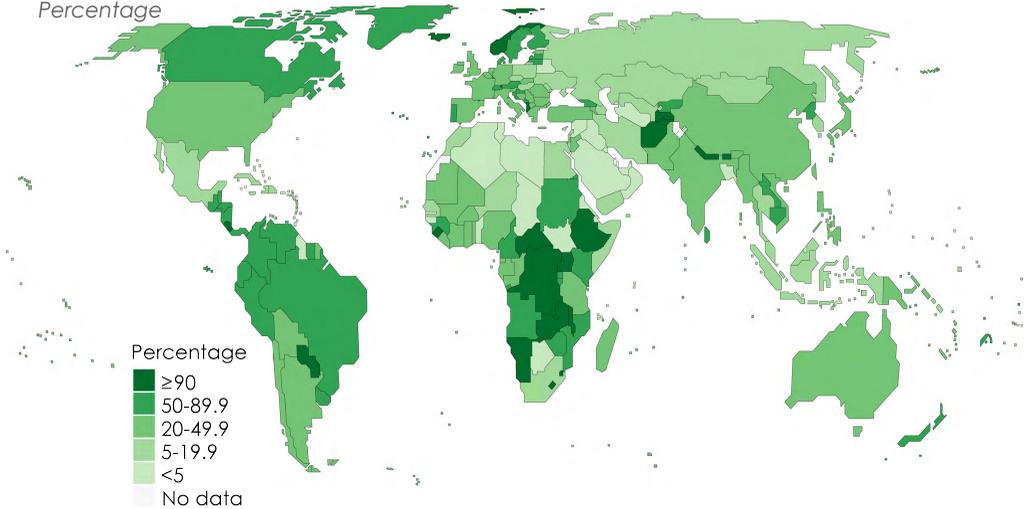
41. Thermal electricity generation by region and source, 2021

Terawatt hours

Region	Coal	Oil	Natural gas	Biofuels and waste	Total
Africa	245.9	66.2	371.1	2.8	686.0
Northern America (excl. US)	34.4	5.0	77.3	10.3	127.0
United States	991.6	36.1	1,634.1	69.4	2,731.1
Latin America and the Caribbean	91.7	140.2	511.1	80.0	823.0
Asia (excl. China)	2,533.4	369.9	2,454.9	167.6	5,525.8
China	5,413.2	9.0	354.3	29.4	5,805.9
Europe	730.1	55.8	1,241.1	244.9	2,271.9
Oceania	144.7	11.8	55.5	4.2	216.2
World	10,185.0	694.0	6,699.5	608.5	18,187.0

42. Renewable electricity share in total electricity generation, 2021

Percentage



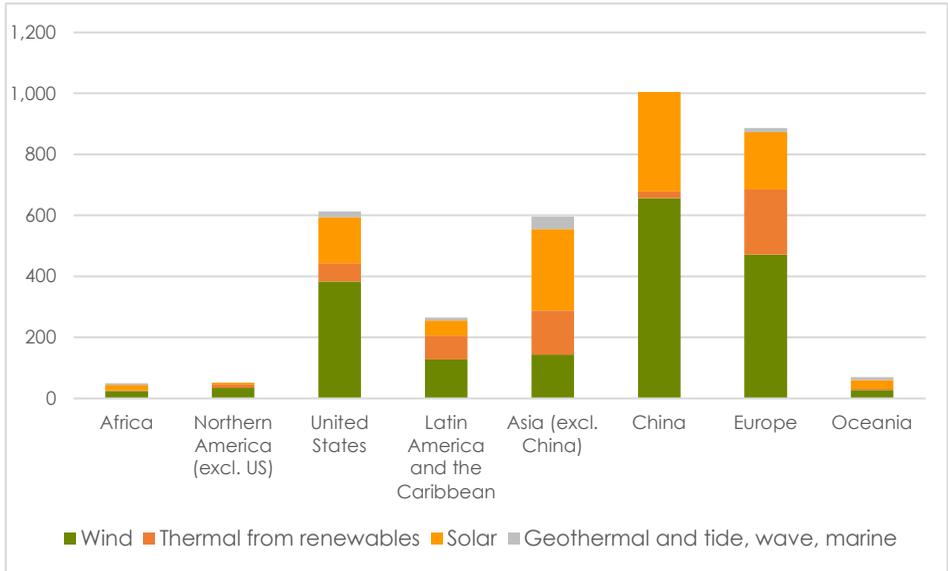
Source: UN Energy Statistics Database / UN Geospatial. The designations employed and the presentation of material on the maps in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, 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 (hydro, wind, total), major countries, 2021 - Terawatt hours

Country	Hydro	Country	Wind	Country	Total renewables
China	1,339.0	China	656.1	China	2,343.1
Canada	382.9	United States	382.8	United States	886.9
Brazil	362.8	Germany	114.6	Brazil	507.6
United States	274.1	India	77.1	Canada	433.8
Russian Fed.	216.1	Brazil	72.3	India	381.3
India	162.4	United Kingdom	64.7	Germany	236.1
Others	1,671.0	Others	497.9	Others	3,150.2
World	4,408.3	World	1,865.5	World	7,939.0

44. Electricity from non-hydro renewable sources by region and type, 2021

Terawatt hours

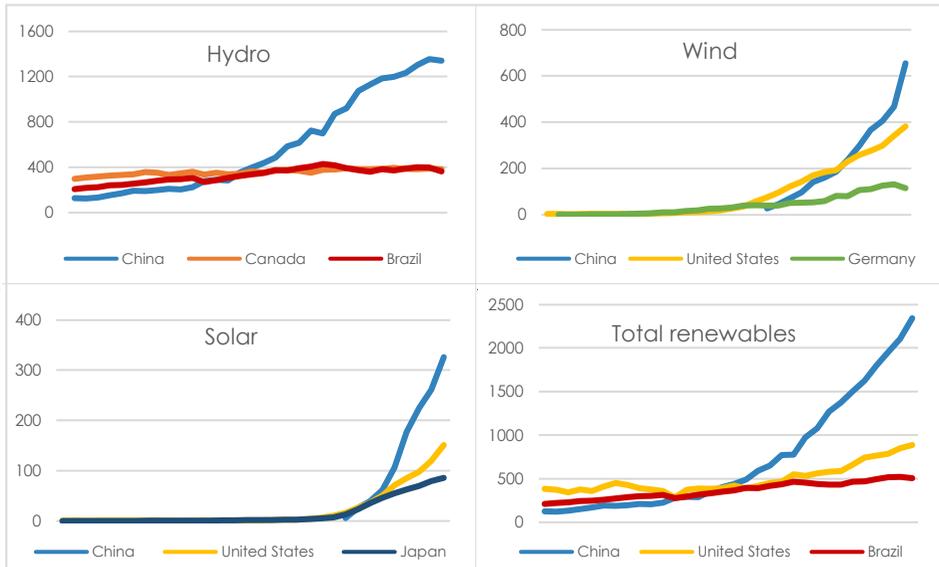
**45. Electricity from non-hydro renewable sources by region and type, 2021**

Terawatt hours

Region	Wind	Thermal (ren.)	Solar	Geoth. & tide	Total
Africa	23.4	2.8	17.4	5.0	48.7
Northern America (excl. US)	34.8	10.1	6.0	0.0	50.9
United States	382.8	59.6	151.3	19.1	612.8
Latin America and the Caribbean	127.0	78.9	49.0	9.2	264.0
Asia (excl. China)	142.6	145.1	267.1	40.8	595.7
China	656.1	22.2	325.8	0.0	1,004.1
Europe	471.7	213.3	187.6	13.3	885.8
Oceania	27.2	4.2	28.3	8.9	68.6
World	1,865.5	536.2	1,032.6	96.3	3,530.6

46. Renewable electricity by type, major countries in 2021, 1990-2021

Terawatt hours



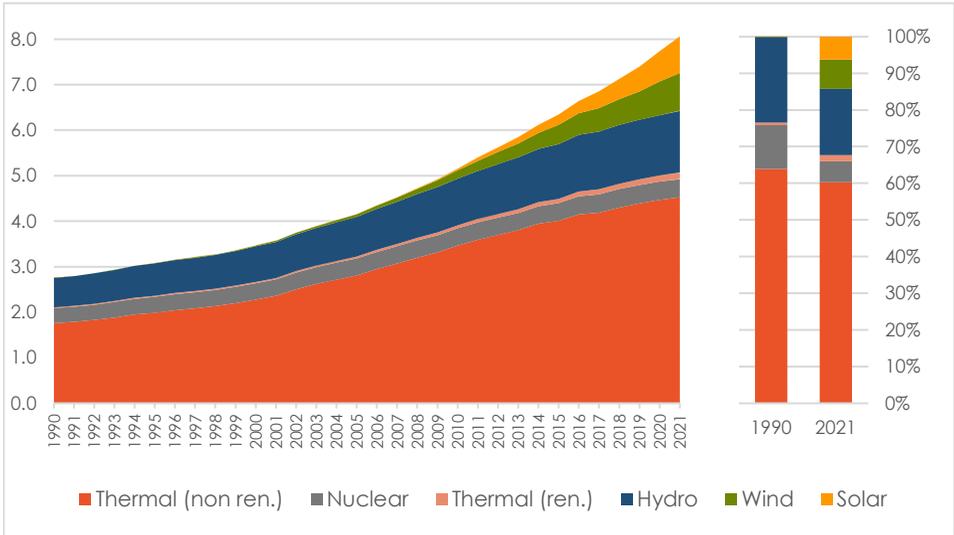
47. Renewable electricity by type, major countries in 2021, 1990 and 2021, and share in total electricity generation, 2021

Gigawatt hours and percentage

Hydro	1990	2021	%2021	Wind	1990	2021	%2021
China	126,720	1,339,000	16%	China	0	656,100	7.7%
Canada	296,848	382,867	60%	US	3,066	382,814	8.8%
Brazil	206,708	362,818	55%	Germany	215 ¹⁹⁹¹	114,647	19.5%
Solar	1990	2021	%2021	Total renewables	1990	2021	%2021
China	0	325,760	3.8%	China	126,720	2,343,082	27.5%
US	666	151,324	3.5%	US	385,049	886,892	20.3%
Japan	67	86,094	8.2%	Brazil	210,567	507,581	77.4%

48. World electricity capacity by type⁵, 1990-2021

Terawatt and percentage


49. World electricity capacity by type⁵, 1990, 2000, 2010, 2020 and 2021

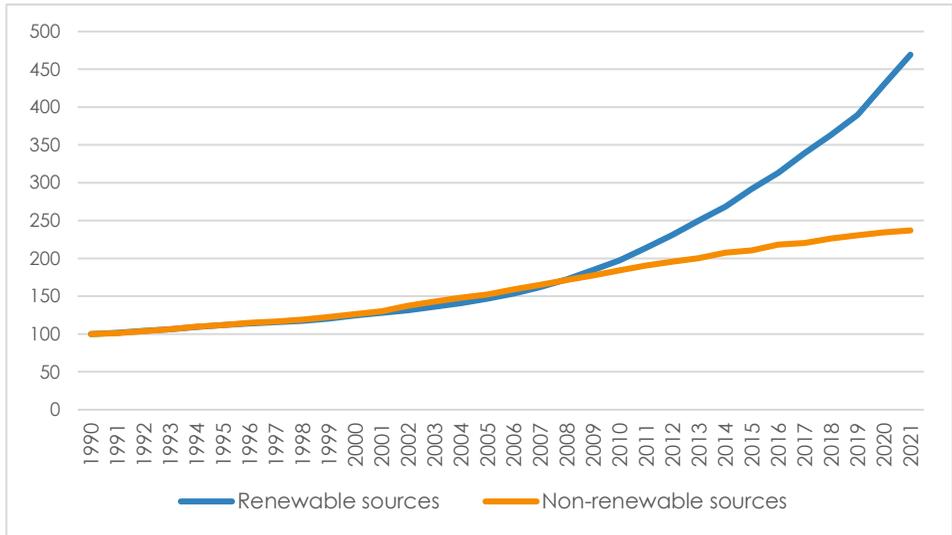
Gigawatt

Type	1990	2000	2010	2020	2021
Non-renewable, of which	2,090.6	2,637.1	3,851.5	4,898.4	4,954.2
- Thermal (non-ren.)	1,760.2	2,278.5	3,461.1	4,469.8	4,525.1
- Nuclear	330.4	358.3	381.8	400.4	400.6
Renewable, of which	671.4	837.9	1,324.8	2,883.2	3,151.9
- Thermal (ren.)	19.0	28.4	66.1	135.5	142.2
- Hydro	643.6	782.6	1,027.0	1,325.9	1,357.3
- Wind	2.4	17.1	180.8	737.3	830.7
- Solar	0.4	1.2	40.6	669.9	806.8
Total	2,762.0	3,475.0	5,176.3	7,781.6	8,106.1

(5) See notes on pages 68-74.

50. World electricity capacity by type, 1990-2021

Index number (1990=100)



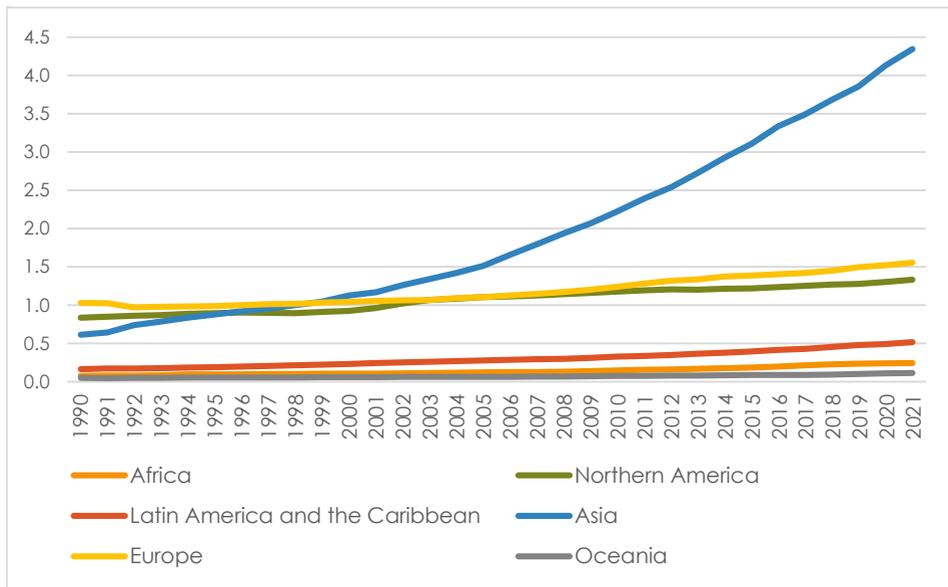
51. World electricity capacity by type⁵, 1990, 2000, 2010, 2020 and 2021, and share in 2021 - Index number (1990=100) and percentage

Type	1990	2000	2010	2020	2021	%2021
Non-renewable, of which	100	126	184	234	237	61.1%
- Thermal (non-ren.)	100	129	197	254	257	55.8%
- Nuclear	100	108	116	121	121	4.9%
Renewable, of which	100	125	197	429	469	38.9%
- Thermal (ren.)	100	150	348	713	749	1.8%
- Hydro	100	122	160	206	211	16.7%
- Wind	100	728	7,679	31,307	35,272	10.2%
- Solar	100	337	11,418	188,173	226,617	10.0%
Total	100	126	187	282	293	100.0%

(5) See notes on pages 68-74.

52. Total electricity capacity by region, 1990-2021

Terawatt

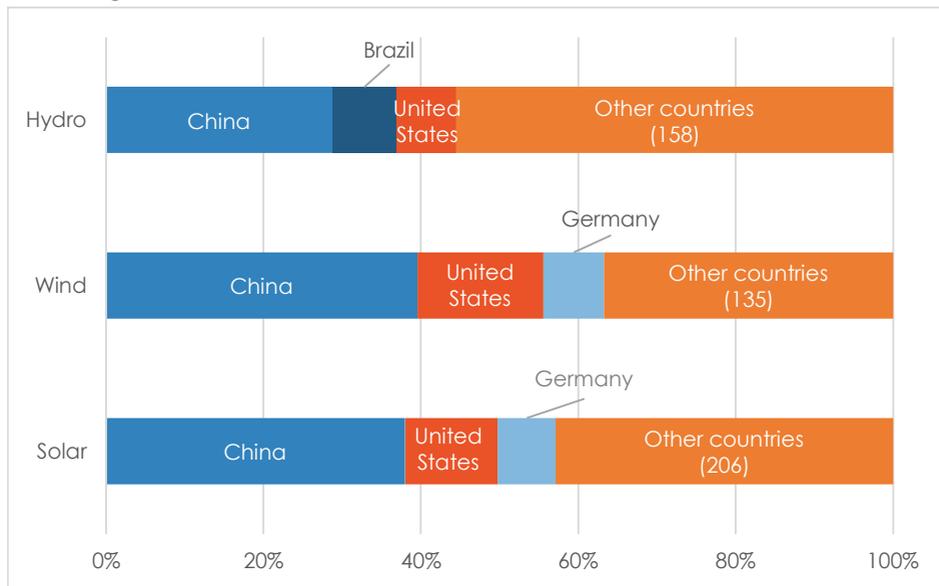
**53. Total electricity capacity by region, 1990, 2000, 2010, 2020 and 2021**

Gigawatt

Region	1990	2000	2010	2020	2021
Africa	74.7	101.5	143.2	239.3	245.5
Northern America	838.1	923.0	1,174.9	1,298.9	1,334.1
Latin America and the Caribbean	162.4	231.1	324.1	488.9	515.1
Asia	613.1	1,123.4	2,222.7	4,127.6	4,346.3
Europe	1,026.6	1,040.2	1,238.4	1,521.2	1,553.3
Oceania	47.0	55.8	73.1	105.8	111.8
World	2,762.0	3,475.0	5,176.3	7,781.6	8,106.1

54. Electricity capacity by type (hydro, wind, solar), major countries, 2021

Percentage



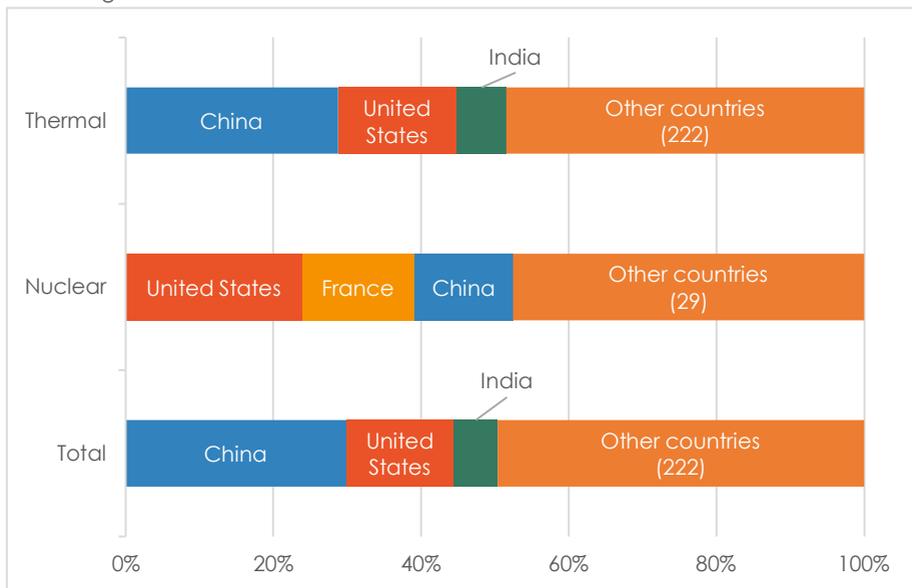
55. Electricity capacity by type (hydro, wind, solar), major countries, 2021

Gigawatt

Country	Hydro	Country	Wind	Country	Solar
China	390.9	China	328.7	China	306.6
Brazil	109.3	United States	132.9	United States	94.8
United States	103.0	Germany	63.8	Germany	59.4
Canada	82.7	India	46.6	India	50.8
Russian Fed.	53.0	Spain	27.9	Australia	25.8
Japan	50.0	United Kingdom	25.7	Italy	22.6
Others	568.4	Others	205.0	Others	246.9
World	1,357.3	World	830.7	World	806.8

56. Electricity capacity by type (thermal, nuclear, total), major countries, 2021

Percentage

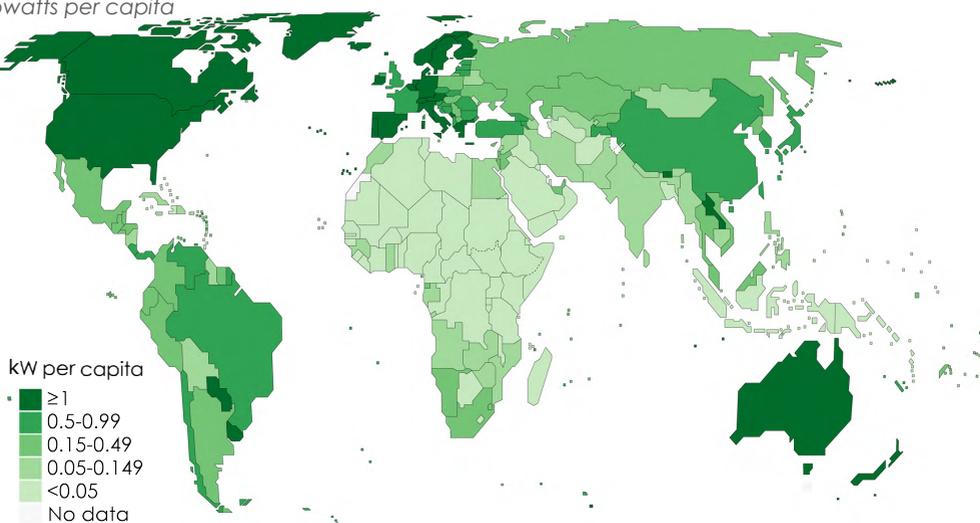
**57. Electricity capacity by type (thermal, nuclear, total), major countries, 2021**

Gigawatt

Country	Thermal	Country	Nuclear	Country	Total
China	1,343.7	United States	95.5	China	2,424.1
United States	750.2	France	61.4	United States	1,180.3
India	312.2	China	53.3	India	478.9
Russian Fed.	217.1	Japan	33.1	Japan	306.5
Japan	195.5	Russian Fed.	30.3	Russian Fed.	302.7
Saudi Arabia	116.6	Rep. of Korea	23.3	Germany	242.1
Others	1,732.1	Others	103.7	Others	3,171.5
World	4,667.3	World	400.6	World	8,106.1

58. Renewable electricity capacity per capita, 2021

Kilowatts per capita



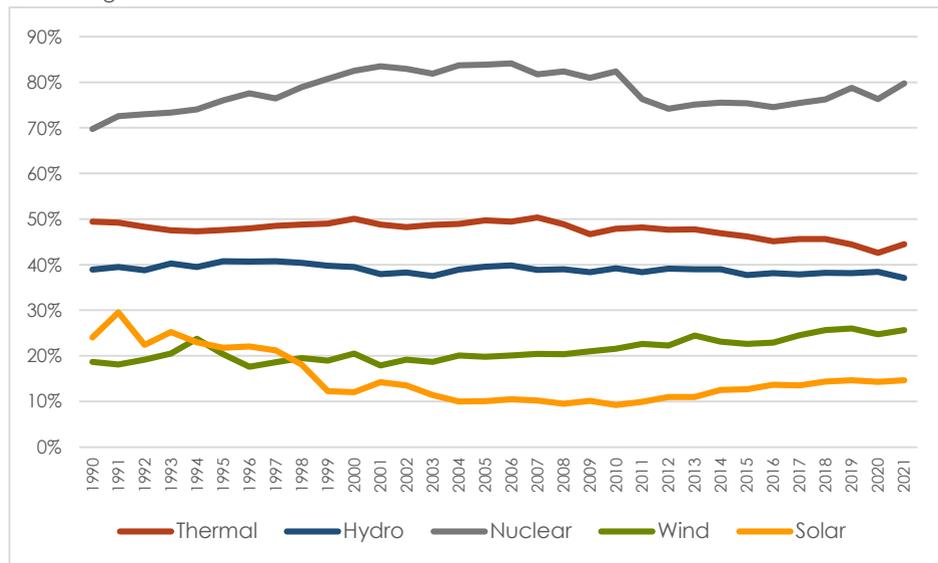
Source: UN Energy Statistics Database / UN Geospatial. The designations employed and the presentation of material on the maps in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, 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).

59. Renewable electricity capacity (total and per capita) and share of total capacity, major countries, 2021 - Gigawatt, kilowatt per capita and percentage

Country	Renewable capacity	Country	REN capacity per capita	Country	% REN in total capacity
China	1,055.9	Iceland	7.76	Paraguay	99.99%
US	344.6	Norway	7.29	Bhutan	99.64%
Brazil	158.9	Sweden	3.31	Lesotho	99.34%
India	154.9	Bhutan	2.99	Dem. Rep. Congo	98.92%
Germany	143.9	Luxembourg	2.82	Eswatini	98.79%
Canada	104.0	Canada	2.73	Norway	97.77%
Japan	80.4	Austria	2.48	Nepal	97.58%
World	3,151.9	World	0.40	World	38.9%

60. Utilization of electricity capacity by type, 1990-2021

Percentage



61. Utilization of electricity capacity by type, 1990, 2000, 2010, 2020 and 2021

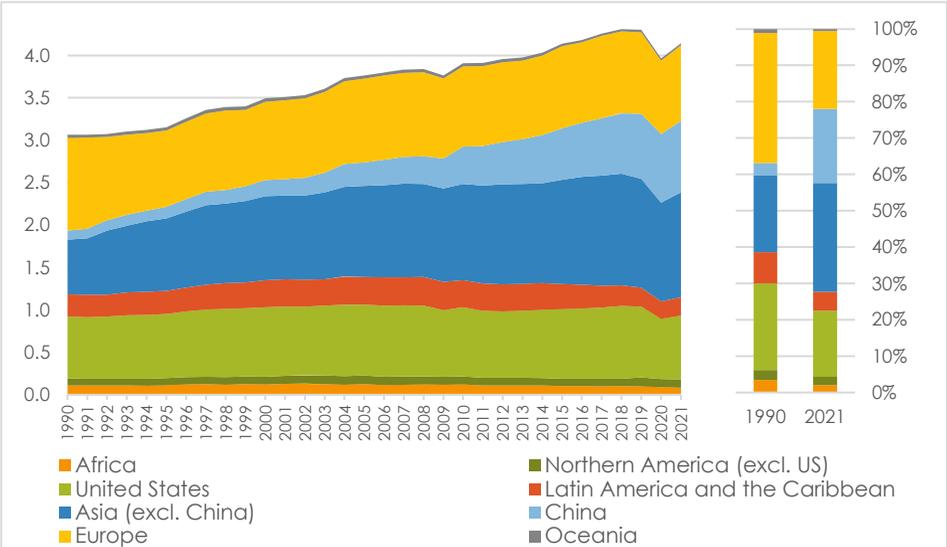
Percentage

Type	1990	2000	2010	2020	2021
Thermal	49%	50%	48%	43%	44%
Hydro	39%	39%	39%	38%	37%
Nuclear	70%	82%	82%	76%	80%
Wind	19%	20%	22%	25%	26%
Solar	24%	12%	9%	14%	15%
Total	49%	51%	48%	39%	40%

Refinery output

62. Total refinery output by region, 1990-2021

Billion metric tons



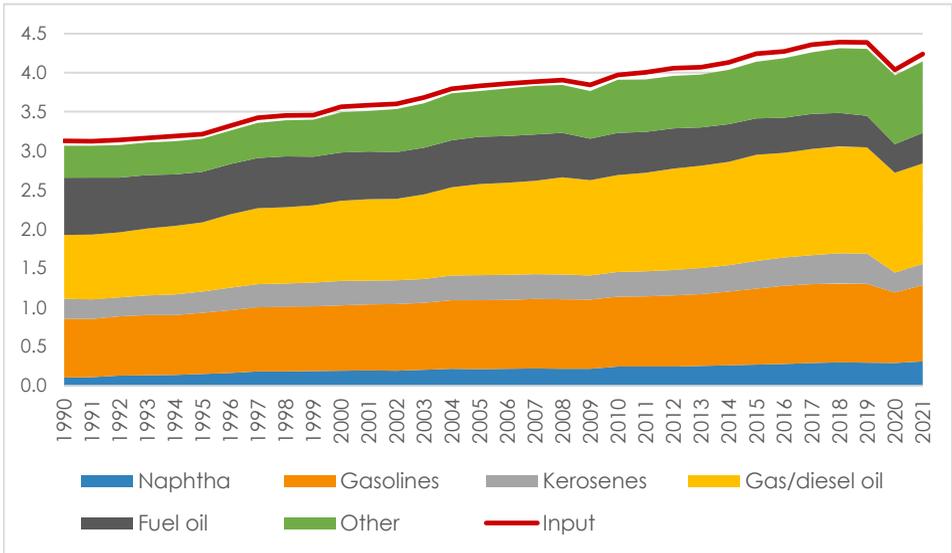
63. Total refinery output by region, 1990, 2000, 2010, 2020 and 2021

Million metric tons

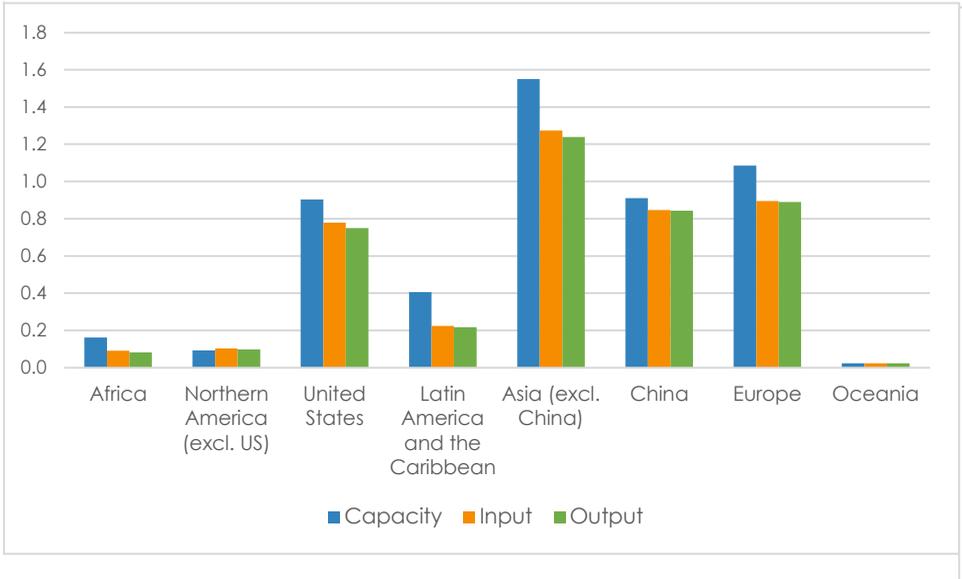
Region	1990	2000	2010	2020	2021
Africa	106.3	118.3	119.6	87.7	82.8
Northern America (excl. US)	84.2	93.7	96.1	95.6	98.4
United States	730.6	817.9	815.8	714.3	749.0
Latin America and the Caribbean	261.8	319.4	318.4	202.9	216.8
Asia (excl. China)	646.6	989.8	1,132.7	1,163.3	1,239.3
China	106.0	191.8	440.5	808.5	842.8
Europe	1,094.3	919.6	947.6	865.1	889.7
Oceania	35.5	41.8	36.8	27.2	23.2
World	3,065.3	3,492.2	3,907.5	3,964.5	4,141.9

64. World total refinery input and refinery output by type of fuel, 1990-2021

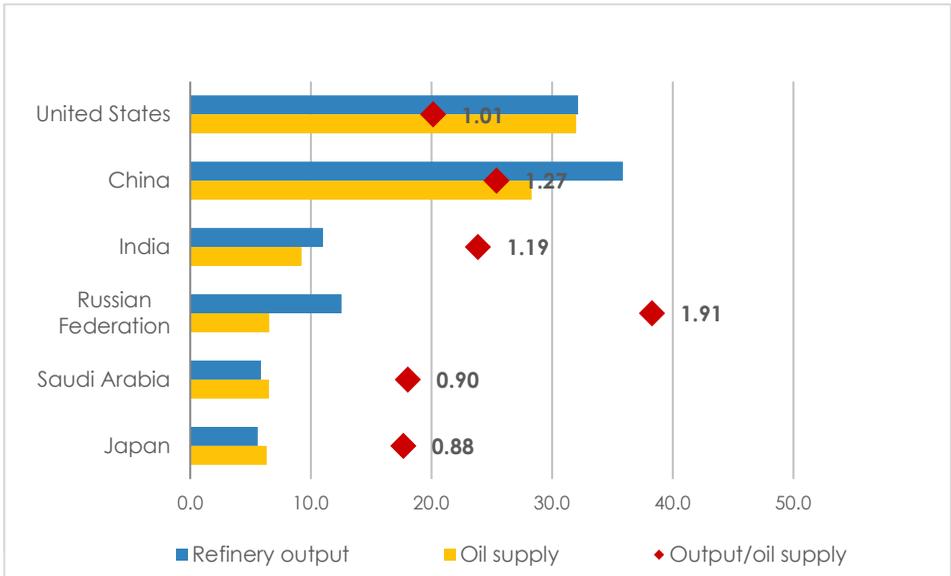
Billion metric tons


65. World total refinery input and refinery output by type of fuel, 1990, 2000, 2010, 2020 and 2021 - Million metric tons

Refinery input and output	1990	2000	2010	2020	2021
Total refinery input	3,125.8	3,563.3	3,967.9	4,036.8	4,235.4
Total refinery output	3,065.3	3,492.2	3,907.5	3,964.5	4,141.9
- Naphtha	105.1	193.0	243.4	291.2	311.4
- Gasolines	749.3	834.1	895.3	897.9	972.2
- Kerosenes	258.2	311.0	316.9	255.6	271.9
- Gas/diesel oil	815.2	1,023.8	1,234.0	1,276.0	1,284.9
- Fuel oil	728.9	616.2	539.7	366.8	391.2
- Other	408.5	514.2	678.1	877.1	910.2

66. Total refinery capacity, input and output by region, 2021*Billion metric tons***67. Total refinery capacity, input and output by region, 2021***Million metric tons*

Region	Capacity	Input	Output
Africa	162.1	90.8	82.8
Northern America (excl. US)	92.1	103.7	98.4
United States	903.1	778.6	749.0
Latin America and the Caribbean	406.1	223.8	216.8
Asia (excl. China)	1,550.1	1,273.0	1,239.3
China	910.0	847.1	842.8
Europe	1,087.9	894.7	889.7
Oceania	23.8	23.8	23.2
World	5,135.3	4,235.4	4,141.9

68. Total refinery output and total oil supply, largest oil supply countries, 2021*Exajoules and ratio between total refinery output and total oil supply***69. Total refinery output and total oil supply⁶, largest oil supply countries, 2021***Exajoules and ratio between total refinery output and total oil supply*

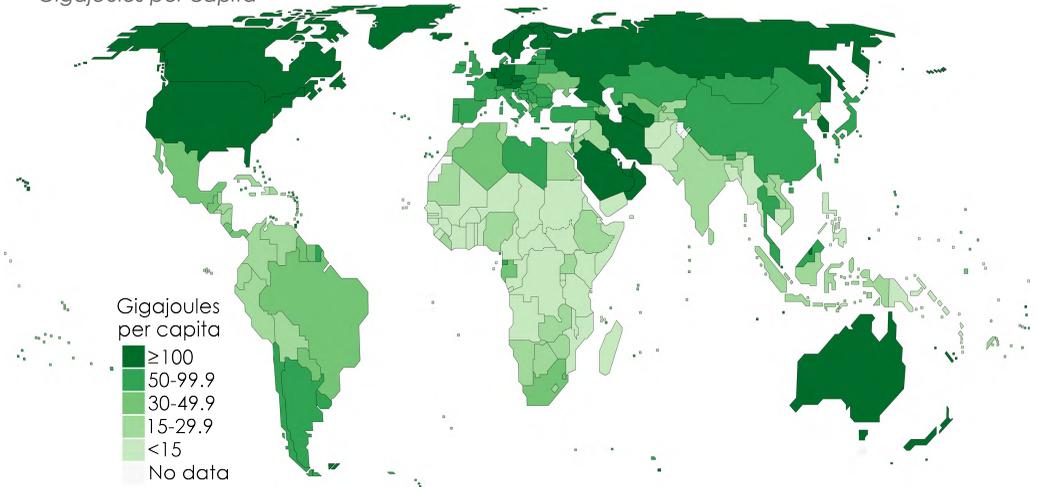
Country	Refinery output	Oil supply ⁶	Output/oil supply
United States	32.2	32.0	1.01
China	35.9	28.3	1.27
India	11.0	9.2	1.19
Russian Federation	12.6	6.6	1.91
Saudi Arabia	5.9	6.5	0.90
Japan	5.6	6.3	0.88
Others	74.7	80.9	0.92
World	177.8	182.8	-

(6) See notes on pages 68-74.

Total final consumption

70. Total final consumption per capita, 2021

Gigajoules per capita



Source: UN Energy Statistics Database / UN Geospatial. The designations employed and the presentation of material on the maps in this publication 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].

FACTS AND FIGURES

World total final consumption⁷ (TFC) amounted to 419.1 EJ in 2021, an increase by 4.6% compared to 2020. The largest growth occurred in Europe (+6.3%) and the Americas (+5.4%), marked by a considerable increment in the United States (+5.7%). Asia consumption rose by 3.7%, led by above-average growth in China (+5.1%), which contributed to over 60% of the region growth in absolute terms.

The transport sector, which suffered the most noticeable decline as a result of the pandemic in 2020, grew overall by 7.6% in 2021; industry and households consumption rose respectively by 3.5% and 3.0%. As in the past, industry and transport were the two leading sectors in 2021, accounting for a combined 55.4% of TFC.

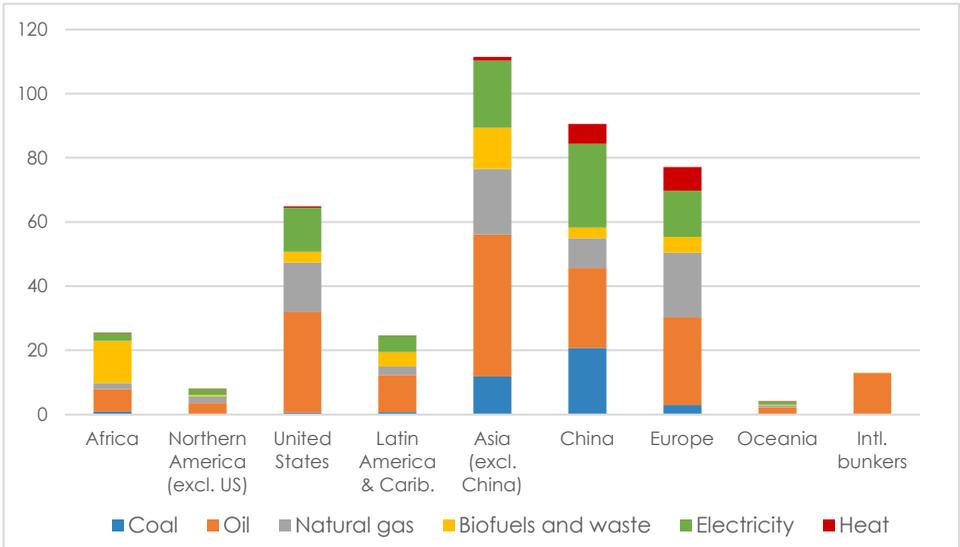
Despite the general rise of TFC in 2021, coal final consumption declined by 6.5% compared to 2020, while both oil and natural gas TFC increased remarkably (+6.1% and +6.6% respectively). The large majority of coal was used in the industry sector (80.1%, or 30.3 EJ), while 58.5% of oil TFC (96.4 EJ) was used for transportation. Most of natural gas was consumed in industry (38.5% or 28.0 EJ) and households (29.1% or 21.2 EJ). The largest share of electricity end use was accounted for by the industry sector (43.3%).

Households were the major users of biofuels and waste, accounting for 56.6% of all TFC of these energy sources, and for 27.5% of household TFC worldwide.

(7) See notes on pages 68-74.

71. Total final consumption by region and source, 2021

Exajoules



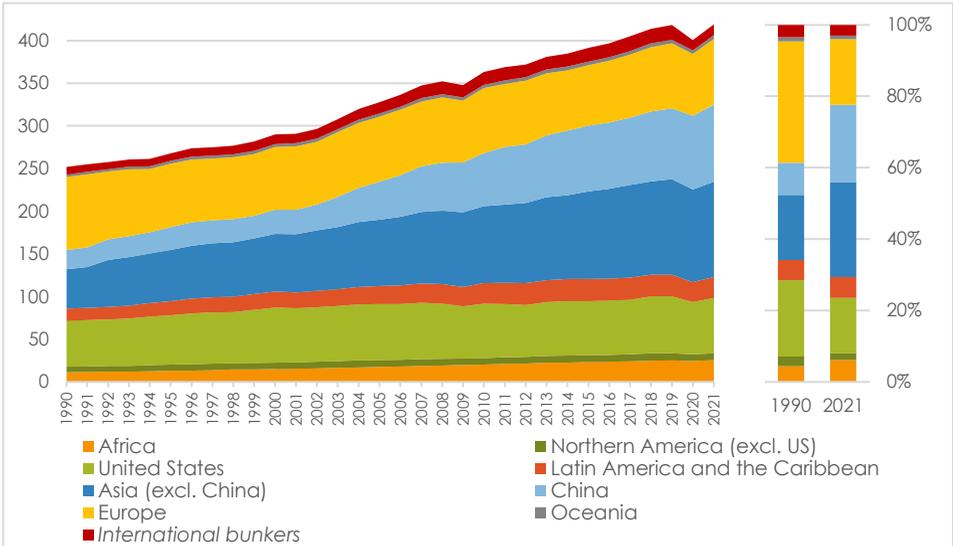
72. Total final consumption by region and source, 2021

Exajoules

Region	Coal	Oil	Natural gas	Biofuels and waste	Electricity	Heat	Total
Africa	0.8	7.1	1.9	13.1	2.5	0.01	25.5
Northern America (excl. US)	0.1	3.5	2.1	0.4	1.9	0.03	8.0
United States	0.6	31.3	15.5	3.3	13.8	0.4	64.9
Latin America and the Caribbean	0.7	11.5	2.6	4.5	5.1	0.1	24.6
Asia (excl. China)	11.8	44.3	20.4	12.9	21.0	1.0	111.4
China	20.7	24.9	9.4	3.3	26.1	6.2	90.6
Europe	3.0	27.3	20.1	4.9	14.4	7.4	77.1
Oceania	0.1	2.1	0.6	0.3	1.0	0.03	4.1
International bunkers	-	12.9	0.02	0.01	-	-	12.9
World	37.9	164.9	72.7	42.7	85.8	15.1	419.1

73. Total final consumption by region, 1990-2021

Exajoules

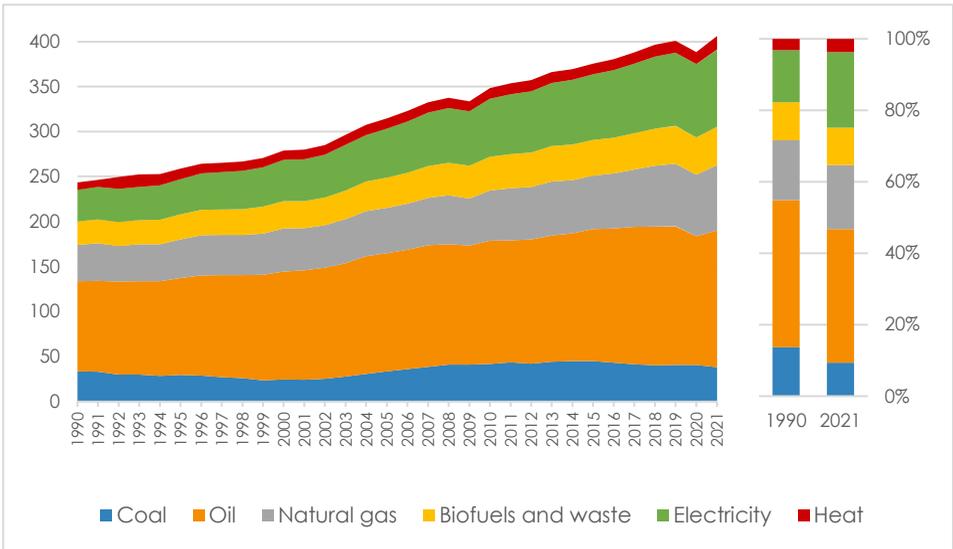

74. Total final consumption by region, 1990, 2000, 2010, 2020 and 2021

Exajoules

Region	1990	2000	2010	2020	2021
Africa	11.1	14.9	20.1	24.4	25.5
Northern America (excl. US)	6.6	7.6	7.7	7.8	8.0
United States	54.0	64.6	63.7	61.4	64.9
Latin America and the Caribbean	14.2	18.7	24.2	23.4	24.6
Asia (excl. China)	46.0	67.7	90.1	108.7	111.4
China	22.6	28.2	62.2	86.2	90.6
Europe	85.8	73.5	76.3	72.5	77.1
Oceania	2.9	3.6	3.9	4.1	4.1
International bunkers	8.8	11.2	15.0	12.3	12.9
World	251.9	290.0	363.2	400.6	419.1

75. World total final consumption by source, 1990-2021

Exajoules



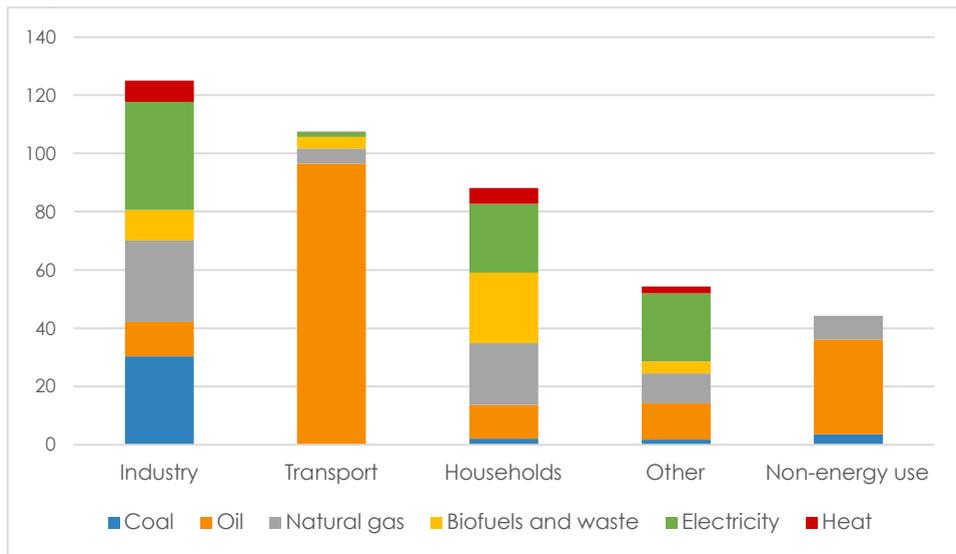
76. World total final consumption by source, 1990, 2000, 2010, 2020 and 2021

Exajoules

Source	1990	2000	2010	2020	2021
Coal	33.3	24.4	41.7	40.5	37.9
Oil	108.8	131.2	151.8	155.4	164.9
Natural gas	40.7	47.9	56.0	68.2	72.7
Biofuels and waste	26.0	30.3	37.5	41.7	42.7
Electricity	35.3	45.7	64.4	81.3	85.8
Heat	7.8	10.5	11.9	13.4	15.1
Total	251.9	290.0	363.2	400.6	419.1

77. World total final consumption by sector and source, 2021

Exajoules



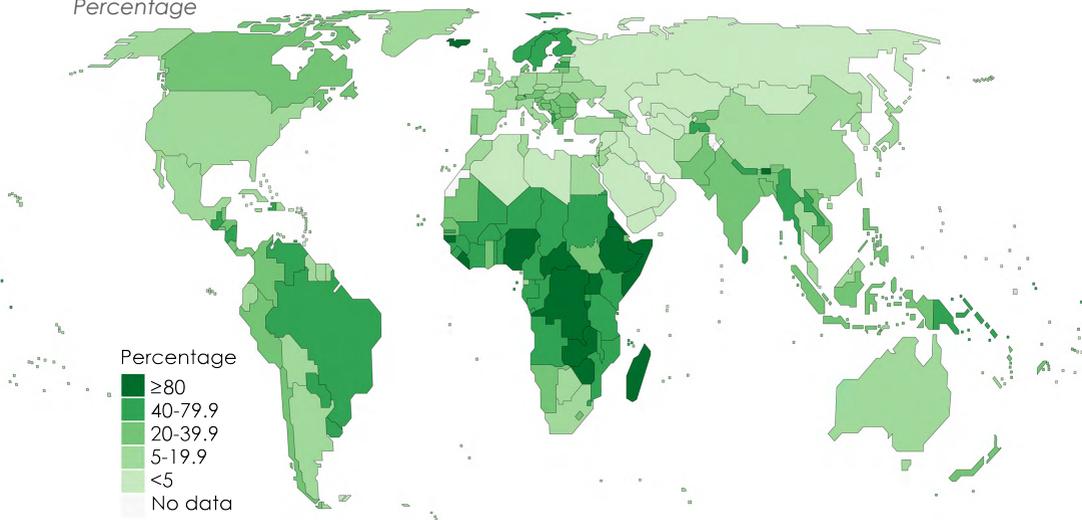
78. World total final consumption by sector and source, 2021

Exajoules

Sector	Coal	Oil	Natural gas	Biofuels and waste	Electricity	Heat	Total
Total final consumption	37.9	164.9	72.7	42.7	85.8	15.1	419.1
- Total energy consumption	34.2	132.4	64.6	42.7	85.8	15.1	374.8
- Industry	30.3	11.9	28.0	10.4	37.1	7.3	125.0
- Transport	0.1	96.4	5.2	4.0	1.6	0.04	107.4
- of which intl. bunkers	-	12.9	0.02	0.01	-	-	12.9
- Households	2.1	11.6	21.2	24.2	23.6	5.4	88.1
- Other	1.7	12.5	10.3	4.1	23.4	2.3	54.4
- Non-energy use	3.7	32.5	8.1	-	-	-	44.3

79. Renewable energy share in total final energy consumption (TFEC), 2021

Percentage



Source: UN Energy Statistics Database / UN Geospatial. The designations employed and the presentation of material on the maps in this publication 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).

80. Final consumption (total⁸ and per capita) and renewable energy share in TFEC, major countries, 2021

Exajoules, gigajoules per capita and percentage

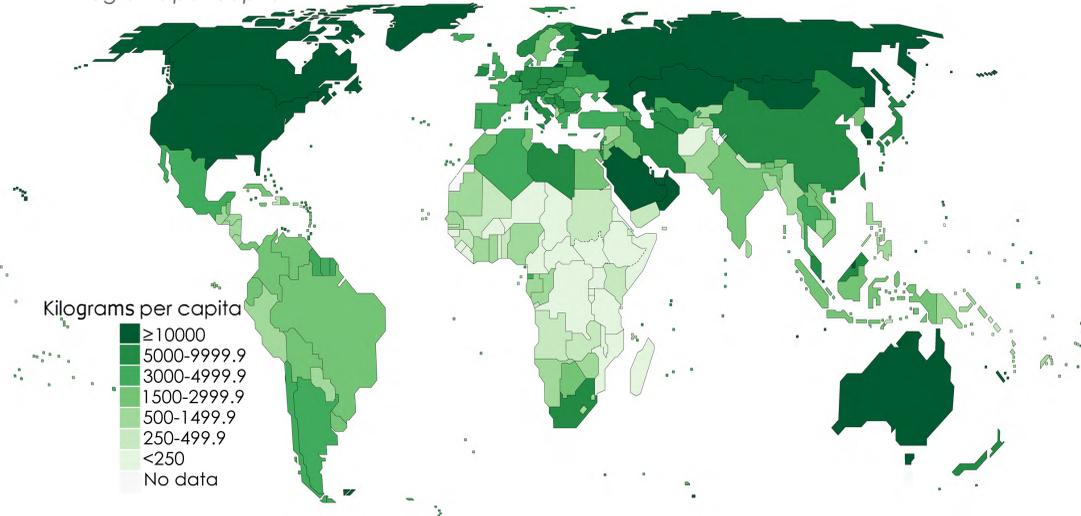
Country	TFC ⁸	Country	TFC per capita	Country	% REN in TFEC
China	90.6	Iceland	354.0	Dem. Rep. Congo	95.6%
United States	64.9	Qatar	340.0	Somalia	95.4%
India	28.1	Trinidad and Tobago	320.4	Liberia	93.2%
Russian Fed.	23.3	Gibraltar	282.7	Uganda	91.0%
Japan	11.2	United Arab Emirates	255.3	Central African Rep.	90.9%
Brazil	10.3	Luxembourg	231.2	Ethiopia	90.7%
Germany	9.5	Oman	221.0	Guinea-Bissau	87.4%
Others	168.4	Others	51.2	Others	17.8%
World	419.1	World	51.4	World	18.6%

(8) See notes on pages 68-74.

CO₂ emissions from fossil fuel combustion

81. CO₂ emissions from fossil fuel combustion per capita, 2021

Kilograms per capita



Source: UN Energy Statistics Database / UN Geospatial. The designations employed and the presentation of material on the maps in this publication 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).

FACTS AND FIGURES

CO₂ emissions from fossil fuel combustion reached 34.1 Gigatons worldwide in 2021, an increase of 6.1% compared to 2020, but on par with the 2019 pre-pandemic emissions (0.04% decrease in the biennium). China was responsible for 30.6% of the 2021 emissions, while the United States accounted for 13.5%, and five countries (adding India, Russian Federation and Japan) represented 59.4% of the total emissions.

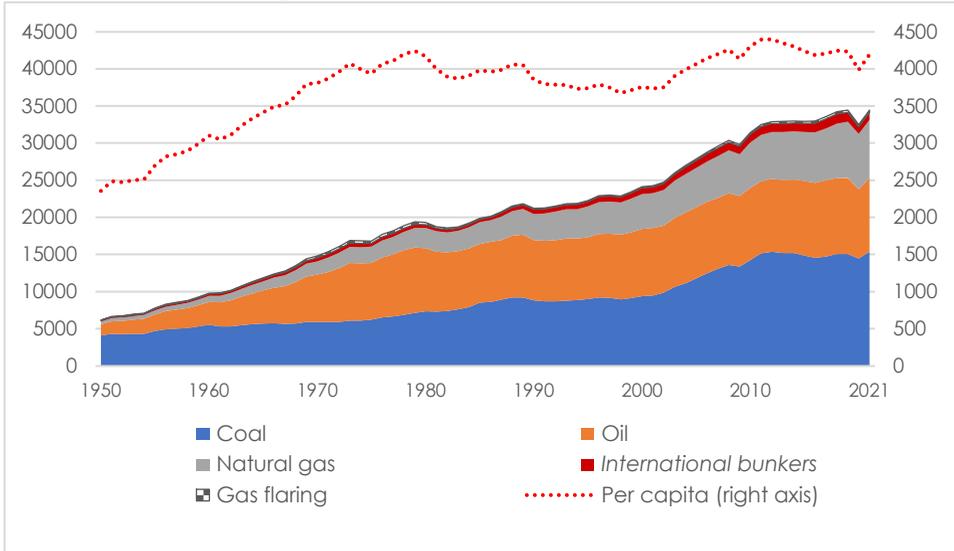
Taking a longer perspective, the increase since 1990 amounts to 61.7% (1.56% yearly compounded growth), and the emissions from fossil fuel combustion are 5.6 times higher than they were in 1950 (2.46% yearly compounded growth).

Coal dominated the emissions in 2021 with 45.1%, followed by oil (31.9%) and natural gas (23.1%). While the natural gas share has been increasing since 1950 when it amounted to less than 6% of the total, the oil share peaked in 1973 when it broke slightly above 50%, the same year that coal share of emissions troughed at 36.7%. In 1950, more than two-thirds of emissions came from coal.

Emissions reached 4,313 kg of CO₂ per inhabitant in 2021, down from a peak of 4,556 kg in 2011, but still 8.7% above the per capita emissions in 1990 and 79.2% above those in 1950.

82. CO₂ emissions from fossil fuel combustion, by fuel and per capita, 1950-2021

Million metric tons and kilograms per capita

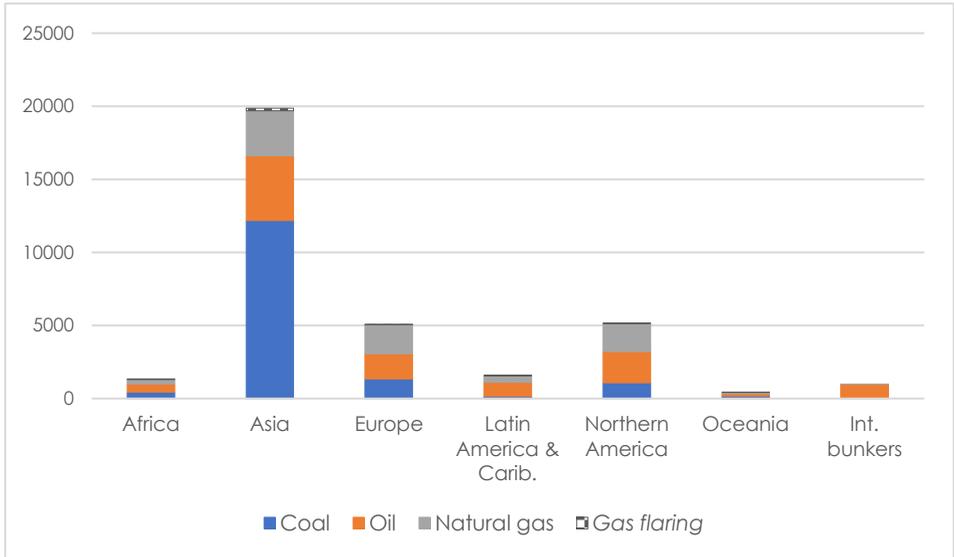

83. CO₂ emissions from fossil fuel combustion⁹ (total, per capita and per unit of GDP PPP), major countries, 2021

Million metric tons, kilograms per capita and tons per million international \$

Country	CO ₂ emissions	Country	CO ₂ per capita	Country	CO ₂ / GDP
China	10,424.7	Qatar	29,610.2	Mongolia	1,101.5
United States	4,596.8	Brunei Darussalam	24,086.1	New Caledonia	868.9
India	2,441.6	Bahrain	22,073.8	Palau	846.9
Russian Federation	1,811.2	United Arab Emirates	20,811.9	Syrian Arab Rep.	675.0
Japan	1,005.1	Kuwait	20,114.6	Turkmenistan	659.3
Iran (Islamic Rep. of)	652.4	Gibraltar	19,914.6	Curaçao	640.2
Indonesia	624.1	Sint Maarten (Dutch part)	15,906.5	Lesotho	629.7
Republic of Korea	602.4	Faroe Islands	15,311.9	Marshall Islands	595.5
World	34,111.9	World	4,312.9	World	253.1

84. CO₂ emissions from fossil fuel combustion, by region and source, 2021

Million metric tons

**85. CO₂ emissions from fossil fuel combustion by region and source, 2021**

Million metric tons

Region	Coal	Oil	Natural gas	Total	Gas flaring
Africa	438.0	554.9	305.9	1,298.8	46.2
Asia	12,176.4	4,419.0	3,096.6	19,692.1	172.6
Europe	1,353.3	1,700.5	1,989.4	5,043.2	52.5
Latin America and the Caribbean	155.2	939.1	463.7	1,558.0	23.0
Northern America	1,071.7	2,140.9	1,927.1	5,139.7	19.1
Oceania	173.6	150.9	90.7	415.2	5.4
International bunkers	-	963.9	0.9	964.8	-
World	15,368.3	10,869.2	7,874.4	34,111.9	318.8

Energy balance, 2021 (Exajoules)

World	Primary coal	Coal products	Primary oil	Oil products
Primary production	167.0	-	179.7	-
Imports	32.8	0.9	91.8	58.5
Exports	-34.1	-0.9	-90.7	-58.9
Stock changes	-0.4	0.2	2.4	0.1
Total energy supply	165.2	0.2	183.1	-0.3
Statistical difference	2.7	0.2	-0.3	-0.1
Transfers	0.0	0.0	9.7	-4.0
Transformation	-133.2	13.2	-191.5	177.5
Electricity plants	-91.8	-2.3	-1.3	-5.7
CHP and heat plants	-16.3	-0.8	-0.02	-1.1
Coke ovens	-21.5	23.3	0.0	-0.1
Oil refineries	0.0	0.0	-179.9	177.8
Other transformation	-3.7	-7.0	-10.3	6.6
Energy industries own use	-3.2	-1.4	-0.4	-9.2
Losses	-0.02	-0.1	-0.3	-0.01
Final consumption	26.1	11.8	0.9	164.0
Final energy consumption	23.2	11.0	0.1	132.3
Industry	19.6	10.7	0.1	11.7
Iron and steel	4.1	7.9	0.0	0.3
Chemical and petrochemical	0.6	0.9	0.1	2.8
Non-ferrous metals	0.2	0.04	0 ⁺	0.3
Non-metallic minerals	2.0	0.1	0 ⁺	1.6
Other industries	12.7	1.8	0.04	6.9
Transport ¹⁰	0.1	0 ⁺	0 ⁺	96.4
of which Road	0.0	0.0	0.0	74.3
of which Aviation	0.0	0.0	0.0	9.5
Households	1.9	0.2	0.0	11.6
Commerce, public services	0.3	0.04	0.0	2.4
Other energy use	1.4	0.02	0 ⁺	10.1
Non-energy use	2.9	0.8	0.8	31.7

(10) - (11) See notes on pages 68-74.

2024 Energy Statistics Pocketbook

Natural gas	Biofuels and waste	Nuclear	Electricity	Heat	Total	of which: renewables ¹¹
148.6	54.2	30.3	25.9	4.3	609.9	82.4
43.3	1.6	-	2.9	0 ⁺	231.8	1.6
-44.6	-1.0	-	-2.8	0 ⁻	-233.1	-1.0
1.1	0.1	-	0.0	0.0	3.5	0.1
148.5	54.9	30.3	26.0	4.3	612.1	83.0
1.5	-0.04	0.0	0.1	-0.01	4.1	26.3
0.0	-0.2	-	0.0	0.0	5.4	-0.2
-60.0	-11.4	-30.3	76.0	13.8	-145.8	-13.3
-41.1	-4.3	-30.2	68.3	-4.8	-113.3	-6.7
-16.2	-3.9	-0.03	7.8	18.6	-11.8	-3.4
0 ⁻	-0.01	-	0.0	0.0	1.8	0.0
-0.2	0.0	-	0.0	0.0	-2.3	0.0
-2.5	-3.3	-	0.0	0.0	-20.2	-3.3
-12.7	-0.5	-	-8.7	-1.9	-38.0	-0.5
-1.6	-0.01	-	-7.4	-1.1	-10.5	-0.01
72.7	42.7	-	85.8	15.1	419.1	42.7
64.6	42.7	-	85.8	15.1	374.8	42.7
28.0	10.4	-	37.1	7.3	125.0	9.9
2.6	0.2	-	4.7	0.5	20.4	0.2
6.6	0.2	-	4.6	3.5	19.1	0.1
0.6	0.01	-	1.7	0.03	2.8	0.01
2.1	0.5	-	0.9	0.1	7.3	0.2
16.0	9.5	-	25.2	3.1	75.3	9.4
5.2	4.0	-	1.6	0.04	107.4	4.0
2.5	4.0	-	0.2	0.0	81.0	4.0
0.0	0.0	-	0.0	0.0	9.5	0.0
21.2	24.2	-	23.6	5.4	88.1	24.6
7.9	1.5	-	15.4	1.8	29.3	1.6
2.4	2.6	-	8.0	0.6	25.0	2.6
8.1	-	-	-	-	44.3	0.0

Energy balance, 2021 (Petajoules)

Africa	Primary coal	Coal products	Primary oil	Oil products
Primary production	5,967.8	-	14,586.1	-
Imports	524.2	30.4	988.0	5,424.7
Exports	-1,815.5	-25.1	-10,907.9	-1,503.0
International bunkers	-	-	0.0	-447.8
Stock changes	-14.1	-0.3	-65.5	33.2
Total energy supply	4,662.4	5.0	4,600.8	3,507.0
Statistical difference	-200.3	0.0	132.8	141.2
Transfers	0.0	0.0	-136.5	173.2
Transformation	-3,432.8	72.0	-4,286.3	3,626.7
Electricity plants	-3,051.1	0.0	-33.9	-535.6
CHP and heat plants	-0.2	0.0	0.0	0.0
Coke ovens	-98.6	86.6	0.0	0.0
Oil refineries	0.0	0.0	-3,848.4	3,546.5
Other transformation	-282.8	-14.6	-404.0	615.8
Energy industries own use	-658.0	-1.8	-33.3	-84.2
Losses	0.0	-2.8	-11.9	-6.2
Final consumption	771.8	72.5	0.1	7,075.3
Final energy consumption	733.9	72.5	0.1	6,711.0
Industry	578.2	72.3	0.0	633.0
Iron and steel	71.8	57.4	0.0	3.4
Chemical and petrochemical	37.9	4.3	0.0	4.0
Non-ferrous metals	45.4	1.4	0.0	3.9
Non-metallic minerals	243.9	0.1	0.0	94.3
Other industries	179.2	9.0	0.0	527.4
Transport	0.2	0.0	0.1	5,048.4
of which Road	0.0	0.0	0.0	4,885.0
Households	96.7	0.01	0.0	632.2
Commerce, public services	46.4	0.04	0.0	100.6
Other energy use	12.5	0.1	0.0	296.8
Non-energy use	37.9	0.0	0.0	364.3

(11) See notes on pages 68-74.

2024 Energy Statistics Pocketbook

Natural gas	Biofuels and waste	Nuclear	Electricity	Heat	Total	of which: renewables ¹¹
9,058.6	15,434.9	133.4	680.2	227.9	46,089.1	16,335.6
489.8	119.4	-	138.7	0.0	7,715.2	119.4
-3,641.4	-13.5	-	-135.0	0.0	-18,041.4	-13.5
0.0	0.0	-	-	-	-447.8	0.0
-2.1	-0.01	-	0.0	0.0	-48.8	-0.01
5,904.9	15,540.8	133.4	683.9	227.9	35,266.2	16,441.4
166.4	1.3	0.0	9.6	0	251.0	710.2
0.0	0.0	-	0.0	0.0	36.7	0.0
-3,171.9	-2,432.9	-133.4	2,548.5	-216.7	-7,427.0	-2,616.5
-3,076.6	-51.0	-133.4	2,543.9	-216.7	-4,554.4	-234.6
-2.6	-5.1	0.0	4.5	0.0	-3.5	-5.1
0.0	0.0	-	0.0	0.0	-12.1	0.0
0.0	0.0	-	0.0	0.0	-301.9	0.0
-92.6	-2,376.9	-	0.0	0.0	-2,555.2	-2,376.8
-609.0	-0.2	-	-252.4	0.0	-1,638.9	-0.2
-30.9	-0.03	-	-464.3	0.0	-516.1	-0.03
1,926.8	13,106.3	-	2,506.0	11.2	25,470.0	13,114.4
1,474.6	13,106.3	-	2,506.0	11.2	24,615.6	13,114.4
862.5	581.1	-	934.7	0 ⁺	3,661.9	578.0
129.1	0.0	-	92.6	0.0	354.3	0.0
87.3	0.5	-	46.3	0.0	180.3	0.2
1.5	0 ⁺	-	114.2	0.0	166.5	0 ⁺
173.6	7.1	-	44.9	0.0	563.9	4.4
471.1	573.5	-	636.6	0 ⁺	2,396.9	573.4
61.7	2.6	-	19.5	0.0	5,132.4	2.6
20.8	2.6	-	0.2	0.0	4,908.6	2.6
497.2	11,407.9	-	926.9	4.9	13,565.7	11,412.9
20.9	689.8	-	459.6	0.9	1,318.2	690.7
32.2	424.9	-	165.4	5.4	937.4	430.3
452.3	-	-	-	-	854.4	0.0

Energy balance, 2021 (Petajoules)

Northern America	Primary coal	Coal products	Primary oil	Oil products
Primary production	12,794.6	-	42,094.8	-
Imports	279.3	36.9	14,715.6	5,243.1
Exports	-2,852.9	-57.1	-15,130.5	-10,399.1
International bunkers	-	-	0.0	-1,664.2
Stock changes	890.5	2.8	786.6	350.4
Total energy supply	11,111.5	-17.5	42,466.4	-6,469.7
Statistical difference	-112.6	8.9	-720.5	-1,075.8
Transfers	0.0	0.0	224.2	-157.6
Transformation	-10,774.9	284.5	-42,959.7	41,604.3
Electricity plants	-9,968.6	-2.4	0.0	-326.5
CHP and heat plants	-195.7	-22.1	0.0	-102.2
Coke ovens	-501.6	462.0	0.0	0.0
Oil refineries	0.0	0.0	-37,899.7	36,374.1
Other transformation	-108.9	-153.0	-5,060.0	5,658.9
Energy industries own use	-0.02	-47.2	0.0	-1,702.5
Losses	0.0	0.0	0.0	-0.1
Final consumption	449.1	211.0	451.4	34,350.2
Final energy consumption	445.7	210.2	0.0	28,359.5
Industry	431.1	210.2	0.0	1,090.4
Iron and steel	12.5	176.3	0.0	10.7
Chemical and petrochemical	64.1	0.0	0.0	87.5
Non-ferrous metals	9.1	0.4	0.0	8.2
Non-metallic minerals	180.8	0.0	0.0	59.7
Other industries	164.6	33.5	0.0	924.4
Transport	0.0	0.0	0.0	25,348.3
of which Road	0.0	0.0	0.0	22,373.1
Households	0.0	0.0	0.0	664.4
Commerce, public services	14.1	0.0	0.0	570.1
Other energy use	0.5	0.0	0.0	686.3
Non-energy use	3.4	0.8	451.4	5,990.7

(11) See notes on pages 68-74.

2024 Energy Statistics Pocketbook

Natural gas	Biofuels and waste	Nuclear	Electricity	Heat	Total	of which: renewables ¹¹
40,747.3	4,751.6	9,765.1	4,350.4	859.7	115,363.4	9,779.1
3,674.2	133.1	-	238.3	0.0	24,320.5	133.1
-9,489.9	-201.8	-	-267.3	0.0	-38,398.7	-201.8
0.0	-4.6	-	-	-	-1,668.8	-4.6
228.5	5.9	-	0.0	0.0	2,264.8	5.9
35,160.1	4,684.2	9,765.1	4,321.3	859.7	101,881.1	9,711.7
236.8	61.7	0.0	-7.5	0 ⁺	-1,608.9	4,492.2
0.0	0.0	-	0.0	0.0	66.6	0.0
-12,707.4	-871.1	-9,765.1	13,642.3	-266.3	-21,813.3	-1,359.5
-10,747.0	-588.0	-9,765.1	12,549.5	-721.0	-19,569.2	-1,103.4
-1,705.2	-261.5	0.0	1,092.7	454.7	-739.3	-234.6
0.0	0.0	-	0.0	0.0	-39.6	0.0
0.0	0.0	-	0.0	0.0	-1,525.6	0.0
-255.1	-21.6	-	0.0	0.0	60.3	-21.6
-4,273.3	-2.5	-	-1,267.5	-143.5	-7,436.5	-2.5
-335.6	0.0	-	-994.0	-52.2	-1,381.9	0.0
17,607.0	3,748.9	-	15,709.6	397.6	72,924.9	3,857.5
16,798.8	3,748.9	-	15,709.6	397.6	65,670.3	3,857.5
6,354.7	1,588.4	-	3,685.0	207.6	13,567.5	1,564.0
331.1	0.1	-	234.2	6.9	771.9	0.1
2,326.9	11.8	-	489.6	125.4	3,105.2	3.4
193.5	0.9	-	369.4	3.6	585.1	0.9
415.7	31.4	-	167.3	0.1	855.0	24.5
3,087.5	1,544.2	-	2,424.5	71.6	8,250.3	1,535.0
1,322.8	1,438.4	-	74.7	0.0	28,184.2	1,438.4
55.7	1,412.2	-	30.8	0.0	23,871.7	1,412.2
5,209.7	582.3	-	5,999.8	63.0	12,519.2	644.8
3,808.9	75.9	-	5,271.6	124.5	9,865.0	144.6
102.6	63.9	-	678.4	2.6	1,534.4	65.7
808.2	-	-	-	-	7,254.6	0.0

Energy balance, 2021 (Petajoules)

Latin America and the Caribbean	Primary coal	Coal products	Primary oil	Oil products
Primary production	1,858.8	-	17,058.8	-
Imports	1,198.2	88.0	1,118.1	6,487.3
Exports	-1,601.0	-82.8	-8,455.0	-1,744.8
International bunkers	-	-	0.0	-723.4
Stock changes	180.8	-3.5	241.9	-10.1
Total energy supply	1,636.9	1.6	9,963.7	4,009.0
Statistical difference	-61.5	5.1	42.7	220.1
Transfers	0.0	0.0	203.9	-127.0
Transformation	-1,386.0	476.6	-10,112.9	8,471.8
Electricity plants	-928.1	-9.1	-27.6	-1,279.8
CHP and heat plants	-9.8	-16.8	0.0	-48.9
Coke ovens	-448.1	525.5	0.0	-49.5
Oil refineries	0.0	0.0	-9,596.2	9,252.7
Other transformation	0.0	-22.9	-489.2	597.3
Energy industries own use	0.0	-50.4	-11.2	-586.0
Losses	-2.5	-3.0	-0.1	-1.3
Final consumption	309.8	419.8	0.7	11,546.4
Final energy consumption	309.8	418.0	0.7	10,645.2
Industry	307.4	415.2	0.4	1,238.2
Iron and steel	105.4	396.8	0.0	14.7
Chemical and petrochemical	10.5	0.01	0.0	131.0
Non-ferrous metals	31.6	13.4	0.0	53.1
Non-metallic minerals	58.3	2.3	0.0	292.1
Other industries	101.6	2.6	0.4	747.2
Transport	0.0	0.0	0.4	7,587.6
of which Road	0.0	0.0	0.0	7,250.8
Households	2.4	1.9	0.0	918.8
Commerce, public services	0 ⁺	0.01	0.0	215.0
Other energy use	0.03	0.9	0.0	685.7
Non-energy use	0 ⁺	1.7	0.0	901.2

(11) See notes on pages 68-74.

2024 Energy Statistics Pocketbook

Natural gas	Biofuels and waste	Nuclear	Electricity	Heat	Total	of which: renewables ¹¹
6,648.3	6,545.2	404.5	3,162.4	395.5	36,073.5	10,090.1
2,993.4	21.2	-	135.6	0.0	12,041.8	21.2
-957.2	-97.7	-	-124.9	0.0	-13,063.5	-97.7
-2.0	0.0	-	-	-	-725.4	0.0
21.4	41.1	-	0.0	0.0	471.6	41.1
8,703.9	6,509.8	404.5	3,173.1	395.5	34,798.0	10,054.8
369.9	-14.9	0.0	117.4	0.0	678.8	3,181.1
0.0	-233.8	-	0.0	0.0	-156.9	-233.8
-4,215.5	-1,272.3	-404.5	3,139.9	-334.8	-5,637.8	-1,561.2
-3,656.8	-832.8	-404.5	2,731.4	-334.8	-4,742.2	-1,123.4
-414.8	-243.1	0.0	408.5	0.0	-325.1	-241.5
0.0	0.0	-	0.0	0.0	27.8	0.0
0.0	0.0	-	0.0	0.0	-343.5	0.0
-143.9	-196.3	-	0.0	0.0	-254.9	-196.3
-1,251.7	-468.3	-	-289.8	0.0	-2,657.3	-468.3
-253.6	-5.3	-	-794.6	0.0	-1,060.5	-5.3
2,613.1	4,545.1	-	5,111.1	60.7	24,606.7	4,605.1
2,174.1	4,545.1	-	5,111.1	60.7	23,264.8	4,605.1
1,248.8	1,904.2	-	2,113.3	2.8	7,230.2	1,906.3
204.2	148.2	-	127.7	0.0	997.1	148.2
189.9	3.1	-	121.4	0.0	455.9	3.0
25.5	0.6	-	106.9	0 ⁺	231.1	0.6
118.3	96.4	-	100.9	0.0	668.3	96.4
710.9	1,656.0	-	1,656.4	2.8	4,877.8	1,658.2
307.7	965.4	-	24.5	0.0	8,885.6	965.4
235.2	961.0	-	2.8	0.0	8,449.9	961.0
520.6	1,450.3	-	1,588.9	40.1	4,523.1	1,490.4
95.7	37.5	-	1,052.7	14.7	1,415.7	52.2
1.3	187.6	-	331.6	3.1	1,210.2	190.7
439.0	-	-	-	-	1,342.0	0.0

Energy balance, 2021 (Petajoules)

Asia	Primary coal	Coal products	Primary oil	Oil products
Primary production	119,527.0	-	75,869.1	-
Imports	26,450.9	393.9	52,342.7	23,521.7
Exports	-12,306.3	-287.5	-40,485.2	-24,479.4
International bunkers	-	-	0.0	-6,328.6
Stock changes	-1,824.9	68.6	1,021.6	-960.0
Total energy supply	131,846.8	174.9	88,748.1	-8,246.4
Statistical difference	3,016.8	176.3	248.6	1,110.4
Transfers	0.0	0.0	7,136.3	-1,899.3
Transformation	-103,044.2	10,203.0	-94,906.9	84,879.0
Electricity plants	-72,887.6	-2,103.2	-1,255.6	-3,135.7
CHP and heat plants	-10,704.8	-442.7	-0.2	-410.6
Coke ovens	-16,855.0	18,953.7	0.0	-14.1
Oil refineries	0.0	0.0	-89,548.8	89,260.6
Other transformation	-2,596.9	-6,204.8	-4,102.4	-821.2
Energy industries own use	-2,538.6	-887.5	-318.4	-4,864.7
Losses	-14.9	-7.9	-35.3	-0.6
Final consumption	23,232.3	9,306.2	375.2	68,757.6
Final energy consumption	20,421.1	8,569.0	122.7	50,018.0
Industry	17,459.2	8,352.9	122.7	6,496.0
Iron and steel	3,631.4	5,723.0	0.0	192.5
Chemical and petrochemical	422.4	839.2	87.0	1,788.5
Non-ferrous metals	76.1	17.0	0.1	157.8
Non-metallic minerals	1,265.1	21.0	0.2	845.5
Other industries	12,064.2	1,752.7	35.4	3,511.7
Transport	58.0	0.0	0.1	28,017.3
of which Road	0.0	0.0	0.0	23,509.4
Households	1,420.6	170.4	0.0	7,485.8
Commerce, public services	176.3	33.1	0.0	853.3
Other energy use	1,306.9	12.6	0.0	7,165.6
Non-energy use	2,811.2	737.2	252.5	18,739.7

(11) See notes on pages 68-74.

2024 Energy Statistics Pocketbook

Natural gas	Biofuels and waste	Nuclear	Electricity	Heat	Total	of which: renewables ¹¹
51,494.2	19,178.2	7,920.5	12,065.4	1,661.4	287,715.9	32,254.1
19,649.8	140.0	-	576.6	0.0	123,075.6	138.8
-12,480.0	-26.1	-	-419.3	0.0	-90,483.9	-26.1
0.0	0.0	-	-	-	-6,328.6	0.0
80.1	4.1	-	0.0	0.0	-1,610.5	4.0
58,744.2	19,296.2	7,920.5	12,222.7	1,661.4	312,368.4	32,370.7
24.1	-91.0	0.0	-55.3	-13.1	4,416.8	12,135.1
0.0	0	-	0.0	0.0	5,237.0	0
-23,785.1	-3,213.0	-7,920.5	43,672.4	6,695.8	-87,419.4	-4,108.2
-20,381.2	-1,808.2	-7,920.5	42,491.0	-2,857.0	-69,857.9	-2,812.2
-1,695.0	-857.3	0.0	1,181.3	9,552.9	-3,376.4	-753.9
0.0	-5.3	-	0.0	0.0	2,079.3	0.0
-178.3	0.0	-	0.0	0.0	-466.5	0.0
-1,530.5	-542.2	-	0.0	0.0	-15,797.9	-542.2
-4,475.4	-6.2	-	-4,999.4	-1,058.2	-19,148.4	-6.2
-657.8	0.0	-	-3,814.5	-112.0	-4,643.1	0.0
29,801.9	16,168.1	-	47,136.5	7,200.1	201,977.8	16,121.2
26,256.1	16,168.1	-	47,136.5	7,200.1	175,891.5	16,121.2
13,581.3	4,820.2	-	24,490.3	4,584.8	79,907.4	4,652.7
1,039.4	32.9	-	3,534.5	216.5	14,370.2	31.0
2,640.9	88.8	-	2,971.5	2,412.5	11,250.7	64.6
54.4	4.9	-	216.0	8.1	534.3	3.7
374.9	104.6	-	237.1	2.4	2,851.0	21.2
9,471.8	4,588.8	-	17,531.3	1,945.4	50,901.2	4,532.2
2,203.6	834.7	-	917.1	41.5	32,072.3	834.7
2,064.2	834.5	-	169.0	0.0	26,577.1	834.5
7,019.7	8,385.1	-	10,590.7	1,989.6	37,061.9	8,508.2
1,788.2	406.1	-	4,618.5	190.4	8,065.8	391.5
1,663.2	1,722.0	-	6,519.9	393.8	18,784.0	1,734.1
3,545.8	-	-	-	-	26,086.3	0.0

Energy balance, 2021 (Petajoules)

Europe	Primary coal	Coal products	Primary oil	Oil products
Primary production	15,315.2	-	29,204.4	-
Imports	4,251.0	356.9	21,942.9	16,241.3
Exports	-5,721.1	-427.0	-15,171.3	-20,590.2
International bunkers	-	-	0.0	-3,619.5
Stock changes	325.4	105.9	381.4	676.8
Total energy supply	14,170.5	35.9	36,357.4	-7,291.7
Statistical difference	47.0	-16.0	122.0	-556.6
Transfers	0.0	0.0	2,168.5	-2,067.1
Transformation	-12,867.0	2,114.9	-38,101.6	37,865.5
Electricity plants	-3,362.7	-211.8	-1.7	-313.0
CHP and heat plants	-5,321.0	-330.0	-22.1	-533.2
Coke ovens	-3,445.6	3,211.0	0.0	-8.4
Oil refineries	0.0	0.0	-37,987.0	38,350.4
Other transformation	-737.7	-554.4	-90.8	369.6
Energy industries own use	-48.3	-339.7	-4.0	-1,796.8
Losses	-1.0	-55.5	-235.0	-0.8
Final consumption	1,207.2	1,771.5	63.4	27,265.7
Final energy consumption	1,171.0	1,711.5	3.0	21,752.1
Industry	710.6	1,664.3	2.5	2,039.6
Iron and steel	281.0	1,555.0	0.0	39.7
Chemical and petrochemical	106.9	9.9	1.2	739.8
Non-ferrous metals	10.4	3.0	0.2	16.2
Non-metallic minerals	198.9	73.5	0 ⁺	274.0
Other industries	113.5	23.0	1.1	970.0
Transport	0.7	0.02	0.0	16,049.6
of which Road	0.0	0.0	0.0	14,982.1
Households	345.9	40.2	0.0	1,873.0
Commerce, public services	83.7	3.9	0.0	668.2
Other energy use	30.1	3.1	0.5	1,121.8
Non-energy use	36.2	60.0	60.4	5,513.5

(11) See notes on pages 68-74.

2024 Energy Statistics Pocketbook

Natural gas	Biofuels and waste	Nuclear	Electricity	Heat	Total	of which: renewables ¹¹
34,925.1	7,974.2	12,030.2	5,247.0	796.5	105,492.5	12,913.1
16,294.4	1,174.5	-	1,824.2	0.2	62,085.4	1,150.5
-13,729.0	-689.8	-	-1,835.9	-0.1	-58,164.3	-688.9
-14.1	-6.7	-	-	-	-3,640.3	-6.7
778.6	34.2	-	0.0	0.0	2,302.3	34.1
38,255.0	8,486.4	12,030.2	5,235.3	796.6	108,075.6	13,402.1
579.6	7.3	0.0	56.4	0.8	240.5	5,371.6
0.0	0.01	-	0.0	0.0	101.4	0.01
-15,556.8	-3,549.2	-12,030.2	12,235.4	8,240.3	-21,648.7	-3,341.7
-2,870.8	-961.8	-12,004.0	7,202.1	-371.2	-12,894.8	-1,094.3
-12,221.6	-2,453.5	-26.1	5,033.3	8,611.5	-7,262.7	-2,113.6
-0.9	0.0	-	0.0	0.0	-243.9	0.0
0.0	0.0	-	0.0	0.0	363.4	0.0
-463.4	-133.9	-	0.0	0.0	-1,610.7	-133.9
-1,640.0	-31.6	-	-1,784.8	-734.7	-6,379.9	-23.1
-342.8	-3.9	-	-1,256.8	-903.7	-2,799.5	-3.9
20,135.8	4,894.5	-	14,372.7	7,397.6	77,108.4	4,661.8
17,343.1	4,894.5	-	14,372.7	7,397.6	68,645.6	4,661.8
5,606.8	1,409.4	-	5,540.2	2,489.6	19,462.9	1,070.6
928.3	61.4	-	728.8	315.4	3,909.6	2.7
1,278.8	54.0	-	919.8	948.3	4,058.5	25.3
178.1	0.5	-	714.1	18.7	941.0	0.2
996.1	261.2	-	350.9	106.9	2,261.4	86.5
2,225.6	1,032.3	-	2,826.6	1,100.4	8,292.4	955.9
1,277.2	763.9	-	578.8	0.0	18,670.3	763.9
99.6	760.6	-	35.2	0.0	15,877.4	760.6
7,763.1	2,304.2	-	4,212.7	3,314.3	19,853.3	2,398.2
2,133.7	277.1	-	3,712.1	1,420.5	8,299.2	277.7
562.2	139.8	-	328.9	173.3	2,359.7	151.4
2,792.7	-	-	-	-	8,462.8	0.0

Energy balance, 2021 (Petajoules)

Oceania	Primary coal	Coal products	Primary oil	Oil products
Primary production	11,534.5	-	861.7	-
Imports	62.9	8.6	678.9	1,580.7
Exports	-9,846.1	-18.8	-594.4	-215.5
International bunkers	-	-	0.0	-96.4
Stock changes	62.8	0.0	27.2	2.8
Total energy supply	1,814.1	-10.2	973.4	1,271.6
Statistical difference	-31.0	0.0	-114.7	78.0
Transfers	0.0	0.0	74.4	48.2
Transformation	-1,730.7	70.3	-1,161.2	1,043.1
Electricity plants	-1,583.0	0.0	0.0	-106.1
CHP and heat plants	-19.8	-8.2	0.0	-0.9
Coke ovens	-128.0	109.2	0.0	0.0
Oil refineries	0.0	0.0	-1,021.4	1,004.5
Other transformation	0.0	-30.8	-139.8	145.6
Energy industries own use	-0.3	-39.3	-1.3	-188.8
Losses	0.0	-0.3	0.0	0.0
Final consumption	114.1	20.4	0.0	2,096.0
Final energy consumption	109.0	20.4	0.0	1,915.4
Industry	106.6	20.4	0.0	245.2
Iron and steel	0.2	12.6	0.0	0.9
Chemical and petrochemical	6.0	0.5	0.0	5.0
Non-ferrous metals	46.7	3.4	0.0	12.4
Non-metallic minerals	21.3	0.1	0.0	9.7
Other industries	32.3	3.8	0.0	217.2
Transport	0.0	0.0	0.0	1,476.2
of which Road	0.0	0.0	0.0	1,277.9
Households	0.2	0.02	0.0	23.1
Commerce, public services	0.7	0.05	0.0	40.5
Other energy use	1.4	0.0	0.0	130.5
Non-energy use	5.1	0.0	0.0	180.6

(11) See notes on pages 68-74.

2024 Energy Statistics Pocketbook

Natural gas	Biofuels and waste	Nuclear	Electricity	Heat	Total	of which: renewables ¹¹
5,756.9	325.4	0.0	349.1	347.1	19,174.7	1,017.8
186.8	2.9	-	0.0	0.0	2,520.8	2.9
-4,255.3	-0.01	-	0.0	0.0	-14,930.1	-0.01
0.0	0.0	-	-	-	-96.4	0.0
15.7	0	-	0.0	0.0	108.5	0
1,704.1	328.3	0.0	349.1	347.1	6,777.4	1,020.7
142.1	0.1	0.0	2.9	0	77.4	381.2
0.0	0.0	-	0.0	0.0	122.6	0.0
-519.7	-64.6	0.0	810.4	-319.4	-1,871.8	-352.0
-392.3	-21.7	0.0	744.4	-318.6	-1,677.2	-307.4
-127.4	-42.4	0.0	66.0	-0.8	-133.4	-44.1
0.0	0.0	-	0.0	0.0	-18.7	0.0
0.0	0.0	-	0.0	0.0	-17.0	0.0
-0.04	-0.4	-	0.0	0.0	-25.5	-0.4
-417.5	0.0	-	-137.8	0.0	-785.1	0.0
-3.5	0.0	-	-58.9	0.0	-62.7	0.0
621.3	263.6	-	960.0	27.7	4,103.0	287.5
534.5	263.6	-	960.0	27.7	3,830.6	287.5
311.5	128.6	-	350.8	4.4	1,167.4	129.2
9.1	0.0	-	16.5	0.0	39.3	0.0
60.1	4.0	-	14.7	0.0	90.3	0.4
123.7	1.0	-	141.5	0.0	328.7	1.0
45.6	2.7	-	12.0	0.0	91.4	2.7
73.0	120.9	-	166.1	4.4	617.6	125.1
18.0	3.8	-	23.7	0.0	1,521.7	3.8
2.3	3.8	-	0.4	0.0	1,284.4	3.8
155.7	79.6	-	294.1	20.0	572.7	99.6
47.1	11.2	-	270.0	2.8	372.3	14.1
2.3	40.5	-	21.3	0.4	196.4	40.9
86.7	-	-	-	-	272.4	0.0

Energy indicators¹², 2021

Region	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable share in TFEC	Electricity consumption per capita	CO ₂ emissions per capita	CO ₂ emissions per GDP
	PJ	GJ per capita	MJ/INTL\$	%	%	kWh per capita	kg per capita	tons/million INTL\$
WORLD	612,074	77.4	4.5	99.6	18.6	3,013.2	4,312.9	253.1
Africa	35,266	25.3	5.2	130.7	55.6	507.0	932.8	191.9
Northern Africa	9,410	36.8	3.7	148.3	8.9	1,195.2	2,079.0	208.1
Sub-Saharan Africa	25,857	22.7	6.1	124.3	69.4	349.5	674.9	182.0
Americas	136,679	132.7	4.1	110.8	17.2	5,613.6	6,500.9	201.7
Latin America and the Caribbean	34,798	53.1	3.4	103.7	31.9	2,167.6	2,378.7	152.4
Northern America	101,881	271.5	4.4	113.2	12.1	11,628.1	13,695.6	223.7
Asia	312,368	66.5	4.9	92.1	15.3	2,789.1	4,194.6	307.5
Central Asia	6,270	82.6	6.7	195.2	4.5	2,393.6	5,495.9	447.0
Eastern Asia	184,685	111.0	5.4	67.5	12.1	5,448.4	7,483.0	362.3
South-eastern Asia	29,402	43.5	3.5	116.3	23.7	1,508.8	2,438.0	198.8
Southern Asia	60,408	30.4	4.5	76.1	25.9	877.1	1,745.1	258.7
Western Asia	31,603	109.1	4.5	223.2	4.3	3,737.4	5,888.9	242.5
Europe	108,076	144.6	3.7	97.6	15.4	5,340.9	6,746.6	173.7
Eastern Europe	50,155	172.1	6.4	143.5	7.3	4,498.3	8,993.5	332.7
Northern Europe	13,502	127.1	2.5	123.3	30.2	6,816.1	4,832.7	95.8
Southern Europe	14,766	97.1	2.7	30.5	20.6	4,679.4	4,679.3	128.7
Western Europe	29,653	150.0	2.9	41.7	17.7	6,299.6	6,053.0	116.5
Oceania	6,777	152.3	4.3	282.9	16.2	5,993.9	9,333.4	266.1
Australia and New Zealand	6,436	207.3	4.3	288.4	14.7	8,221.0	12,837.1	265.9
Melanesia	298	24.4	5.6	205.3	44.3	679.0	1,125.8	259.0
Micronesia	16	29.8	7.6	7.1	7.0	3,849.6	2,008.1	840.3
Polynesia	28	39.5	3.0	9.1	11.1	1,488.4	2,575.2	262.2

Region	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable share in TFEC	Electricity consumption per capita	CO ₂ emissions per capita	CO ₂ emissions per GDP
	PJ	GJ per capita	MJ/INTL\$	%	%	kWh per capita	kg per capita	tons/million INTL\$
Afghanistan	178.6	4.5	2.9	51.1	20.0	143.4	249.7	164.7
Albania	95.0	33.3	2.3	80.3	41.2	2,335.0	1,367.2	95.1
Algeria	2,552.8	57.8	5.2	243.4	0.1	1,436.1	3,304.3	299.6
American Samoa	5.4	119.0	-	0.4	0.4	3,290.6	8,700.9	-
Andorra ¹³	8.0	100.6	1.9	6.7	18.4	5,669.0	5,383.5	101.3
Angola	535.0	15.5	2.6	549.4	55.3	364.8	420.9	71.2
Anguilla	2.0	128.4	-	0.6	0.8	5,468.9	9,082.7	-
Antigua and Barbuda	9.0	96.1	4.7	0.7	0.9	3,261.1	6,930.5	338.1
Argentina	3,402.5	75.1	3.4	92.8	9.6	2,850.6	4,044.7	185.1
Armenia	160.3	57.4	4.0	24.1	13.3	2,272.6	2,536.0	178.5
Aruba	12.4	116.8	3.1	5.5	8.8	7,345.2	8,207.3	219.8
Australia	5,493.6	211.9	4.3	325.0	12.4	8,347.5	14,151.1	287.9
Austria	1,395.1	156.4	2.9	36.3	36.0	7,222.8	6,475.8	119.9
Azerbaijan	678.8	65.8	4.6	386.5	1.3	1,976.7	3,415.9	240.7
Bahamas	35.6	87.3	2.9	0.9	1.1	3,860.9	6,243.4	204.9
Bahrain	649.9	444.1	8.9	157.6	0.1	22,230.6	22,073.8	443.7
Bangladesh	2,260.1	13.3	2.3	64.4	34.9	533.7	621.5	105.1
Barbados	15.5	55.1	4.0	10.8	5.5	3,213.7	3,837.6	276.7
Belarus	1,142.5	119.3	6.2	22.2	8.2	3,446.2	5,744.3	297.6
Belgium	2,314.5	199.3	3.8	32.3	11.6	7,007.1	7,146.7	137.3
Belize	16.8	41.9	4.7	45.9	26.6	1,368.2	1,538.4	174.3
Benin	207.0	15.9	4.8	60.1	54.9	108.4	418.1	125.9
Bermuda	7.6	118.7	1.5	8.0	0.9	8,141.6	8,190.5	104.9
Bhutan	78.9	101.5	8.8	117.6	81.8	3,157.2	1,534.1	132.3
Bolivia (Plurinational State of)	377.5	31.3	3.9	195.5	12.8	746.0	1,666.2	206.9
Bonaire, Sint Eustatius and Saba	1.7	64.1	-	7.9	11.5	4,530.8	4,236.8	-
Bosnia and Herzegovina	308.4	94.3	5.9	70.9	36.6	3,311.0	6,589.6	414.6
Botswana	88.3	34.1	2.3	64.0	8.3	1,235.5	2,397.7	160.8
Brazil	12,876.8	60.1	4.1	104.6	45.0	2,484.9	2,084.6	141.5
British Virgin Islands	2.6	83.2	-	0.8	1.3	5,446.3	6,024.6	-
Brunei Darussalam	167.9	376.9	6.3	335.7	0.3	10,770.6	24,086.1	400.6
Bulgaria	792.9	115.1	4.7	63.4	20.1	4,497.6	5,873.5	241.1
Burkina Faso	263.0	11.9	5.5	70.8	71.2	120.7	234.6	107.8
Burundi	67.0	5.3	7.5	83.4	83.1	23.6	62.3	87.2
Cabo Verde	9.4	15.9	2.5	17.7	22.6	544.1	951.8	149.7
Cambodia	275.6	16.6	3.8	32.6	31.1	684.5	827.7	190.1

Region	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable share in TFEC	Electricity consumption per capita	CO ₂ emissions per capita	CO ₂ emissions per GDP
	PJ	GJ per capita	MJ/INTL\$	%	%	kWh per capita	kg per capita	tons/million INTL\$
Cameroon	426.5	15.7	4.3	130.8	79.5	223.3	239.6	64.9
Canada	12,144.2	318.3	6.6	185.8	23.7	13,750.0	14,197.1	293.9
Cayman Islands	9.1	133.9	1.9	-	0.01	9,934.4	9,560.7	137.8
Central African Republic	38.4	7.0	8.4	91.0	90.9	24.7	45.4	54.2
Chad	106.8	6.2	4.4	335.9	69.9	14.9	125.4	88.0
Chile	1,655.3	84.9	3.3	32.8	24.3	3,915.2	4,342.6	170.9
China	148,885.1	104.4	6.0	79.5	13.3	5,087.3	7,311.0	418.0
China, Hong Kong SAR	513.6	68.5	1.2	-	0.04	6,112.8	4,576.7	77.1
China, Macao SAR	37.8	55.1	0.8	9.4	13.6	7,942.8	1,331.5	19.9
Colombia	1,777.8	34.5	2.4	231.0	26.5	1,362.3	1,708.5	116.5
Comoros	11.3	13.8	4.3	37.8	41.2	124.0	621.7	192.6
Congo	144.5	24.8	6.7	488.0	71.4	265.1	738.3	199.5
Cook Islands	1.1	65.5	-	7.4	8.8	1,880.7	4,423.7	-
Costa Rica	217.2	42.1	2.0	53.4	34.3	2,010.7	1,435.4	67.6
Côte d'Ivoire	548.5	20.0	3.8	86.5	60.2	328.1	500.5	94.1
Croatia	360.9	88.9	2.9	46.0	34.0	4,062.8	3,714.3	121.3
Cuba ¹³	359.4	31.9	1.3	47.7	15.4	1,220.5	1,994.6	81.1
Curaçao	32.7	171.7	10.2	2.5	2.8	3,868.6	10,808.1	640.2
Cyprus	92.0	74.0	2.4	8.6	15.5	3,737.0	4,679.7	148.9
Czechia	1,785.4	169.9	4.2	57.4	17.3	5,706.8	8,653.8	212.5
Democratic People's Republic of Korea ¹³	681.8	26.3	6.5	94.6	14.8	735.5	2,055.1	507.6
Democratic Republic of the Congo	1,412.8	14.7	13.7	100.0	95.6	126.9	34.3	31.9
Denmark	676.0	115.5	2.0	56.7	39.2	5,481.7	4,359.5	74.1
Djibouti	11.3	10.2	2.1	33.7	26.6	489.1	359.3	73.3
Dominica	2.4	33.0	3.0	6.0	8.8	1,850.5	2,256.9	207.1
Dominican Republic	433.2	39.0	2.1	11.1	13.9	1,687.7	2,487.4	133.5
Ecuador	603.6	33.9	3.2	191.8	19.7	1,515.7	1,921.8	180.1
Egypt	4,179.3	38.2	3.1	96.2	7.1	1,446.5	2,083.5	171.1
El Salvador	195.5	31.0	3.4	44.4	20.5	1,027.5	1,144.3	124.5
Equatorial Guinea	123.9	75.8	5.1	437.2	5.3	956.9	4,177.5	283.6
Eritrea ¹³	40.1	11.1	6.4	78.2	80.6	87.4	173.8	99.9
Estonia	191.6	144.2	3.7	96.3	37.7	5,933.3	9,020.0	232.6
Eswatini	41.2	34.6	3.8	66.6	65.4	1,123.2	848.1	93.3
Ethiopia	1,933.9	16.1	6.9	91.4	90.7	93.1	106.1	45.8
Falkland Islands (Malvinas)	0.6	149.9	-	8.9	4.4	4,596.2	10,719.3	-
Faroe Islands	11.4	215.4	-	4.9	5.1	7,328.6	15,311.9	-

Region	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable share in TFEC	Electricity consumption per capita	CO ₂ emissions per capita	CO ₂ emissions per GDP
	PJ	GJ per capita	MJ/INTL\$	%	%	kWh per capita	kg per capita	tons/million INTL\$
Fiji	21.8	23.6	2.3	28.3	29.7	896.8	1,205.1	116.1
Finland	1,382.6	249.8	5.1	57.6	49.5	14,829.1	6,261.2	128.3
France	9,825.7	146.8	3.2	53.7	16.2	6,472.2	4,258.6	93.6
French Polynesia ¹³	13.3	43.8	2.6	5.8	7.4	2,081.9	2,939.6	174.8
Gabon	105.4	45.0	3.3	473.3	79.0	992.3	1,217.3	88.1
Gambia	17.2	6.5	3.1	41.8	48.6	128.1	282.2	135.9
Georgia	220.7	58.7	3.8	23.0	24.6	3,490.9	2,671.3	174.8
Germany	12,047.2	144.4	2.7	35.2	17.6	5,930.1	7,195.5	135.1
Ghana	502.2	15.3	2.8	127.8	38.7	550.3	602.0	111.1
Gibraltar	10.5	322.5	-	0 ¹	0.02	6,775.1	19,914.6	-
Greece	841.7	80.6	2.7	23.6	21.3	4,714.3	4,437.9	148.0
Greenland	9.5	168.5	-	17.5	11.6	6,267.8	10,113.4	-
Grenada	4.7	38.0	2.8	7.2	10.2	1,659.5	2,555.3	186.7
Guam ¹⁵	0.3	1.6	-	89.3	4.5	9,117.8	-	-
Guatemala	727.3	41.3	4.8	68.0	64.6	667.9	1,065.7	122.9
Guernsey ¹⁵	1.2	19.2	-	0.1	1.5	5,354.8	-	-
Guinea	184.8	13.7	5.2	67.1	66.9	191.0	312.2	118.3
Guinea-Bissau	32.1	15.6	8.5	85.5	87.4	41.3	151.0	82.5
Guyana	49.5	61.5	2.8	501.8	13.2	1,097.0	4,053.3	184.9
Haiti	192.8	16.8	5.8	74.8	76.6	34.9	300.5	104.3
Honduras	238.4	23.2	4.2	43.5	39.5	754.7	937.0	168.2
Hungary	1,149.4	118.4	3.5	39.3	15.2	4,356.2	4,549.1	135.5
Iceland	363.2	980.6	18.3	91.9	82.0	49,537.2	4,471.4	83.7
India	40,056.9	28.5	4.3	62.8	31.5	857.2	1,734.6	259.8
Indonesia	10,237.0	37.4	3.2	208.7	24.7	944.3	2,280.0	192.2
Iran (Islamic Republic of)	12,328.0	140.2	9.3	130.9	1.7	3,253.2	7,420.1	494.5
Iraq	1,962.3	45.1	5.1	449.1	0.8	1,202.0	2,649.0	301.5
Ireland	578.8	116.1	1.1	21.5	12.8	5,926.6	6,756.8	64.0
Isle of Man ¹⁵	4.0	47.2	-	13.6	3.2	4,058.7	2,175.1	-
Israel	955.4	107.3	2.4	74.9	6.3	6,820.9	6,590.2	147.7
Italy	6,247.8	105.4	2.5	22.9	17.5	4,929.6	5,087.9	119.8
Jamaica	116.3	41.1	4.3	10.0	9.6	1,289.3	2,476.8	257.9
Japan	16,765.2	134.5	3.3	13.3	9.1	7,478.5	8,065.9	194.9
Jersey ¹⁵	3.1	28.0	-	24.8	18.7	5,779.0	-	-
Jordan	332.9	29.9	3.2	11.2	11.6	1,696.8	1,767.1	188.4
Kazakhstan	2,886.9	150.4	5.8	230.4	2.0	4,525.3	11,670.3	451.6

Region	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable share in TFC	Electricity consumption per capita	CO ₂ emissions per capita	CO ₂ emissions per GDP
	PJ	GJ per capita	MJ/INTL\$	%	%	kWh per capita	kg per capita	tons/million INTL\$
Kenya	980.3	18.5	3.9	74.9	67.0	183.6	336.0	70.8
Kiribati	1.6	12.4	6.2	37.4	42.2	245.2	558.8	278.3
Kosovo	121.5	73.1	5.7	66.7	23.8	3,491.0	5,400.8	422.9
Kuwait	1,512.2	355.8	7.8	411.2	0.2	11,100.9	20,114.6	441.3
Kyrgyzstan	171.8	26.3	5.2	61.8	28.1	1,978.3	1,443.2	283.3
Lao People's Democratic Republic	242.1	32.6	4.2	130.9	51.5	951.5	2,412.7	307.5
Latvia	188.0	100.3	3.1	60.3	43.7	3,596.2	3,355.7	104.8
Lebanon	268.2	48.0	3.7	3.5	5.9	2,038.6	3,383.4	260.5
Lesotho	56.4	24.7	11.0	31.9	33.6	302.1	1,410.0	629.7
Liberia	101.5	19.5	13.7	91.6	93.2	61.0	113.4	79.7
Libya	699.3	103.8	5.1	428.7	3.1	2,679.1	6,464.0	318.8
Liechtenstein ¹⁵	3.6	91.1	-	41.4	53.6	10,696.7	1,388.0	-
Lithuania	321.5	115.4	2.9	27.8	33.9	4,002.7	4,002.6	101.0
Luxembourg	153.0	239.3	2.0	8.4	21.5	9,999.4	12,199.7	102.8
Madagascar	400.7	13.9	9.3	85.7	83.6	72.6	151.9	102.5
Malawi	91.8	4.6	3.1	76.6	71.1	83.0	80.2	53.8
Malaysia	3,984.0	118.7	4.5	98.0	8.6	4,628.6	7,178.5	271.8
Maldives	28.1	53.9	2.9	1.1	1.4	1,481.6	3,897.8	207.8
Mali	298.8	13.6	6.4	71.4	71.2	141.8	288.9	136.2
Malta	29.6	56.2	1.2	4.0	8.3	4,897.4	3,080.6	67.2
Marshall Islands	2.3	53.6	9.0	8.9	12.1	1,453.0	3,558.9	595.5
Mauritania	86.8	18.8	3.7	25.3	22.1	286.0	1,004.8	195.4
Mauritius	58.8	45.3	2.2	13.4	8.3	2,115.7	3,140.3	154.0
Mexico	7,520.0	59.4	3.0	86.4	13.0	2,328.6	3,328.2	169.7
Micronesia (Federated States of)	2.1	18.9	5.7	2.1	2.1	415.9	1,276.3	384.3
Mongolia	482.6	144.1	12.4	183.4	2.8	2,316.5	12,852.2	1,101.4
Montenegro	45.9	73.0	3.6	69.4	39.8	4,742.6	3,984.4	195.1
Montserrat	0.4	82.3	-	1.6	2.1	2,787.0	5,714.7	-
Morocco	965.3	25.6	3.2	11.2	12.4	917.6	1,781.3	220.8
Mozambique	470.1	14.7	11.9	177.5	76.9	390.7	214.6	174.2
Myanmar	816.9	15.2	3.7	135.9	60.6	321.1	514.4	125.0
Namibia	79.2	31.3	3.4	35.6	30.4	1,391.6	1,377.0	149.5
Nauru	0.8	63.2	5.8	1.4	1.6	2,905.1	4,617.0	420.2
Nepal	645.0	21.5	5.6	73.7	74.5	298.5	420.5	109.1
Netherlands (Kingdom of the)	2,960.6	169.2	2.9	37.1	12.1	6,123.5	7,584.2	132.0
New Caledonia ¹³	56.7	197.0	12.3	4.6	8.3	9,880.3	13,861.0	868.9

Region	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable share in TFEC	Electricity consumption per capita	CO ₂ emissions per capita	CO ₂ emissions per GDP
	PJ	GJ per capita	MJ/INTL\$	%	%	kWh per capita	kg per capita	tons/million INTL\$
New Zealand	942.0	183.6	4.2	74.9	28.8	7,581.7	6,197.2	141.2
Nicaragua	168.2	24.5	4.3	56.3	50.2	566.2	732.1	128.6
Niger	112.1	4.4	3.7	103.3	74.2	53.5	103.6	87.3
Nigeria	6,895.8	32.3	6.6	139.8	80.4	132.8	509.5	103.5
Niue	0.1	48.0	-	2.6	3.0	1,703.7	3,367.2	-
North Macedonia	114.8	54.6	3.3	35.6	23.7	3,121.0	3,189.5	194.4
Northern Mariana Islands	5.9	120.0	-	0.3	0.5	4,830.0	8,777.3	-
Norway	1,189.5	220.1	3.3	752.8	60.9	22,208.1	6,354.4	96.3
Oman	1,244.0	275.2	8.0	281.7	0.1	7,888.8	13,411.2	391.1
Other Asia ¹³	5,104.7	213.9	3.8	8.7	3.5	11,087.2	11,966.3	214.1
Pakistan	4,379.2	18.9	3.6	55.5	25.1	556.2	970.7	185.5
Palau	2.9	163.1	11.6	0.7	0.9	4,882.4	11,951.7	846.9
Panama	184.6	42.4	1.4	25.1	26.9	2,800.5	2,338.7	76.9
Papua New Guinea	207.6	20.9	5.7	288.0	54.5	446.7	813.7	223.7
Paraguay	303.6	45.3	3.3	90.1	58.1	2,044.5	1,199.3	87.7
Peru	962.2	28.5	2.3	94.9	27.5	1,467.9	1,366.0	109.0
Philippines	2,491.2	21.9	2.7	50.4	27.2	778.2	1,178.7	145.6
Poland	4,550.1	118.8	3.4	55.1	15.3	3,750.9	7,879.1	228.8
Portugal	843.3	82.0	2.4	30.7	32.3	4,598.7	3,369.9	99.5
Puerto Rico ¹⁵	72.1	22.2	0.7	2.6	2.6	4,996.6	1,210.2	36.9
Qatar	1,787.6	665.0	7.2	511.2	0.03	16,889.9	29,610.2	318.7
Republic of Korea	12,214.4	235.7	5.3	17.6	3.8	10,340.7	11,623.3	262.8
Republic of Moldova	124.5	40.7	3.5	25.6	23.4	1,348.4	1,761.4	151.6
Romania	1,440.1	74.5	2.4	67.1	23.7	2,382.4	3,575.9	116.8
Russian Federation	34,759.1	239.5	8.5	183.3	3.5	5,565.9	12,482.0	440.4
Rwanda	108.3	8.0	3.6	82.1	79.4	58.5	109.1	48.8
Saint Helena	0.2	32.5	-	7.9	10.2	1,714.1	2,190.1	-
Saint Kitts and Nevis	3.3	69.6	2.6	1.1	1.6	3,675.9	4,969.2	187.8
Saint Lucia	7.9	44.0	3.4	7.9	9.7	1,964.2	2,889.8	221.5
Saint Pierre and Miquelon	0.8	133.2	-	0.7	1.2	8,293.4	9,693.6	-
Saint Vincent and the Grenadines	3.5	34.0	2.5	4.1	5.0	1,321.5	2,296.4	165.9
Samoa	5.2	23.7	4.3	31.6	36.0	696.9	1,120.3	202.4
Sao Tome and Principe	3.1	13.9	4.0	34.6	40.8	306.6	660.9	188.7
Saudi Arabia	10,955.6	304.7	6.5	243.0	0.1	8,388.3	15,275.8	326.6
Senegal	212.1	12.6	3.6	40.9	35.9	320.0	569.0	162.0
Serbia	667.9	91.5	4.9	63.6	27.4	4,001.7	6,009.7	323.1

Region	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable share in TFEC	Electricity consumption per capita	CO ₂ emissions per capita	CO ₂ emissions per GDP
	PJ	GJ per capita	MJ/INTL\$	%	%	kWh per capita	kg per capita	tons/million INTL\$
Seychelles	8.6	80.5	3.1	1.1	1.7	4,533.6	5,858.4	225.0
Sierra Leone	74.6	8.9	5.5	75.9	71.1	21.3	152.3	94.3
Singapore	1,498.0	252.1	2.5	1.7	1.1	9,002.3	13,729.8	138.8
Sint Maarten (Dutch part)	10.8	244.9	6.6	-	0.05	6,282.6	15,906.5	428.0
Slovakia	743.4	136.5	4.2	39.1	17.8	4,689.9	5,465.7	168.1
Slovenia	276.6	130.5	3.3	50.6	23.5	6,350.2	5,609.2	140.6
Solomon Islands	7.5	10.6	4.4	44.4	49.1	122.9	422.9	176.4
Somalia	163.4	9.6	6.6	94.7	95.4	21.5	37.2	25.5
South Africa	5,473.9	92.2	6.9	107.4	10.5	3,256.4	7,310.5	548.1
South Sudan ¹³	33.3	3.1	5.9	999.0	32.5	48.7	167.3	320.3
Spain	4,793.5	100.9	2.6	30.0	18.9	4,798.8	4,466.4	116.7
Sri Lanka	453.3	20.8	1.5	36.7	44.6	698.7	1,012.0	75.1
State of Palestine	87.0	16.9	3.1	11.1	15.4	1,301.7	721.3	133.3
Sudan	527.5	11.6	3.1	72.6	51.1	303.9	450.3	121.7
Suriname	41.9	68.4	4.6	103.9	14.5	2,135.1	4,319.8	291.7
Sweden	1,944.6	185.8	3.4	75.7	56.9	12,254.0	2,959.9	54.9
Switzerland	953.7	109.7	1.5	49.7	27.9	6,686.7	3,493.0	49.1
Syrian Arab Republic ¹⁴	363.1	17.0	10.8	54.9	1.1	567.7	1,063.1	675.0
Tajikistan	205.4	21.1	5.4	77.3	53.0	1,413.0	764.8	195.6
Thailand	5,718.7	79.9	4.7	48.4	19.0	2,782.2	3,316.2	194.1
Timor-Leste	9.1	6.9	1.4	2,254.4	12.1	287.7	448.1	88.9
Togo	158.0	18.3	8.6	81.8	75.1	170.6	206.4	96.9
Tonga	2.7	25.3	4.1	1.9	1.8	631.0	1,809.8	294.6
Trinidad and Tobago	642.8	421.3	18.3	167.9	0.2	5,569.2	9,762.1	423.8
Tunisia	485.5	39.6	3.8	48.5	11.4	1,443.2	2,193.6	211.0
Türkiye	6,653.1	78.5	2.5	29.1	12.3	3,333.4	4,701.7	149.3
Turkmenistan	1,010.1	159.3	10.8	325.0	0.1	1,967.2	9,689.4	659.3
Turks and Caicos Islands	5.3	117.6	5.9	0.5	0.8	5,401.9	8,294.9	419.7
Tuvalu	0.1	12.3	2.7	4.0	5.0	635.8	858.9	186.5
Uganda	1,086.4	23.7	10.5	82.7	91.0	78.1	123.4	54.9
Ukraine	3,667.6	84.3	6.8	61.3	8.8	2,706.0	3,983.3	323.6
United Arab Emirates	3,552.9	379.4	5.4	265.8	0.9	13,777.5	20,811.9	297.2
United Kingdom	6,646.4	98.8	2.2	63.0	12.2	4,251.4	4,785.2	105.4
United Republic of Tanzania	1,082.6	17.0	6.8	86.7	78.5	113.0	249.8	99.7
United States	89,719.0	266.2	4.2	103.4	10.7	11,389.4	13,640.6	217.6
United States Virgin Islands ¹⁵	0.2	1.5	-	100.0	5.9	6,436.2	-	-

Region	Total energy supply	Energy use (TES) per capita	Energy intensity	Self-sufficiency	Renewable share in TFEC	Electricity consumption per capita	CO ₂ emissions per capita	CO ₂ emissions per GDP
	PJ	GJ per capita	MJ/INTL\$	%	%	kWh per capita	kg per capita	tons/million INTL\$
Uruguay	234.3	68.4	2.9	58.4	58.1	3,364.8	2,210.2	95.0
Uzbekistan	1,995.7	58.6	7.3	102.3	1.2	1,632.3	3,367.5	421.4
Vanuatu	4.0	12.6	4.5	22.7	24.6	227.6	701.6	250.5
Venezuela (Bolivarian Republic of) ¹³	1,268.8	45.0	8.2	187.2	40.5	2,900.9	2,224.0	406.9
Viet Nam	3,961.1	40.6	3.8	65.7	29.3	2,293.4	2,652.7	249.6
Wallis and Futuna Islands	0.4	34.9	-	2.2	3.3	1,910.0	2,493.5	-
Yemen ¹³	127.4	3.9	2.3	121.2	3.6	68.2	255.1	148.7
Zambia	481.4	24.7	7.5	86.7	80.4	658.9	358.0	108.9
Zimbabwe	487.6	30.5	14.4	92.3	82.4	540.5	607.0	287.0

General notes

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

Maps disclaimer

The designations employed and the presentation of material on the maps in this publication 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. Final status of the Abyei area is not yet 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).

Maps in this Pocketbook were created based on a worldwide geospatial dataset provided by UN Geospatial (<https://www.un.org/geospatial>).

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/energystats/data>.

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

GDP data used to calculate energy intensity are mostly from the World Bank (GDP, PPP, constant 2017 international \$) and are available at: <https://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD> (updated on 18/12/2023). For some countries - namely Andorra, Cuba, the Democratic People's Republic of Korea, Eritrea, French Polynesia, New Caledonia, Other Asia, South Sudan, Venezuela (Bolivarian Republic of) and Yemen - GDP PPP data were not available from the World Bank and IMF data were used instead (World Economic Outlook, available at <https://www.imf.org/en/Publications/SPROLLS/world-economic-outlook-databases>). GDP PPP for Syrian Arab Republic was taken from the CHELEM database (http://www.cepii.fr/CEPII/en/bdd_modele/bdd_modele_item.asp?id=17).

Data on renewable electricity capacity are mostly from the UNSD the Energy Statistics Database, being complemented by data from IRENA (<https://www.irena.org/Data/Downloads/Tools>) for thermal renewable capacity.

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/energystats/pubs/yearbook/2021/05gn.pdf>.

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

Concepts, definitions and chapter notes

All the definitions of products and flows are based on the International Recommendations for Energy Statistics (IRES) available at: <https://unstats.un.org/unsd/energystats/methodology/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 Balances publication (available at: <https://unstats.un.org/unsd/energystats/pubs/balance>) under the chapter "Concepts and Definitions".

Please note that in the present publication the product coal includes peat unless otherwise specified; data for natural gas are expressed on an NCV basis (as are data for all other products); energy sources (i.e. coal, oil, natural gas, biofuels and waste, and electricity and heat) generally refer to both primary and secondary products, with the exception of the chapter on primary energy production.

Per capita data are calculated by dividing energy or other values (total energy supply, electricity generation, electricity consumption, total final consumption, CO₂ emissions) by population.

Total energy supply

Note (1), page 1 - *International aviation and marine bunkers* are recorded separately due to their importance, e.g. for the estimation of greenhouse gas emissions. At the world level, bunkers are classified as part of transport final consumption and *they are included in the world total energy supply*; however, at the country and regional levels, bunkers are not

accounted for as final consumption because they pertain to more than one country or region and are *therefore subtracted from total energy supply*.

Note (2), page 2 - *Energy intensity* is calculated by dividing total energy supply by GDP, PPP (constant 2017 international \$). It corresponds to SDG indicator 7.3.1. TES data in this publication are derived from the United Nations Energy Statistics Database, while for GDP PPP various sources have been used (see the section *Data sources*). Any discrepancies with the official indicator shall be attributed to the use of different sources for both TES and GDP PPP.

Primary energy production

Note (3), page 6 - *Energy self-sufficiency* is calculated as the ratio between primary energy production and total energy supply expressed in percentage.

The category *Other primary oil* (chart 27 and table 28) refers 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.

Electricity

Note (4), pages 19, 21 - The category *Solar, wind and other sources* refers to solar, wind, geothermal, chemical heat, tide, wave and marine, and other non-specified sources.

Note (5), pages 26, 27 - Electricity capacities from geothermal, tide, wave and marine and from other non-specified sources are not shown in tables 49 and 51. They are negligible compared to the world total (43.5 GW in 2021) and are not included in chart 48.

The categories *Renewable electricity generation* (Facts and figures box, map 42, table 43 and 47, chart 46) and *Renewable electricity capacity* (Facts and figures box, tables 49, 51 and 59, chart 50 and map 58) refer to hydro, wind, solar, geothermal, tide, wave and marine, as well as renewable thermal, i.e. electricity from biofuels and renewable waste.

The category *Non-renewable electricity generation* (Facts and figures box, tables 49 and 51 and chart 50) refers to: (a) non-renewable thermal, i.e. electricity generated from all non-renewable combustible fuels: coal, oil, natural gas, and non-renewable waste; (b) nuclear; (c) chemical heat and other non-specified sources. *Non-renewable electricity*

capacity (tables 49 and 51, chart 50) refers to thermal from non-renewable fuels, nuclear, and other non-specified capacities.

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.

Refinery output

Note (6), page 36 - World oil energy supply includes international aviation and marine bunkers; conversely, bunkers are excluded from oil energy supply calculated for countries and regions. The different approach adopted in treating international bunkers at the world level as opposed to the country level determines a divergence between the world oil supply and the sum of the country values in table 69. For further explanations, please refer to the section *Concepts and definitions*.

Refinery output refers to the total amount of oil products produced in refineries (naphtha, aviation gasoline, motor gasoline, gasoline-type jet fuel, kerosene-type jet fuel, other kerosene, gas/diesel oil, fuel oil, 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).

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 annualized capacity of crude oil refineries available for operation at the end of the reference year.

The category *Other* (chart 64 and table 65) 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.

Total final consumption

Note (7), page 37 - *Total final consumption* (TFC) refers to the consumption of energy products by end users, which is the last stage of energy flows captured in energy statistics. As such, TFC excludes energy products that are transformed into secondary energy products. For example, fuels used for electricity and heat generation are not accounted directly in TFC, but accounted for indirectly as final electricity and heat consumption. For coal specifically, around 67% of TES in 2021 is used as input for electricity and heat generation worldwide.

Note (8), page 42 - *World total final consumption* includes international aviation and marine bunkers; conversely, bunkers are excluded from total final consumption calculated for countries and regions. The different approach adopted in treating international bunkers at the world level as opposed to the country level determines a divergence between the world total final consumption and the sum of the country values in table 80. For further explanations, please refer to the section *Concepts and definitions*.

The category *Other* (chart 77 and table 78) 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 79 and table 80) 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. Energy consumption data in this publication are derived from the United Nations Energy Statistics Database. Any discrepancies with the official indicator shall be attributed to the use of different sources.

CO₂ emissions

In this chapter, introduced in the current 2024 edition of the Pocketbook for the first time, estimates of CO₂ emissions from fossil fuel combustion are presented. The calculations have been carried out using data from UNSD's Energy Statistics Database according to the 2006 IPCC guidelines (<https://www.ipcc-nggip.iges.or.jp/public/2006gl/>) and follow the reference approach, with the addition of the category Industrial Processes and Product Use – IPPU. For additional context, please refer to the table notes on <https://unstats.un.org/unsd/energystats/pubs/yearbook/2021/t04.pdf>.

Note (9), page 44 – World CO₂ emissions include international aviation and marine bunkers; conversely, bunkers are excluded from CO₂ emissions calculated for countries and regions. CO₂ emissions are calculated as the sum of emissions from coal, oil and natural gas, while emissions from gas flaring are not included. CO₂ emissions per capita are calculated by dividing CO₂ emissions by population. CO₂ emissions per GDP are calculated by dividing CO₂ emissions by GDP, PPP (constant 2017 international \$); it

corresponds to SDG indicator 9.4.1. CO₂ data in this publication are derived from the United Nations Energy Statistics Database, while for GDP PPP various sources have been used (see the section *Data sources*). Any discrepancies with the official indicator shall be attributed to the use of different sources for both CO₂ emissions and GDP PPP.

Energy balances

Note (10), page 46 - Transport includes international aviation and marine bunkers in the world balance, unlike for the regional balances.

Note (11), all balances, starting from page 46 - The category of which: *renewables* follows the convention used in the Energy Balances publication 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.

Indicators

Note (12), page 60 - World **total energy supply** includes international aviation and marine bunkers; conversely, bunkers are excluded from total energy supply calculated for countries and regions. **Energy use (TES) per capita** is calculated by dividing TES by population. **Energy intensity** is calculated by dividing total energy supply by GDP, PPP (constant 2017 international \$). It corresponds to SDG indicator 7.3.1. TES data in this publication are derived from the United Nations Energy Statistics Database, while for GDP PPP various sources have been used (see the section *Data sources*). Any discrepancies with the official indicator shall be attributed to the use of different sources for both TES and GDP PPP. **Energy self-sufficiency** is calculated as the ratio between primary energy production and total energy supply expressed in percentage. **Renewable share in TFEC** 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. Energy consumption data in this publication are derived from the United Nations Energy Statistics Database. Any discrepancies with the official indicator shall be attributed to the use of different sources. **Electricity consumption per capita** is calculated by dividing electricity consumption by population. **CO₂ per capita** is calculated by dividing CO₂ emissions by population. **CO₂ emissions per GDP** are calculated by dividing CO₂ emissions by GDP, PPP (constant 2017 international \$); it corresponds to SDG indicator 9.4.1. CO₂ data in this publication are derived from the United Nations Energy Statistics Database, while for GDP PPP various sources have been used (see the section *Data sources*). Any discrepancies with the official indicator shall be attributed to the use of different sources for both CO₂ emissions and GDP PPP.

Note (13), starting from page 60 - Energy intensity for this country is calculated using GDP PPP IMF data.

Note (14), page 67 – Energy intensity for this country is calculated using GDP PPP CHELEM data.

Note (15), starting from page 60 - Energy statistics for this country are partially covered by another country, therefore, indicators should be interpreted with caution.

See geographical notes at <https://unstats.un.org/unsd/energystats/pubs/yearbook/2021/05gn.pdf>.