

IEA Market Report Series Renewables 2023

Documentation

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Overview

This document provides information regarding the dataset for *Renewables 2023: Analysis and Forecast to 2028*.

This document is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city, or area. In this publication, 'country' refers to country, economy, or territory, as case may be.

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Renewable electricity

Geographical coverage

The following countries, regions and aggregates are covered in the electricity dataset.

Countries

Code region	Region
ARGENTINA	Argentina
AUSTRALI	Australia
BELGIUM	Belgium
BRAZIL	Brazil
CANADA	Canada
CHILE	Chile
CHINA	China
DENMARK	Denmark
ETHIOPIA	Ethiopia
FRANCE	France
GERMANY	Germany
INDIA	India
INDONESIA	Indonesia
ISRAEL	Israel
ITALY	Italy
JAPAN	Japan
KENYA	Kenya
KOREA	Korea
MEXICO	Mexico
MOROCCO	Morocco
NETHLAND	Netherlands
NIGERIA	Nigeria
PAKISTAN	Pakistan

Code region	Region
PHILIPPINE	Philippines
POLAND	Poland
RUSSIA	Russian Federation
SAUDIARABI	Saudi Arabia
SOUTHAFRIC	South Africa
SPAIN	Spain
SWEDEN	Sweden
TANZANIA	United Republic of Tanzania
THAILAND	Thailand
TURKEY	Türkiye
UAE	United Arab Emirates
UK	United Kingdom
UKRAINE	Ukraine
USA	United States
VIETNAM	Viet Nam

Regions and aggregates

Code region	Region	Definition
AFRICA	Africa	Includes Algeria, Angola, Benin, Botswana, Cameroon, Congo, DR Congo, Cote d'Ivoire, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Libya, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Other Africa, Senegal, South Africa, South Sudan, Sudan, Tanzania, Togo, Tunisia, Zambia, and Zimbabwe.
APAC	Asia (exc. China) and Pacific	Includes Australia, Bangladesh, Brunei Darussalam, Cambodia, India, Indonesia, Japan, Korea, Korea, DPR, Malaysia, Mongolia, Myanmar, Nepal, New Zealand, Other Asia, Pakistan, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand, and Viet Nam.
EURASIA	Eurasia	Includes Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Gibraltar, Kazakhstan, Kosovo, Kyrgyzstan, Montenegro, Republic of North Macedonia, Russia, Serbia, Tajikistan, Turkmenistan, and Uzbekistan.

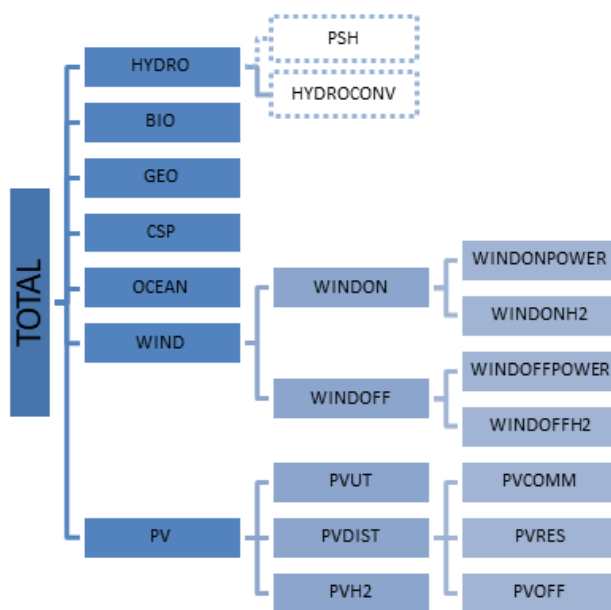
Code region	Region	Definition
EUROPE	Europe	Includes Austria, Belarus, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, United Kingdom, and Ukraine.
EU	European Union	Includes Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, and Sweden.
G20	G20	Includes Argentina, Australia, Brazil, Canada, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, People's Republic of China, Russian Federation, Saudi Arabia, South Africa, Türkiye, United Kingdom, United States, and the rest of EU countries
G7	G7	Includes Canada, France, Germany, Italy, Japan, United Kingdom, United States, and the rest of EU countries.
LAM	Latin America	Includes Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Curacao, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Other Latin America, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay and Venezuela.
MIDDLEEAST	Middle East	Includes Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, and Yemen.
MENA	Middle East and North Africa	Includes Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, and Yemen.
NAFR	North Africa	Includes Algeria, Egypt, Libya, Morocco, and Tunisia.

Code region	Region	Definition
NAM	North America	Includes Canada, Mexico, and United States.
SSAFR	Sub-Saharan Africa	Includes Angola, Benin, Botswana, Cameroon, Congo, DR Congo, Cote d'Ivoire, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Mauritius, Mozambique, Namibia, Niger, Nigeria, Other Africa, Senegal, South Africa, South Sudan, Sudan, Tanzania, Togo, Zambia, and Zimbabwe.
WORLD	World	Includes Albania, Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Benin, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Cambodia, Cameroon, Canada, Chile, China, Colombia, Congo, DR Congo, Costa Rica, Cote d'Ivoire, Croatia, Cuba, Curacao, Cyprus, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Eritrea, Estonia, Ethiopia, Finland, France, Gabon, Georgia, Germany, Ghana, Gibraltar, Greece, Guatemala, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea, Korea, DPR, Kosovo, Kuwait, Kyrgyzstan, Latvia, Lebanon, Libya, Lithuania, Luxembourg, Malaysia, Malta, Mauritius, Mexico, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, Nicaragua, Niger, Nigeria, Netherlands, Norway, New Zealand, Oman, Other Africa, Other Asia, Other Latin America, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Saudi Arabia, Senegal, Serbia, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sri Lanka, South Sudan, Sudan, Sweden, Switzerland, Syria, Chinese Taipei, Tajikistan, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Türkiye, Turkmenistan, United Arab Emirates, United Kingdom, Ukraine, Uruguay, United States, Uzbekistan, Venezuela, Viet Nam, Yemen, Zambia, and Zimbabwe.

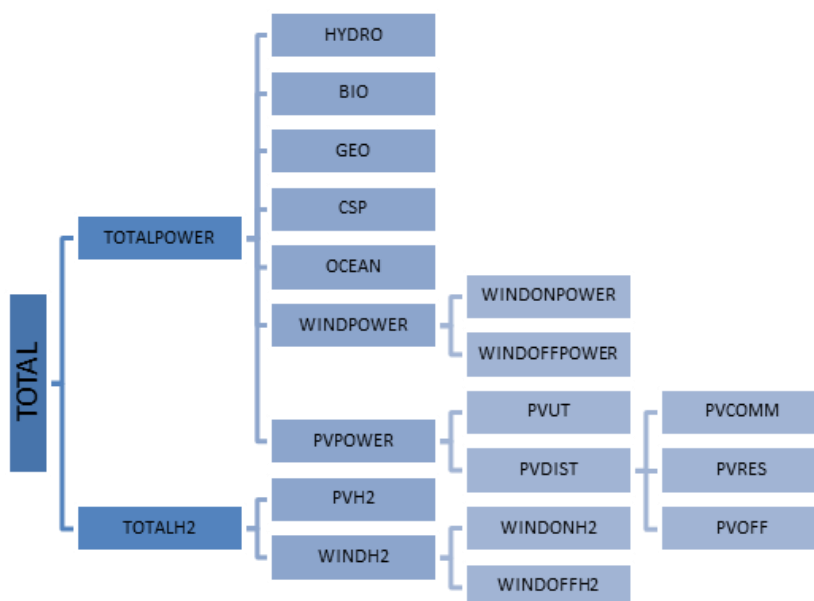
Technologies

The renewable electricity dataset includes 27 technology groupings, many made up of another sub-groupings. These are outlined in the graph and tables below.

Technology classification by technology



Technology classification by final use



Code Tech	Tech	Definition
BIO	Bioenergy	<p>Capacity includes capacity from solid, liquid, and gaseous biomass and municipal waste (renewable and non-renewable). It does not include plants that co-fire biomass with fossil fuels; though fossil fuel to biomass conversions is included in this forecast, reported capacity data from IEA statistics (2017 and earlier data points) may not include bioenergy capacity converted from fossil fuels, particularly in mixed plants.</p> <p>Generation from bioenergy includes generation from solid, liquid, and gaseous biomass (including co-fired biomass) and the renewable portion of municipal waste.</p>
HYDRO	Hydropower	<p>Capacity includes all types of hydropower.</p> <p>Generation excludes pumped storage hydropower.</p>
OCEAN	Ocean	This element includes wave, tide, and ocean technologies.
CSP	Concentrating solar power	
GEO	Geothermal	
PSH	Pumped storage hydropower	
PV	Solar PV	Capacity for grid-connected solar PV (including distributed PV) is counted at the time that the grid connection is made, and off-grid solar PV systems are included at the time of the installation.
PVCOMM	Commercial and industrial solar PV	Includes installations with capacity between 10 kW and 1 MW.

Code Tech	Tech	Definition
PVDIST	Distributed solar PV (<1 MW)	<p>Distributed capacity solar PV is classified into three main categories:</p> <ol style="list-style-type: none"> 1) residential (0 to 10 kW) 2) commercial and industrial (10 kW to 1,000 kW) 3) off-grid applications (such as solar home systems, small commercial applications, and mini-grids). <p>These groupings take not only size into account, but the purpose of the installation and the availability of data.</p>
PVH2	Solar PV dedicated to power generation for H2 production	Solar PV capacity for the sole intended use of hydrogen production.
PVOFF	Off-grid solar PV	This element includes applications such as solar home systems, small commercial applications, and mini grids.
PVPOWER	Solar PV dedicated to power generation for final use	
PVRES	Residential solar PV	Includes installations with capacity less than 10 kW
PVUT	Solar PV utility-scale	Includes installations with capacity higher than 1 MW
TOTAL	Total	Total renewable capacity and generation equals the sum of bioenergy, hydropower (including pumped storage for capacity), onshore and offshore wind, solar PV, solar CSP, geothermal, and ocean technologies.
TOTALH2	Total renewables dedicated to power	

Code Tech	Tech	Definition
	generation for H2 production	
TOTALPOWER	Total renewables dedicated to power generation for final use	
VRE	Variable renewable energy	This element equals the sum of PV and WIND
WIND	Wind	
WINDH2	Wind energy dedicated to power generation for H2 production	This
WINDOFF	Offshore wind	This element includes offshore wind capacity regardless of the final use of the electricity generated.
WINDOFFH2	Offshore wind dedicated to power generation for H2 production	Offshore wind capacity for the sole intended use of hydrogen production.
WINDOFFPOWER	Offshore wind dedicated to power generation for final use	
WINDON	Wind onshore	This element includes onshore wind capacity regardless of the final use of the electricity generated.
WINDONH2	Onshore wind dedicated to power generation for H2 production	Onshore wind capacity for the sole intended use of hydrogen production.

Code Tech	Tech	Definition
WINDONPOWER	Onshore wind dedicated to power generation for final use	
WINDPOWER	Wind energy dedicated to power generation for final use	

Time period

Data available from 1990 to 2028.

Cases

This dataset contains Main and Accelerated cases. The Main case is based on current policy and market conditions, while the Accelerated case assumes changes in the policy or market to address current challenges.

Sources

Renewable electricity generation data up to 2022, and capacity until 2021, for OECD countries is from Renewables Information 2023, at <https://www.iea.org/data-and-statistics/data-product/renewables-information>.

Renewable capacity data is based on a variety of sources that are technology dependent.

For hydropower, bioenergy, and geothermal, 2022 capacity is based largely upon S&P Market Intelligence (2023). For CSP, the 2022 capacity data is based largely upon NREL (2023) and BNEF (2023).

For solar PV, onshore wind, offshore wind, and ocean capacity, a variety sources are used ranging from the IEA Technology Collaboration Platforms, BNEF (2023), IRENA (2023) and in-country analysis and project pipelines.

Renewable transport

The renewable transport dataset includes biofuel production, consumption, and feedstock demand in the transport sector for 24 countries and 7 regions.

Geographical coverage

The following countries, regions and aggregates are covered in the transport dataset.

Countries

Code_Region	Region	Production and Consumption	Feedstocks
ARGENTINA	Argentina	X	X
AUSTRALI	Australia	X	
AUSTRIA	Austria	X	
BELGIUM	Belgium	X	
BRAZIL	Brazil	X	X
CANADA	Canada	X	X
CHINA	China	X	X
COLOMBIA	Colombia	X	X
FRANCE	France	X	X
GERMANY	Germany	X	X
HUNGARY	Hungary	X	
INDIA	India	X	X
INDONESIA	Indonesia	X	X
ITALY	Italy	X	
MALAYSIA	Malaysia	X	X
NETHLAND	Netherlands	X	X
PARAGUAY	Paraguay	X	
PHILIPPINE	Philippines	X	
POLAND	Poland	X	
SINGAPORE	Singapore	X	X

Code_Region	Region	Production and Consumption	Feedstocks
SPAIN	Spain	X	X
THAILAND	Thailand	X	X
UK	United Kingdom	X	
USA	United States	X	X

Regions and aggregates

Code region	Region	Definition
AFRICA	Africa	Includes Algeria, Angola, Benin, Botswana, Cameroon, Congo, DR Congo, Cote d'Ivoire, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Libya, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Other Africa, Senegal, South Africa, South Sudan, Sudan, Tanzania, Togo, Tunisia, Zambia, and Zimbabwe.
APAC	Asia and Pacific	Includes Australia, Bangladesh, Brunei Darussalam, Cambodia, China, India, Indonesia, Japan, Korea, Korea, DPR, Malaysia, Mongolia, Myanmar, Nepal, New Zealand, Other Asia, Pakistan, Philippines, Singapore, Sri Lanka, Chinese Taipei, Thailand, and Viet Nam.
EUROPE	Europe	Includes Austria, Belarus, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, United Kingdom, Ukraine.
LAM	Latin America	Includes Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Curacao, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua, Other Latin America, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay and Venezuela.
MIDDLEEAST	Middle East	Includes Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen.

Code region	Region	Definition
NAM	North America	Includes Canada, Mexico, and United States.
WORLD	World	Includes North America, Latin America, Europe, APAC, and Middle East. Albania, Algeria, Angola, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Benin, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Brunei Darussalam, Bulgaria, Cambodia, Cameroon, Canada, Chile, China, Colombia, Congo, DR Congo, Costa Rica, Cote d'Ivoire, Croatia, Cuba, Curacao, Cyprus, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Eritrea, Estonia, Ethiopia, Finland, France, Gabon, Georgia, Germany, Ghana, Gibraltar, Greece, Guatemala, Haiti, Honduras, Hong Kong, Hungary, Iceland, India, Indonesia, Iran, Iraq, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea, Korea, DPR, Kosovo, Kuwait, Kyrgyzstan, Latvia, Lebanon, Libya, Lithuania, Luxembourg, Malaysia, Malta, Mauritius, Mexico, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, Nicaragua, Niger, Nigeria, Netherlands, Norway, New Zealand, Oman, Other Africa, Other Asia, Other Latin America, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Saudi Arabia, Senegal, Serbia, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sri Lanka, South Sudan, Sudan, Sweden, Switzerland, Syria, Chinese Taipei, Tajikistan, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Türkiye, Turkmenistan, United Arab Emirates, United Kingdom, Ukraine, Uruguay, United States, Uzbekistan, Venezuela, Viet Nam, Yemen, Zambia, and Zimbabwe.

Products

The renewable transport dataset includes four biofuel products (ethanol, biodiesel, renewable diesel and biojet fuel) and five feedstocks (Sugars, starches, vegetable oils, fats, oils and greases and other residues).

Code Product	Product	Description
ETHANOL	Ethanol	Data presented in million litres per year. Ethanol has a calorific value of 21 MJ/litre.
BIODIESEL	Biodiesel	Data presented in million litres per year. Biodiesel has a calorific value of 33 MJ/litre.
RENEWABLED	Renewable diesel	Data presented in million litres per year. Renewable diesel has a calorific value of 34 MJ/litre.
BIOJET	Biojet	Data presented in million litres per year. Biojet fuel has a calorific value of 34 MJ/litre.
FOGS	Fats, oils and greases	Includes used cooking oil, animal fats and palm oil mill effluent (POME). Data presented in million tonnes per year.
OTHERRES	Other residues	Includes wood, agricultural, and municipal waste. Data presented in million tonnes per year.
STARCH	Starches	Includes maize, wheat, rice and cassava. Data presented in million tonnes per year.
SUGAR	Sugars	Includes sugar cane, B molasses, C molasses and sugar beets. Data presented in million tonnes per year.
VEGOILS	Vegetable Oils	Includes soyoil, canola oil, corn oil, palm oil and camelina. Data presented in million tonnes per year.

Flows

The renewable transport data set includes three flows, consumption, production and feedstocks.

Code Flow	Flows	Description
TES	Consumption	Includes biofuels used within the country in a given year.

Code Flow	Flows	Description
INDPROD	Production	Includes total domestic biofuel production in a given year.
FEEDSTOCKS	Feedstocks	Includes the mass of feedstocks required to support domestic production within a given country for a given year. Feedstocks include sugars, starches, vegetable oils, fats, oils and greases and other residues.

Time period

Data available from 2010 to 2028 for all products and flow

Cases

This dataset contains Main and Accelerated cases. The Main case is based on current policy and market conditions, while the Accelerated case assumes changes in the policy or market to address current challenges.

Sources

Sources include but are not limited to:

- Agência Nacional do Petróleo, Gás Natural e Biocombustíveis (2023) [Dados estatísticos](#)
- Argus (2023) [Argus direct](#).
- Cores (2023) [Estadísticas](#)
- Department of Transportation UK (2023) [Renewable Fuel Statistics](#)
- Drivkraft Sverige (2023) [Volumes](#)
- Energy Information Administration (2023) [Monthly Energy Review](#)
- IEA (2023) [World Energy Balances](#).
- Ministère de la Transition Écologique, 2023
- Ministerio de Economía - Argentina (2023) [Informes mensuales para los biocombustibles](#)
- S&P Global (2023) [Agribusiness](#)
- Statistics Canada, 2023 Monthly Table: 25-10-0081-01
- StatLine (2023) [Liquid biofuels for transport: supply, consumption and blending](#)
- Tilastokeskus (2023) [Liikenteen energiankulutus, 1990-2022](#)

Renewable heat

Geographical coverage

Countries

The following countries, regions and aggregates are covered in the heat dataset.

Code region	Region
BRAZIL	Brazil
CAN	Canada
CHINA	China
INDIA	India
JPN	Japan
RUS	Russian Federation
US	United States

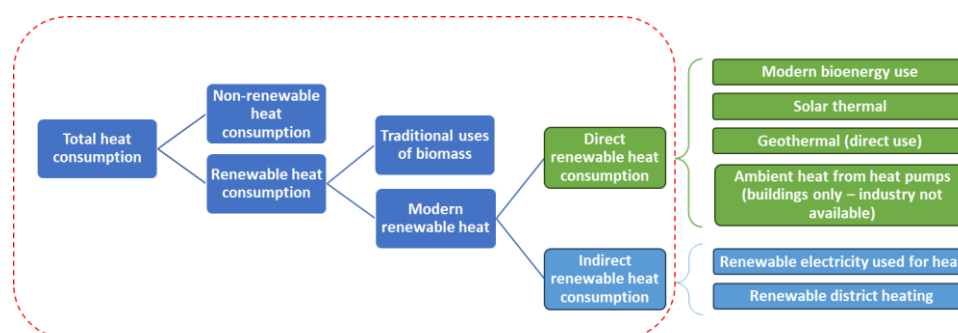
Regions and aggregates

Code region	Definition
World	Includes United States, Mexico, Canada, Argentina, Plurinational State Of Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Curacao/Netherlands Antilles, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Jamaica, Nicaragua Other Non-OECD Americas, Panama, Paraguay, Peru, Trinidad And Tobago, Uruguay, Venezuela, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, United Kingdom, Japan, Korea, New Zealand, Australia, Bangladesh, Brunei Darussalam, Cambodia, Chinese Taipei, India, Indonesia, Malaysia, Mongolia, Myanmar, Nepal, Democratic People's Republic Of Korea, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Viet Nam, Other Asia, Azerbaijan, Belarus, Bosnia And Herzegovina, Armenia, Georgia, Gibraltar, Kazakhstan, Kosovo, Kyrgyzstan, Republic Of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, Albania, North Macedonia, Montenegro, Serbia, Benin, Botswana, Cameroon, Angola, Congo, Democratic Republic Of

Code region	Definition
	The Congo, Eritrea, Ethiopia, Gabon, Ghana, Cote D'Ivoire, Kenya, Mauritius, Mozambique, Namibia, United Republic Of Tanzania, Niger, Nigeria, Senegal, South Africa, South Sudan, Sudan, Togo, Zambia, Zimbabwe, Other Africa, Islamic Republic Of Iran, Iraq, Jordan, Bahrain, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen, Israel, Algeria, Egypt, Morocco, Tunisia, Libya, People's Republic Of China and Hong Kong

European union	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, and Sweden.
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Flows



Code Tech	Definition
Total heat consumption (incl. traditional uses of biomass)	Refers to the total amount of renewable and non-renewable energy used for heat by industry, buildings, and agriculture sectors. It includes estimates of traditional uses of biomass, as well as estimates of ambient heat harnessed by heat pumps in the buildings sector. However, it excludes ambient heat harnessed by heat pumps in industry and district heating networks, for which data is not available.
Total non-renewable heat consumption	Refers to the total amount of non-renewable energy used for heat by industry, buildings, and agriculture sectors.
Total renewable heat consumption (incl. traditional uses of	Refers to the total amount of renewable energy used for heat by industry, buildings, and agriculture sectors. It includes:

Code Tech	Definition
biomass and indirect consumption)	<p>Direct consumption of solar thermal heat, geothermal heat and bioenergy for heat, as well as estimates of ambient heat harnessed by heat pumps in the buildings sector. Ambient heat from heat pumps in industry is not accounted for, due to unavailability of data.</p> <p>Indirect consumption of renewable energy through district heating networks and electricity used for heat. (Indirect consumption of renewable energy for heat is estimated based on the national shares of renewable sources in electricity generation and in district heating supplies.)</p> <p>Estimates of traditional uses of biomass.</p>
Modern renewable heat consumption (incl. indirect consumption)	<p>Refers to the total amount of renewable energy used for heat, excluding the traditional uses of biomass. It includes:</p> <p>Direct consumption of solar thermal, geothermal and bioenergy for heat, as well as estimates of ambient heat from heat pumps used in the buildings sector. However, it does not account for ambient heat from heat pumps in industry, for which data is not available.</p> <p>Indirect consumption of renewable energy through district heating networks and electricity used for heat. Indirect consumption of renewable energy for heat is estimated based on the national shares of renewable sources in electricity generation and in district heating supplies. Indirect consumption of ambient heat harnessed by heat pumps in district heating networks is not accounted for, as data is not available.</p>
Direct modern renewable heat consumption	<p>Includes direct consumption of bioenergy, solar thermal and geothermal heat as well as estimates of ambient heat harnessed by heat pumps in the buildings sector. However, it does not account for ambient heat from heat pumps in industry, for which data is not available.</p>
Indirect renewable heat consumption (renewable electricity for heat and renewable district heating and cooling)	<p>Includes renewable energy consumed through district heating networks and renewable electricity used for heat. These are estimated based on national shares of renewable sources in district heating supplies and electricity generation. It does not account for indirect consumption of ambient heat harnessed by heat pumps in district heating networks, for which data is not available.</p>

Code Tech	Definition
Share of modern renewables in heat	Corresponds to the ratio: $\frac{\text{Modern renewable heat consumption}}{\text{Total heat consumption (incl.traditional uses of biomass)}}$

Time period

Data available from 2015 to 2028

Sources

Sources include, but are not limited to:

- IEA, 2023World Energy Outlook 2023
- IEA 2023; World Energy Statistics and Balances