

# Household Appliances

Database documentation

June 2026 pilot edition

International  
Energy Agency

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# INTERNATIONAL ENERGY AGENCY

The IEA examines the full spectrum of energy issues including oil, gas and coal supply and demand, renewable energy technologies, electricity markets, energy efficiency, access to energy, demand side management and much more. Through its work, the IEA advocates policies that will enhance the reliability, affordability and sustainability of energy in its 32 Member countries, 13 Association countries and beyond.

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## IEA Member countries:

Australia  
Austria  
Belgium  
Canada  
Czech Republic  
Denmark  
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Finland  
France  
Germany  
Greece  
Hungary  
Ireland  
Italy  
Japan  
Korea  
Latvia  
Lithuania  
Luxembourg  
Mexico  
Netherlands  
New Zealand  
Norway  
Poland  
Portugal  
Slovak Republic  
Spain  
Sweden  
Switzerland  
Republic of Türkiye  
United Kingdom  
United States

The European Commission also participates in the work of the IEA

## IEA Accession countries:

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Chile  
Colombia  
Costa Rica  
Israel  
Romania

## IEA Association countries:

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China  
Egypt  
India  
Indonesia  
Kenya  
Morocco  
Senegal  
Singapore  
South Africa  
Thailand  
Ukraine  
Viet Nam

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Website: [www.iea.org](http://www.iea.org)



This document provides information regarding the June pilot 2026 edition of the *Household Appliances database*. Information on this product can be found at: <https://www.iea.org/data-and-statistics/data-product/household-appliances-database>.

The Household Appliances database provides annual data on stock, diffusion and penetration of selected household appliances, including air conditioners, clothes dryers, clothes washers, dish washers, freezers, refrigerator/freezer combinations, refrigerators, personal computers and televisions. Data availability is uneven across countries, with gaps in time series and, in some cases, only a limited number of observations available for specific appliances or years.

The dataset aims to offer global coverage where data are available integrating information from the [IEA Energy End-uses and Efficiency Indicators database](#) with additional sources obtained via desk research. It enables cross-country comparisons and tracking of trends in the uptake of key household appliances.

This is the first edition of the Household Appliances database. Users are encouraged to provide feedback on data quality and to suggest additional data sources that could help improve coverage and robustness of the database over time.

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.

Please address your inquiries to [EnergyIndicators@iea.org](mailto:EnergyIndicators@iea.org).

*Please note that all IEA data are subject to the following Terms and Conditions found on the IEA's website: <https://www.iea.org/terms>.*

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# Database description

The *Household Appliances* database is available in Excel format and includes annual data for the following countries: 31 IEA Member countries; 89 countries and economies beyond IEA including 12 association countries and 5 accession countries.

The data cover the interval 2000-2024, but data availability is uneven across countries, with gaps in time series and, in some cases, only a limited number of observations available for specific appliances or years.

## Geographical coverage

In the current edition, the database includes the diffusion, penetration and stocks of household appliances for 120 countries, namely:

- thirty-one IEA Members;
- twelve IEA association countries (Argentina, People's Republic of China, Egypt, India, Indonesia, Kenya, Morocco, Senegal, South Africa, Thailand, Ukraine and Viet Nam);
- five OECD countries seeking full accession to the IEA (Brazil, Chile, Colombia, Costa Rica and Romania);
- 72 countries beyond IEA family (Albania, Algeria, Angola, Armenia, Azerbaijan, Bangladesh, Belarus, Benin, Plurinational State of Bolivia, Bulgaria, Cambodia, Cameroon, Republic of the Congo, Democratic Republic of the Congo, Cote d'Ivoire, Croatia, Cuba, Cyprus, Dominican Republic, Eritrea, Kingdom of Eswatini, Ethiopia, Gabon, Georgia, Ghana, Guatemala, Guyana, Haiti, Honduras, Iraq, Jamaica, Jordan, Kazakhstan, Democratic People's Republic of Korea, Kyrgyzstan, Lao People's Democratic Republic, Madagascar, Malaysia, Malta, Republic of Moldova, Mongolia, Montenegro, Mozambique, Myanmar, Namibia, Nepal, Nicaragua, Niger, Nigeria, Republic of North Macedonia, Pakistan, Paraguay, Peru, Philippines, Russian Federation, Rwanda, Serbia, Slovenia, Sri Lanka, Sudan, Surinam, Tajikistan, United Republic of Tanzania, Togo, Trinidad and Tobago, Tunisia, Turkmenistan, Uganda, Uzbekistan, Yemen, Zambia, Zimbabwe).

## Geographical divisions

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.

Country	COUNTRY
Albania	ALBANIA
Algeria	ALGERIA
Angola	ANGOLA
Argentina	ARGENTINA
Armenia	ARMENIA
Australia	AUSTRALIA
Austria	AUSTRIA
Azerbaijan	AZERBAIJAN
Bangladesh	BANGLADESH
Belarus	BELARUS
Belgium	BELGIUM
Benin	BENIN
Plurinational State of Bolivia	BOLIVIA
Brazil	BRAZIL
Bulgaria	BULGARIA
Cambodia	CAMBODIA
Cameroon	CAMEROON
Canada	CANADA
People's Republic of China	CHINA
Chile	CHILE

Colombia	COLOMBIA
Republic of the Congo	CONGO_REPUB
Democratic Republic of the Congo	CONGO_DRC
Costa Rica	COSTARICA
Cote d'Ivoire	COTEIVOIRE
Croatia	CROATIA
Cuba	CUBA
Cyprus	CYPRUS
Czech Republic	CZECH
Denmark	DENMARK
Dominican Republic	DOMINICANREP
Egypt	EGYPT
Eritrea	ERITREA
Estonia	ESTONIA
Kingdom of Eswatini	ESWATINI
Ethiopia	ETHIOPIA
Finland	FINLAND
France	FRANCE
Gabon	GABON
Georgia	GEORGIA
Germany	GERMANY
Ghana	GHANA
Greece	GREECE
Guatemala	GUATEMALA
Guyana	GUYANA
Haiti	HAITI
Honduras	HONDURAS
Hungary	HUNGARY

India	INDIA
Indonesia	INDONESIA
Iraq	IRAQ
Ireland	IRELAND
Italy	ITALY
Jamaica	JAMAICA
Japan	JAPAN
Jordan	JORDAN
Kazakhstan	KAZAKHSTAN
Kenya	KENYA
Korea	KOREA
Democratic People's Republic of Korea	KOREADPR
Kyrgyzstan	KYRGYZSTAN
Lao People's Democratic Republic	LAO
Latvia	LATVIA
Lithuania	LITHUANIA
Luxembourg	LUXEMBOURG
Madagascar	MADAGASCAR
Malaysia	MALAYSIA
Malta	MALTA
Mexico	MEXICO
Republic of Moldova	MOLDOVA
Mongolia	MONGOLIA
Montenegro	MONTENEGRO
Morocco	MOROCCO
Mozambique	MOZAMBIQUE
Myanmar	MYANMAR
Namibia	NAMIBIA

Nepal	NEPAL
Netherlands	NETHERLANDS
Nicaragua	NICARAGUA
Niger	NIGER
Nigeria	NIGERIA
Republic of North Macedonia	NORTHMACED
New Zealand	NEWZEALAND
Pakistan	PAKISTAN
Paraguay	PARAGUAY
Peru	PERU
Philippines	PHILIPPINES
Poland	POLAND
Portugal	PORTUGAL
Romania	ROMANIA
Russian Federation	RUSSIA
Rwanda	RWANDA
Senegal	SENEGAL
Serbia	SERBIA
Slovak Republic	SLOVAKIA
Slovenia	SLOVENIA
South Africa	SOUTHAFRICA
Spain	SPAIN
Sri Lanka	SRILANKA
Sudan	SUDAN
Suriname	SURINAME
Sweden	SWEDEN
Switzerland	SWITZERLAND
Tajikistan	TAJIKISTAN

United Republic of Tanzania	TANZANIA
Thailand	THAILAND
Togo	TOGO
Trinidad and Tobago	TRINIDAD
Tunisia	TUNISIA
Republic of Turkiye	TURKIYE
Turkmenistan	TURKMENISTAN
Uganda	UGANDA
United Kingdom	UK
Ukraine	UKRAINE
United States	USA
Uzbekistan	UZBEKISTAN
Viet Nam	VIETNAM
Yemen	YEMEN
Zambia	ZAMBIA
Zimbabwe	ZIMBABWE

## Excel version

The Excel version of the Household Appliances database provides access to the data through two interactive timeseries views, supported by the underlying long-format dataset.

### How to use it

The Excel file includes:

- 2 interactive worksheets with ready-made timeseries tables for exploring the data by different entry points;
- 1 data worksheet containing the full underlying dataset in long format.

The interactive worksheets allow users to explore the dataset in a straightforward way through selection menus located at the left of each sheet:

- In by Country, users can select a country and automatically display the available household appliance indicators over time for that country.
- In by Metric and by End Use, users can select a flow and a product and automatically display the available data by country across time.

These interactive sheets are based on pivot-style timeseries tables. In each case, the selected item determines the content shown in the table, while years are displayed across columns and the corresponding products, flows or countries are displayed in rows. Its main purpose is to support direct exploration of the data and quick access to the underlying values.

The workbook also includes a Data sheet containing the full database in long format. This sheet can be used for additional filtering, sorting and extraction of the source values presented in the interactive views.

Supporting sheets provide contextual information on the scope of the database and on the definitions of the main indicators used in the file.

## Database tabs

<b>by Metric and by End Use</b>	Time series featuring household appliances by flow and by appliance type (3 metrics, 9 appliance types)
<b>by Country</b>	Time series featuring diffusion of household appliances by country (120 countries)
<b>Data</b>	Long data format presenting full dataset (6 column)

# Structure of the database

In the .Stat Suit Explorer as in the Excel publication files mirrors the structure of the [IEA Energy End-uses and Efficiency Indicators database](#). A data row is captured through the selection of three items: Measure, Metric and End Use. This structure allows to publish in a limited amount of files data of different nature such as activity and indicators data. These correspond to a segmentation of data, as follows:

- **Measure:** which can assume the following values Activity or Indicator.
- **Metric:** is used to specify the Metric in the Measure Activity and Indicators. There are two Activity Metrics (Stocks and Penetration) and one Indicator metrics (Diffusion) in this database.
- **End Use:** which represents the end use (appliance types).

The data refer to one sectoral file (Residential sector). For more information please refer to the [IEA Energy End-uses and Efficiency Indicators database documentation](#).

## Category definitions

The dimension *Measure* allows to distinguish the following two type of data points:

### Measures

Measure	MEASURE	Definition
Activity	ACTIVITY	It includes the activity data, particularly: Stocks and Penetration.
Indicator	INDICATOR	It includes the indicators defined in the METRIC dimension, particularly: Diffusion.

## Metrics definitions

The dimension *Metric* allows to distinguish the following two type of data points:

### Metrics

Metric	METRIC	Definition
Diffusion	DIFFUSION	<p>Average number of appliances per occupied dwelling, reflecting the spread of a technology across the dwellings. It is calculated as:</p> <p>numerator – Number of appliances in occupied dwellings / denominator – Number of occupied dwellings.</p> <p>In cases where data on occupied dwellings are not available, the indicator may refer to the total number of dwellings.</p>
Penetration	PENETRATION	<p>Percentage of households possessing various household items calculated as:</p> <p>numerator - Number of households possessing various household effects / denominator - Number of households.</p> <p>In some cases, the data may represent the percentage of population with access to these goods. In the cases that the two figures are available, the percentage of households is taken. If only the percentage of population is available, this is captured in the country notes. When it is not specified, it is assumed that it represents the percentage of households.</p>
Stocks (million units)	STOCKS	Stock of appliances within occupied dwellings.

## End-use definitions

The technologies included in this dataset can be classified as household appliances. This dimension models the type of durable goods that will be quantified in the database based on different indicators. The current version of the database captured data is limited to the most common home appliances. It is important to notice that in many cases it is not possible to verify the adherence of national data definitions to this list of definitions.

### End uses (Household Appliances)

End-use	ENDUSE	Definition
Air conditioners	AC	Air conditioners is an equipment used to treat air for space cooling purposes including air conditioners which are reversible and therefore can also be used for heating purposes. Air conditioners do not include fans and household appliance refrigeration (e.g. refrigerators, freezers...).
Refrigerators	REFRIG	Refrigerator can be defined as a box, room, or cabinet in which food, drink, etc., are kept cool by means of ice or mechanical refrigeration.
Freezers	FREEZER	Freezers can be defined as a box, room, or cabinet held at or below 0°C (32°F).
Refrigerator/freezer combinations	REFFREEZ	Refrigerator/Freezer combinations are single appliances that have both a refrigerator and a freezer compartment.
Clothes washers	CLOTH_WASH	Clothes washers, also known as washing machines, are appliances for washing clothing, linens, etc.
Dish washers	DISH_WASH	Dish washer is a machine for washing dishes, kitchen utensils, etc., automatically.
Clothes dryers	CLOTH_DRY	Clothes dryers are appliances used to dry clothing, linens, etc.
Televisions	TV	Televisions, also including home entertainment devices. When there are data on colour television and black and white television, only the colour television is considered for the statistics.
PC	PERSONALCOMP	Personal Computers, also including other information technology devices.

# Methodological notes

## The Household Appliances data collection

In 2009, IEA members committed to collect energy end-uses and efficiency indicators data through a new annual questionnaire. The questionnaire collects energy consumption and activity data for various end-uses, sub-sectors and modes/vehicle types across the four sectors: residential, services, industry and transport. In particular, it gathers information on household appliance stocks and diffusion. The questionnaire is available online at the IEA web page: <https://www.iea.org/about/data-and-statistics/questionnaires>.

In 2024, the IEA has expanded the collection and compilation of household appliances data for selected countries beyond IEA members. This work draws on a range of national and international data sources, including contributions from national statistical offices and data derived from household surveys, such as household living conditions surveys and demographic and health surveys. These complementary sources enhance the geographical coverage of the dataset.

The resulting dataset is released as a *Household Appliances database*, reflecting ongoing efforts to improve data availability, coverage and methodological consistency in this area.

This is the first edition of the Household Appliances database. Users are encouraged to provide feedback on data quality and to suggest additional data sources that could help improve coverage and robustness of the database over time.

The IEA also developed a manual on energy efficiency data and indicators, [Energy Efficiency Indicators: Fundamentals on Statistics](#); and one on how to use indicators to inform policies, [Energy Efficiency Indicators: Essentials for Policy Making](#), both of which can be downloaded from the IEA web page.

## Notes on data quality

Data, where available in the IEA Energy end-uses and efficiency indicators database, are derived from this source and included in the household appliances database. For further details on the data and their quality, please

refer to the [Energy end-uses and efficiency indicators Database documentation](#).

In other cases, data are directly collected and replicated from original sources. Only a limited number of values are estimated by the IEA based on these same sources. Where this is the case, it is indicated in the country's metadata.

## Sources and methods

The detail on data sources is described in the Country notes section. Where available, data are obtained from the *IEA Energy end-uses and efficiency indicators database* and complemented with data from other sources obtained via desk research from the publications of the national statistics offices. Other very relevant source are publications and datasets obtained from the Demographic and Health Surveys (DHS) Program website (<https://dhsprogram.com/>).

# Country notes

## IEA Member countries

### *Sources:*

Please refer to the documentation of the [IEA Energy end-uses and efficiency indicators database](#).

## Accession countries

### Brazil

#### *Sources*

*Pesquisa Nacional por Amostra de Domicílios Contínua (Continuous National Household Sample Survey) (various editions)*, Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics), Rio de Janeiro.

*Pesquisa Nacional por Amostra de Domicílios (National Household Sample Survey) (various editions)*, Instituto Brasileiro de Geografia e Estatística (Brazilian Institute of Geography and Statistics), Rio de Janeiro.

*Demographic and Health Surveys (various editions)*, Sociedade Civil Bem-Estar Familiar no Brasil (Civil Society, Family Well-being in Brazil) and ICF/Macro International, Rio de Janeiro.

#### *Appliances*

In 2015, Brazil replaced the Pesquisa Nacional por Amostra de Domicílios (PNAD) for a new survey that is carried out more regularly, Pesquisa Nacional por Amostra de Domicílios Contínua. This new survey does not capture all the scope of the former PNAD. For this reason, there might be a break in the time series between 2014 and 2015.

From 2006 data onwards, penetration of refrigerators refers to refrigerators and combo freezers-refrigerators.

In 2022, a new survey weighting method of the continuous PNAD has been implemented. Historical series have also been adjusted. Revised values until 2016 are included.

## Chile

### *Sources*

Please refer to the documentation of the [IEA Energy end-uses and efficiency indicators database](#).

## Colombia

### *Sources*

*Encuesta Nacional de Calidad de Vida (National Quality of Life Survey) (various editions)*, Departamento Administrativo Nacional de Estadística (National Administrative Department of Statistics), Bogotá.

*Encuesta Nacional de Demografía y Salud (National Demographic and Health Survey) (various editions)*, Profamilia and ICF/Macro International, Bogotá.

### *Appliances*

There is a jump in households appliances penetration for 2017 due to different survey coverage for rural areas.

## Costa Rica

### *Sources*

*Encuesta de Mujeres, Niñez y Adolescencia (Survey of Women, Children and Adolescents) 2018*, National Institute of Statistics and Census (INEC), Ministry of Health (MS), United Nations Children's Fund (UNICEF), 2020, San José.

## Romania

### *Sources*

Please refer to the documentation of the [IEA Energy end-uses and efficiency indicators database](#).

## Association countries

### Argentina

#### *Sources*

*Encuesta Nacional de Gastos de los Hogares (National Household Expenditure Survey) (various editions)*, Instituto Nacional de Estadística y Censos (National Institute of Statistics and Censuses), Buenos Aires.

*Encuesta Nacional de Niñas, Niños y Adolescentes (National Survey of Girls, Boys and Adolescents) 2019-2020*, United Nations Children's Fund (UNICEF), National Council for the Coordination of Social Policies, 2021, Buenos Aires.

#### *Appliances*

The category combo freezers-refrigerators includes combo freezers-refrigerators and freezers.

Room air conditioners correspond to air conditioning units mounted in windows.

### People's Republic of China

#### *Sources*

*China Statistical Yearbook (various editions)*, National Bureau of Statistics, Beijing.

#### *Appliances*

Ownership data were recalculated into stock estimates.

### Egypt

#### *Sources*

*Egypt Demographic and Health Surveys (various editions)*, Ministry of Health and Population and ICF/Macro International, Cairo.

*Demographic and Health Surveys (various editions)*, Ministry of Health and Population, National Population Council and ICF/Macro International, Cairo.

## India

### *Sources*

*India National Family Health Survey (various editions)*, International Institute for Population Sciences and IFC/Macro International, Mumbai.

*Household Consumption Expenditure Survey (various editions)*, Ministry of Statistics and Programme Implementation, 2026, Mumbai

### *Appliances*

Air Conditioner penetration value in 2023 represents the share of households owning either an air conditioner or an air cooler.

## Indonesia

### *Sources*

*Indonesia Demographic and Health Surveys (various editions)*, National Population and Family Planning Board, Statistics Indonesia, Ministry of Health and ICF/Macro International, Jakarta.

## Kenya

### *Sources*

*Demographic and Health Surveys (various editions)*, Kenya National Bureau of Statistics, Ministry of Health and IFC/Macro International, Nairobi.

*Demographic and Health Surveys (various editions)*, National Council for Population and Development, Central Bureau of Statistics, Office of the Vice President and Ministry of Planning and National Development and IFC/Macro International, Nairobi.

## Morocco

### *Sources*

*Demographic and Health Surveys (various editions)*, Ministère de la Santé (Ministry of Health) and Macro International, Rabat.

## Senegal

### Sources

*Enquête sur la Population et la Santé Familiale (Population and Family Health Survey) (various editions)*, Agence Nationale de la Statistique et de la Démographie (National Agency for Statistics and Demography) and ICF International, Dakar.

*Enquête Démographique et de Santé Continue (Ongoing Demographic and Health Survey (various editions)*, Agence Nationale de la Statistique et de la Démographie (National Agency for Statistics and Demography) and ICF International, Dakar.

*Enquête Démographique et de Santé (Demographic and Health Survey) (various editions)*, Ministère de la Santé (Ministry of Health) and Macro International, Dakar.

*Enquête Démographique et de Santé (Demographic and Health Survey) (various editions)*, Ministère de l'Economie, des Finances et du Plan (Ministry of Economy, Finance and Planning) and Macro International, Dakar.

## South Africa

### Sources

*General Household Survey (various editions)*, Statistics South Africa, Pretoria.

*South Africa Demographic and Health Surveys (various editions)*, National Department of Health and ICF/Macro International, Pretoria.

### Appliances

The data for penetration of air conditioners, freezers, dishwashers and dryers between 2012 and 2019 was calculated by the IEA based on data from the General Household Survey reports.

## Thailand

### Sources

*Multiple Indicator Cluster Surveys (various editions)*, National Statistics Office, 2008, Bangkok.

## *Appliances*

The category refrigerators up to 2022 data includes refrigerators and combo freezers-refrigerators.

## Ukraine

### *Sources*

*Ukraine Demographic and Health Surveys 2007*, Ukrainian Centre for Social Reforms, State Statistical Committee, Ministry of Health and Macro International, 2008, Kyiv.

## Viet Nam

### *Sources*

*Vietnam Demographic and Health Survey 2002*, Committee for Population, Family and Children and Macro International, 2003, Ha Noi.

*Viet Nam Demographic and Health Survey 1999*, National Committee for Population and Family Planning, 1997, Ha Noi.

*Viet Nam Multiple Indicator Cluster Survey (various editions)*, General Statistics Office (GSO) of Viet Nam, United Nations Children's Fund (UNICEF) Viet Nam Country Office, United Nations Population Fund (UNFPA), Ha Noi.

## Other countries beyond the IEA

### Albania

#### *Sources*

*Albania Demographic and Health Survey (various editions)*, Institute of Statistics, Institute of Public Health and ICF/Macro International, Triana.

### Algeria

#### *Sources*

*Algerie Enquête par grappes à indicateurs multiples (Algeria Multiple Indicator Cluster Survey) 2019*, Ministry of Health, Population and Hospital Reform, United Nations Children's Fund (UNICEF), United Nations Population Fund (UNFPA), 2020, Algiers.

### Angola

#### *Sources*

*Inquérito de Indicadores Múltiplos e de Saúde (Multiple Indicator and Health Survey) 2015-2016*, Instituto Nacional de Estatística (National Institute of Statistics), Ministério da Saúde (Ministry of Health) and ICF International, 2017, Luanda.

*Angola Malaria Indicator Survey (various editions)*, Ministry of Health and ICF International, Luanda.

### Armenia

#### *Sources*

*Armenia Demographic and Health Survey (various editions)*, National Statistical Service, Ministry of Health and ICF/Macro International, Yerevan.

### Azerbaijan

#### *Sources*

*Azerbaijan Demographic and Health Survey 2006*, State Statistical Committee and Macro International, 2008, Baku.

*The Republic of Azerbaijan Multiple Indicator Cluster Survey 2023*, Government of Azerbaijan, United Nations Children's Fund (UNICEF), European Union, United Nations Population Fund (UNFPA), 2024, Baku.

*EV TƏSƏRRÜFATLARI TƏDQİQATININ ƏSAS YEKUNLARI (Main Conclusions of the Household Research) (various editions)*, State Statistical Committee of the Republic of the Azerbaijan, Baku.

## Bangladesh

### Sources

*Bangladesh Demographic and Health Survey 2017-18*, National Institute of Population Research and Training and ICF/Macro International, 2020, Dhaka.

*Bangladesh Demographic and Health Survey*, National Institute of Population Research and Training, Mitra and Associates, and ICF/Macro International, Dhaka.

*Progotir Pathey (Path of progress) Bangladesh Multiple Indicator Cluster Survey (various editions)*, Bangladesh Bureau of Statistics (BBS), United Nations Children's Fund (UNICEF), United Nations Population Fund (UNFPA) Bangladesh, Dhaka.

## Belarus

### Sources

*Republic of Belarus Multiple Indicator Cluster Survey 2019*, National Statistical Committee of Republic of Belarus, United Nations Children's Fund (UNICEF), European Union, World Bank, Russian Federation, United Nations Office on Drugs and Crime, 2019, Minsk City.

*National Statistical Committee of the Republic of Belarus (2026), Demographics and social statistics, [Households with durable goods](#)*, (accessed 8 April 2026).

## Benin

### Sources

*Bénin Enquête Démographique et de Santé (Benin Demographic and Health Survey) (various editions)*, Institut National de la Statistique et de l'Analyse Économique (National Institute of Statistics and Economic Analysis) and ICF/Macro International, Cotonou.

*Enquête par grappes à indicateurs multiples (MICS) (Multiple Indicator Cluster Survey) (various editions)*, National Institute of Statistics and Demography (INStAD), National Institute of Statistics and Economic Analysis (INSAE), Government of Benin, United Nations Children's Fund (UNFPA), United States Agency for International Development (USAID), World Bank, Belgian Development Agency (ENABEL), International Labour Organization (ILO), 2023, Cotonou.

## Plurinational State of Bolivia

### Sources

*Bolivia Encuesta Nacional de Demografía y Salud (Bolivia National Demographic and Health Survey) (various editions)*, Ministerio de Salud y Deportes (Ministry of Health and Sports), Instituto Nacional de Estadística (National Institute of Statistics) and Macro International, La Paz.

*Bolivia Encuesta Nacional de Demografía y Salud (Bolivia National Demographic and Health Survey) (various editions)*, Instituto Nacional de Estadística (National Institute of Statistics) and Macro International, La Paz.

## Bulgaria

### Sources

National Statistical Institute (2026), Demographics and social statistics, [Availability of durables](#) (accessed 5 June 2026).

## Cambodia

### Sources

*Cambodia Demographic and Health Survey 2021–22*, National Institute of Statistics, Ministry of Health and ICF International, 2023, Phnom Penh.

*Cambodia Demographic and Health Survey (various editions)*, National Institute of Statistics, Directorate General for Health and ICF/Macro International, Phnom Penh.

*Cambodia Socio-Economic Survey (various editions)*, National Institute of Statistics Ministry of Planning, Phnom Penh.

## Cameroon

### Sources

*Enquête Démographique et de Santé (Demographic and Health Survey) (various editions)*, Institut National de la Statistique (National Institute of Statistics), Ministère de la Santé Publique (Ministry of Public Health ) and ICF International, Yaoundé.

*Enquête Démographique et de Santé 1998 (Demographic and Health Survey 1998)*, Bureau Central des Recensements et des Études de Population (Central Bureau of Censuses and Population Studies), Ministère des Investissements Publics et de l'Aménagement du Territoire (Ministry of Public Investment and Territorial Development) and Macro International, 1999, Yaoundé.

*Enquête Démographique et de Santé 1991 (Demographic and Health Survey 1991)*, Direction Nationale du Deuxième Recensement Général de la Population et de l'Habitat (National Directorate of the Second General Population and Housing Census) and Macro International, 1992, Yaoundé.

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## Republic of Congo

### Sources

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## Democratic Republic of Congo

### Sources

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## Cote d'Ivoire

### Sources

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*Enquête sur les Indicateurs du Sida, Côte d'Ivoire 2005, (Survey on AIDS Indicators, Côte d'Ivoire 2005)* Institut National de la Statistique (National Institute of Statistics), Ministère de la Lutte contre le Sida (Ministry of the Fight Against AIDS) and Macro International, 2006, Abidjan.

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### Appliances

The Multiple Indicator Cluster Survey penetration rates of refrigerator and freezer are combined and reported as the penetration rate of refrigerator.

## Cuba

### Sources

*Encuesta de Indicadores Múltiples por Conglomerados (Multiple Indicator Cluster Survey) 2019*, Ministry of Public Health, United Nations Children's Fund (UNICEF), 2020, Havana.

## Cyprus

### Sources

Please refer to the documentation of the [IEA Energy end-uses and efficiency indicators database](#).

## Dominican Republic

### Sources

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## Eritrea

### Sources

*Eritrea Demographic and Health Survey 2002*, National Statistics and Evaluation Office and Macro International, 2003, Asmara.

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## Eswatini

### Sources

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## Ethiopia

### Sources

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## Gabon

### Sources

*Enquête Démographique et de Santé au Gabon (Demographic and Health Survey in Gabon) (various editions)*, Direction Générale de la Statistique (Directorate General of Statistics) and ICF International, Libreville.

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## Georgia

### Sources

*Georgia Multiple Indicator Cluster Survey 2018-2019*, National Statistics Office of Georgia, United Nations Children's Fund (UNICEF), National Center for disease Control and Public Health (NCDC), United States Agency for International Development (USAID), World Bank, United Nations Population Fund (UNFPA), Swedish International Development Cooperation Agency (SIDA), French Development Agency (AFD), Swiss Agency for development and cooperation (SDC), Italian National Institute of Health (ISS), United Nations Development Programme (UNDP), World Health Organization (WHO), 2019, Tbilisi.

## Ghana

### Sources

*Ghana Demographic and Health Survey (various editions)*, Ghana Statistical Service and ICF/Macro International, Accra.

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## Guatemala

### Sources

*Encuesta Nacional de Salud Materno Infantil 2014-2015: Informe Final (National Survey of Maternal and Child Health 2014-2015: Final Report)*, Ministerio de Salud

Pública y Asistencia Social (Ministry of Public Health and Social Assistance), Instituto Nacional de Estadística (National Institute of Statistics), Secretaría de Planificación y Programación del la Presidencia (Secretariat of Planning and Programming of the Presidency) and ICF International, 2017, Guatemala City.

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## Guyana

### Sources

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*Guyana HIV/AIDS Indicator Survey 2005*, Ministry of Health, Guyana Responsible Parenthood Association and ICF/Macro International, 2006, Georgetown.

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## Haiti

### Sources

*Enquête Mortalité, Morbidité et Utilisation des Services 2016-2017 (Mortality, Morbidity and Service Utilisation Survey 2016-2017)*, Institut Haïtien de l'Enfance (Haitian Institute for Children) and ICF International, 2018, Pétiion-Ville.

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### Sources

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## Iraq

### Sources

*Iraq Multiple Indicator Cluster Survey 2018*, Central Statistical Organisation (CSO), Kurdistan Region Statistical Office (KRSO), Ministry of Health, United Nations Children's Fund (UNICEF), 2019, Baghdad.

## Jamaica

### Sources

*Jamaica Multiple Indicator Cluster Survey 2022*, Planning Institute of Jamaica (PIOJ), United Nations Children's Fund (UNICEF), Inter-American Development Bank (IDB), Statistical Institute of Jamaica (STATIN), 2024, Kingston.

## Jordan

### Sources

*Jordan Population and Family Health Survey (various editions)*, Department of Statistics and ICF/Macro International, Amman.

## Kazakhstan

### Sources

*Kazakhstan Demographic and Health Survey 1999*, Academy of Preventive Medicine and Macro International, 1999, Almaty.

*Kazakhstan Demographic and Health Survey 1995*, National Institute of Nutrition, Academy of Preventive Medicine and Macro International, 1996, Almaty.

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## Korea (Democratic People's Republic of)

### Sources

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## Kyrgyzstan

### Sources

*Kyrgyz Republic Demographic and Health Survey 2012*, National Statistical Committee of the Kyrgyz Republic, Ministry of Health and ICF International, 2013, Bishkek.

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### Appliances

Penetration of washing machines from 2014 only accounts for automatic washing machine.

## Lao People's Democratic Republic

### Sources

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## Madagascar

### Sources

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## Malaysia

### *Sources*

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## Malta

### *Sources:*

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## Republic of Moldova

### *Sources*

*Moldova Demographic and Health Survey 2005*, National Scientific and Applied Centre for Preventive Medicine and Macro International, 2006, Chisinau.

## Mongolia

### *Sources*

*Mongolia Social Indicator Sample Survey (various editions)*, National Statistical Office, United Nations Children's Fund (UNICEF) United Nations Population Fund (UNFPA), Ulaanbaatar.

### *Appliances*

Penetration of washing machines includes 12.7% penetration of automatic washing machines and 61.5% of semi-automatic washing machines.

## Montenegro

### *Sources*

*Montenegro and Montenegro Roma Settlements Multiple Indicator Cluster Survey (various editions)*, Statistical Office of Montenegro (MONSTAT), United Nations Children's Fund (UNICEF), Government of Montenegro, United Nations High Commissioner for Refugees (UNHCR), Podgorica.

## Mozambique

### Sources

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## Myanmar

### Sources

*Myanmar Demographic and Health Survey 2015-16*, Ministry of Health and Sports and ICF International, 2017, Nay Pyi Taw.

## Namibia

### Sources

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## Nepal

### Sources

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## Nicaragua

### Sources

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## Niger

### Sources

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*Enquête Démographique et de Santé et à Indicateurs Multiples du Niger (Niger Demographic and Health Survey and Multiple Indicator Cluster Survey) (various editions)*, Institut National de la Statistique (National Institute of Statistics) and ICF International, Niamey.

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## Nigeria

### *Sources*

*Nigeria Demographic and Health Survey (various editions)*, National Population Commission and ICF/Macro International, Abuja.

*Nigeria Demographic and Health Survey 1990*, Federal Office of Statistics and Macro International, 1992, Abuja.

*Nigeria Multiple Indicator Cluster Survey 2016-17*, National Bureau of Statistics (NBS), National Primary Health Care Development Agency (NPHCDA), National Agency for the Control of Aids (NACA), United Nations Children's Fund (UNICEF), World Health Organization (WHO), World Bank, Save One Million Live (SOML), Bill and Melinda Gates Foundation, United Nations Population Funds (UNFPA), 2017, Abuja.

### *Appliances*

The Multiple Indicator Cluster Survey penetration rates of refrigerator and freezer are combined and reported as the penetration rate of refrigerator.

## North Macedonia

### *Sources*

*Multiple Indicator Cluster Survey 2018-2019*, State Statistical Office, United Nations Children's Fund (UNICEF), United Nations Population Fund (UNFPA), British Embassy, 2020, Skopje.

## Pakistan

### *Sources*

*Pakistan Demographic and Health Survey (various editions)*, National Institute of Population Studies and ICF/Macro International, Islamabad.

### *Appliances*

The penetration of evaporative coolers in 1991 and 2007 also includes data on penetration of air conditioners.

## Paraguay

### Sources

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## Peru

### Sources

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*Perú Encuesta Demográfica y de Salud Familiar (Peru Demographic and Family Health Survey)*, Instituto Nacional de Estadística e Informática (National Institute of Statistics and Informatics) and ICF/Macro International, Lima.

### Appliances

Peru aggregates the penetration of refrigerators, freezers and combos under refrigerators in this report.

## Philippines

### Sources

*Philippines National Demographic and Health Survey (various editions)*, Philippine Statistics Authority and ICF International, Quezon City.

*Philippines National Demographic and Health Survey (various editions)*, Philippine Statistics Authority and ICF/Macro International, Manila.

## Russian Federation

### *Sources*

*Russian Statistical Yearbook (various editions)*, Federal State Statistics Services, Moscow.

### *Appliances*

Since 2015, the category televisions refers to all types of TV sets, home theatre, multimedia player, etc.

Ownership data were recalculated into stock estimates.

## Rwanda

### *Sources*

*Rwanda Demographic and Health Survey (various editions)*, National Institute of Statistics of Rwanda, Ministry of Health and ICF International, Kigali.

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*2005 Rwanda Demographic and Health Survey*, National Institute of Statistics of Rwanda and ICF International, Kigali.

## Serbia

### *Sources*

*Serbia Multiple Indicator Cluster Survey (various editions)*, Statistical Office of the Republic of Serbia (SORS), United Nations Children's Fund (UNICEF), Government of Serbia, United Nations Population Fund (UNFPA), Belgrade.

## Slovenia

### Sources

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## Sri Lanka

### Sources

*Sri Lanka Socio-Economic Survey (various editions)*, Statistics Department of Central Bank of Sri Lanka, Sri Jayawardenepura Kotte.

## Sudan

### Sources

*Sudan Multiple Indicator Cluster Survey 2014*, Central Bureau of Statistics (CBS) Sudan, Ministry of Health, United Nations Children's Fund (UNICEF), World Health Organization (WHO), United Nations Population Fund (UNFPA), World Food Programme (WFP), Department for International Development (DfID) UK, 2016, Khartoum.

## Suriname

### Sources

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## Tajikistan

### Sources

*Tajikistan Demographic and Health Survey 2017*, Statistical Agency under the President of the Republic of Tajikistan, Ministry of Health and Social Protection of Population of the Republic of Tajikistan, and ICF International, 2018, Dushanbe.

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## United Republic of Tanzania

### Sources

*Tanzania Demographic and Health Survey and Malaria Indicator Survey 2022*, Ministry of Health, Ministry of Health [Zanzibar], National Bureau of Statistics, Office of the Chief Government Statistician and ICF International, 2022, Dodoma.

*Tanzania Malaria Indicator Survey 2017*, Ministry of Health, Community Development, Gender, Elderly and Children, Ministry of Health [Zanzibar], National Bureau of Statistics, Office of the Chief Government Statistician and ICF International, 2017, Dar es Salaam.

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*Tanzania HIV/AIDS Indicator Survey 2003-04*, Tanzania Commission for AIDS, National Bureau of Statistics and Macro International, 2005, Dar es Salaam.

*Tanzania Reproductive and Child Health Survey 1999*, National Bureau of Statistics and Macro International. 2000, Dar es Salaam.

*Tanzania HIV/AIDS and Malaria Indicator Survey (various editions)*, Tanzania Commission for AIDS, Zanzibar AIDS Commission, National Bureau of Statistics, Office of the Chief Government Statistician and ICF/Macro International, Dar es Salaam.

*Tanzania Demographic and Health Survey (various editions)*, National Bureau of Statistics and ICF/Macro International, Dar es Salaam.

## Togo

### Sources

*Enquête sur les Indicateurs du Paludisme au Togo 2017 (Survey on Malaria Indicators in Togo 2017)*, Ministère de la Santé et de la Protection Sociale (Ministry of Health and Social Protection) and ICF International, 2017, Lomé.

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## Trinidad and Tobago

### Sources

*Survey Findings Report Monitoring and Situation of Children and Women, 2022*, Central Statistical Office, United Nations Children's Fund (UNICEF), 2023, Port of Spain.

## Tunisia

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*Rapport des résultats de l'enquête par grappes à indicateurs multiples (Report of the Results of the Multiple Indicator Cluster Survey (various editions)*, National Institute of Statistics (INS), Ministry of Development, Investment and International Cooperation (MDICI), Ministry of Economy and Planning (MEP), United Nations Children's Fund (UNICEF), German Development Bank (KfW), United States Agency for International Development (USAID), 2024, Tunis.

## Turkmenistan

### Sources

*Turkmenistan Demographic and Health Survey 2000*, Gurbansoltan Eje Clinical Research Centre for Maternal and Child Health, Ministry of Health and Medical Industry and Macro International, 2001, Ashgabad.

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## Uganda

### Sources

*Uganda Demographic and Health Survey (various editions)*, Uganda Bureau of Statistics and ICF International, Kampala.

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*Uganda Demographic and Health Survey 1995*, Statistics Department and Macro International, 1996, Kampala.

## Uzbekistan

### Sources

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## Yemen

### Sources

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## Zambia

### Sources

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## Zimbabwe

### Sources

*Zimbabwe Demographic and Health Survey (various editions)*, Zimbabwe National Statistics Agency and ICF International, Harare.

Data collection for the 2023-24 Zimbabwe Democratic and Health Survey took place from December 2023 to May 2024. Datapoints in the Database are entered for 2024.

*Zimbabwe Demographic and Health Survey (various editions)*, Central Statistical Office and Macro International, Harare.

*Zimbabwe Multiple Indicator Cluster Survey 2019*, Zimbabwe National Statistics Agency, United Nations Children's Fund (UNICEF), European Union, UK Department for International Development (DFID), Embassy of Sweden, United Nations Population Fund (UNFPA), 2019, Harare.

# Abbreviations

AC:	air conditioner
TVs:	televisions and home entertainment
DHS:	Demographic and Health Survey
IEA:	International Energy Agency
OECD:	Organisation for Economic Co-operation and Development

# Useful resources

Energy end-uses and Efficiency Indicators Database: <https://www.iea.org/data-and-statistics/data-product/energy-end-uses-and-efficiency-indicators>

Energy end-uses and Efficiency Indicators Highlights: <https://www.iea.org/data-and-statistics/data-product/energy-efficiency-indicators-highlights>

Energy Efficiency Indicators: Fundamentals on Statistics: <https://www.iea.org/reports/energy-efficiency-indicators-fundamentals-on-statistics>

Energy Efficiency Indicators: Essentials for Policy Making: <https://www.iea.org/reports/energy-efficiency-indicators-essentials-for-policy-making>

Energy Efficiency Indicators questionnaire: <https://www.iea.org/areas-of-work/data-and-statistics/questionnaires>

IEA online courses on Energy Efficiency: <https://elearning.iea.org/>

IEA and CMCC Weather for Energy Tracker: <https://www.iea.org/articles/weather-for-energy-tracker>

G20 Energy end-use data and energy efficiency metrics initiative: <https://www.iea.org/about/international-collaborations/g20>

Energy end-use data collection methodologies and the emerging role of digital technologies: <https://www.iea.org/reports/energy-end-use-data-collection-methodologies-and-the-emerging-role-of-digital-technologies>

National data collection practices: <https://www.iea.org/articles/national-data-collection-practices>

General data and statistics landing page: <https://www.iea.org/data-and-statistics>

World Energy Balances Overview and free Excel file: <https://www.iea.org/reports/world-energy-balances-overview>

International Recommendations for Energy Statistics: <https://unstats.un.org/unsd/energystats/methodology/ires/>

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