Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Target 7.1: By 2030, ensure universal access to affordable, reliable and modern energy services

Indicator 7.1.1: Proportion of population with access to electricity

Institutional information

Organization(s)

World Bank (WB)

Concepts and definitions

Definition

Proportion of population with access to electricity is the percentage of population with access to electricity.

Rationale

Access to electricity addresses major critical issues in all the dimensions of sustainable development. The target has a wide range of social and economic impacts, including facilitating development of household-based income generating activities and lightening the burden of household tasks.

Concepts

Please see method of computation for more details.

Comments and limitations

While the existing global household survey evidence base provides a good starting point for tracking household energy access, it also presents a number of limitations that will need to be addressed over time. In many parts of the world, the presence of an electricity connection in the household does not necessarily guarantee that the energy supplied is adequate in quality and reliability or affordable in cost and it would be desirable to have fuller information about these critical attributes of the service, which have been highlighted in SDG7.

Substantial progress has already been made toward developing and piloting a new methodology known as the Multi-Tier Framework for Measuring Energy Access (World Bank) which is able to capture these broader dimensions of service quality and would make it possible to go beyond a simple yes/no measure of energy access to a more refined approach that recognizes different levels of energy access, and also takes into account the affordability and reliability of energy access explicitly referenced in the language of SDG7. The methodology for the Multi-Tier Framework for Measuring Energy Access has already been published based on a broad consultative exercise and represents a consensus view across numerous international agencies working in the field. A first Global Energy Access Survey using this methodology has already been launched and is underway expecting to yield results by early 2017. Discussions are also progressing with the World Bank’s Household Survey Technical Working Group regarding the mainstreaming of this methodology into the standardized

household questionnaire design that will be applied every three years in all low income countries between 2015 and 2030 as part of the broader SDG monitoring exercise.

The adoption of this methodology will allow – over time – the more refined measurement of energy access, making it possible to report more disaggregated information regarding the type of electricity supply (grid or off-grid), the capacity of electricity supply provided (in Watts), the duration of service (daily hours and evening hours), the reliability of service (in terms of number and length of unplanned service interruptions), the quality of service (in terms of voltage fluctuations), as well as affordability and legality of service.

Another advantage of this approach is that they can be applied not only to measuring energy access at the household level, but also its availability to support enterprises and deliver critical community services, such as health and education.

Methodological challenges associated with the measurement of energy access are more fully described the Global Tracking Framework (2013) (Chapter 2, Section 1, page 75-82), and in the ESMAP (2015) Report “Beyond Connections: Energy Access Redefined” both of which are referenced below.

Methodology

Computation method

Given the low frequency and the regional distribution of some surveys, a number of countries have gaps in available data. To develop the historical evolution and starting point of electrification rates, a simple modelling approach was adopted to fill in the missing data points - around 1990, 2000, 2010 and 2012. This modelling approach allowed the estimation of electrification rates for 212 countries over these time periods. The SE4ALL Global Tracking Framework Report (2013) referenced below provides more details on the suggested methodology for tracking access to energy (Chapter 2, Section 1, page 82-87).

Disaggregation

Disaggregation of access to electricity by rural or urban place of residence is possible for all countries.

Treatment of missing values

- **At country level**

  Given the low frequency and the regional distribution of some surveys, a number of countries have gaps in available data. To develop the historical evolution and starting point of electrification rates, a simple modeling approach was adopted to fill in the missing data points - around 1990, around 2000, and around 2010. Therefore, a country can have a continuum of zero to three data points. There are 42 countries with zero data point and the weighted regional average was used as an estimate for electrification in each of the data periods. 170 countries have between one and three data points and missing data are estimated by using a model with region, country, and time variables. The model keeps the original observation if data is available for any of the time periods. This modeling approach allowed the estimation of electrification rates for 212 countries over these three time periods (Indicated as "Estimate").

- **At regional and global levels**

  NA

Regional aggregates

Global coverage is available through the World Bank Global Electrification Database 2015 and the database SE4ALL Global Tracking Framework (World Bank) referenced below.

Data sources

Description

Data for access to electricity are collected entirely from household surveys (and occasionally censuses), tapping into a wide number of different household survey types including: Demographic and Health Surveys (DHS) and Living Standards Measurement Surveys (LSMS), Multi-Indicator Cluster Surveys (MICS), the World Health Survey (WHS), other nationally developed and implemented surveys, including those by various government agencies (for example, ministries of energy and utilities).

The World Bank is the agency that has taken responsibility for compiling a metadatabase of statistics on electricity access harvested from the full global body of household surveys. The World Bank Electrification Database covers more than 180 countries for the period 1990-2012 and is updated regularly.

For more information on compiling access to energy data see Global Tracking Framework report (2013) (Chapter 2, Annex 2, page 127-129).

Data availability

Data was collected on these indicators for the period 1990-2012 for more than 180 countries worldwide.

Calendar

Data release

Ongoing

Data providers

NA

Data compilers

World Bank

References

URL

www.worldbank.org

References

Global Tracking Framework Report (2013)

http://trackingenergy4all.worldbank.org

Global Tracking Framework Report (2015)

http://trackingenergy4all.worldbank.org/

Global Tracking Framework database (2015)

http://data.worldbank.org/data-catalog/sustainable-energy-for-all

Multi-Tier Framework for Measuring Energy Access

https://www.esmap.org/node/55526