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

Target: 7.a. By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology.

Indicator: 7.a.1: International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems.

Institutional information

Organization(s):

Organisation for Economic Co-operation and Development (OECD) and International Renewable Energy Agency (IRENA)

Concepts and definitions

Definition:

The flows are covered through two complementary sources.

OECD: The flows covered by the OECD are defined as all official loans, grants and equity investments received by countries on the DAC List of ODA Recipients from foreign governments and multilateral agencies, for the purpose of clean energy research and development and renewable energy production, including in hybrid systems extracted from the OECD/DAC Creditor Reporting System (CRS) with the following sector codes:

- 23210 Energy generation, renewable sources – multiple technologies - Renewable energy generation programmes that cannot be attributed to one single technology (codes 23220 through 23280 below). Fuelwood/charcoal production should be included under forestry 31261.
- 23220 Hydro-electric power plants - Including energy generating river barges.
- 23230 Solar energy - Including photo-voltaic cells, solar thermal applications and solar heating.
- 23240 Wind energy - Wind energy for water lifting and electric power generation.
- 23250 Marine energy - Including ocean thermal energy conversion, tidal and wave power.
- 23260 Geothermal energy - Use of geothermal energy for generating electric power or directly as heat for agriculture, etc.
- 23270- Biofuel-fired power plants Use of solids and liquids produced from biomass for direct power generation. Also includes biogases from anaerobic fermentation (e.g. landfill gas, sewage sludge gas, fermentation of energy crops and manure) and thermal processes (also known as syngas); waste fired power plants making use of biodegradable municipal waste (household waste and waste from companies and public services that resembles household waste, collected at installations specifically designed for their disposal with recovery of combustible liquids, gases or heat). See code 23360 for non-renewable waste-fired power plants.

Research and development of energy efficiency technologies and measures is captured under CRS sector code 23182 on Energy research. The above flows also include technical assistance provided to support production, research and development as defined above.

IRENA: The flows covered by IRENA are defined as all additional loans, grants and equity investments received by developing countries (defined as countries in developing regions, as listed in the UN M49 composition of regions) from all foreign governments, multilateral agencies and additional development finance institutions (including export credits, where available) for the purpose of clean energy research and development and renewable energy production, including in hybrid systems. These additional flows cover the same technologies and other activities (research and development, technical assistance, etc.) as listed above and exclude all flows extracted from the OECD/DAC CRS.

Concepts:

The definition and classification of renewable technologies complies with the UN Standard International Energy Product Classification (SIEC). Definitions of other concepts are given above.

Rationale:

Total ODA and OOF flows to developing countries quantify the public financial effort (excluding export credits) that donors provide to developing countries for renewable energies. The additional flows (from the IRENA database) capture the flows to non-ODA Recipients in developing regions, flows from countries and institutions not currently reporting to the DAC and certain other types of flows, such as export credits.

Energy access is a major development constraint in many developing countries and, while starting from a relatively low base, energy demand is expected to grow very rapidly in many of these countries in the future. This presents an opportunity for developing countries to utilize clean and renewable technologies to meet their future energy needs if they can gain access to the appropriate technologies and expertise. This indicator provides a suitable measure of the international support given to developing countries to access these technologies.

Comments and limitations:

Data in the Creditor Reporting System are available from 1973. However, the data coverage is considered complete since 1995 for commitments at an activity level and 2002 for disbursements. At present, flows to clean energy research and development are only partially covered by the database and a few other areas (e.g. off-grid electricity supply, investments in improved cookstove projects) may be covered only partially.

The IRENA database currently only covers financial institutions that have invested a total of USD 400 million or more in renewable energy. The process of continuous improvement of the database includes verifying the data against data produced by the multilateral development banks for climate finance reporting and by comparing the data with other independent reporting by international development finance agencies.

Methodology

Computation method:

The OECD flows are calculated by taking the total official flows (ODA and OOF) from DAC member countries, multilateral organisations and other providers of development assistance to the sectors listed above. The IRENA (additional) flows are calculated by taking the total public investment flows from IRENA’s Public Renewable Energy Investment Database and excluding: domestic financial flows;

international flows to countries outside developing regions; and flows reported by OECD (as described above). The flows are commitments measured in current United States Dollars (USD).

Treatment of missing values:

- ***At country level:***

Not applicable - there is no imputation of missing values.

- ***At regional and global levels:***

Not applicable - there is no imputation of missing values to obtain regional or global totals.

Regional aggregates:

Regional and global totals are calculated by summing all available data from countries.

Sources of discrepancies:

Neither OECD nor IRENA make estimates of these figures. The data all come from national sources reported to OECD or, in the case of IRENA, from officially published statistics.

Methods and guidance available to countries for the compilation of the data at the national level:

Not applicable.

Consultation/validation process with countries for adjustments and estimates:

For OECD, see: http://www.oecd.org/dac/stats/methodology.htm

Quality assurance:

OECD/DAC data are reported by donors according to the same standards and methodologies (see here: http://www.oecd.org/dac/stats/methodology.htm). IRENA data are compiled from national sources following the United Nations Fundamental Principles of Official Statistics: https://unstats.un.org/unsd/dnss/gp/fundprinciples.aspx.

Data sources

Description:

The OECD/DAC has been collecting data on official and private resource flows from 1960 at an aggregate level and 1973 at an activity level through the Creditor Reporting System (CRS data are considered complete from 1995 for commitments at an activity level and 2002 for disbursements). Data are reported on an annual calendar year basis by statistical reporters in national administrations (aid agencies, Ministries of Foreign Affairs or Finance, etc.

IRENA's data on financial flows from public sources in support of renewable energy are available in IRENA's Public Renewable Energy Investment Database. IRENA collects this data from a wide range of publicly available sources, including the databases and annual reports of all of the main development finance institutions and 20 other bilateral and multilateral agencies investing in renewable energy. The database is updated annually and (at end-2016) covers public renewable energy investment flowing to 29 developed countries and 104 developing countries, for the period 2000-2015. As new publicly-funded financial institutions start investing in renewable energy, the IRENA database will expand to include these new investors over time.

Collection process:

See above.

Data availability

Description:

The CRS contains flows to all DAC recipient countries. Global and regional figures are based on the sum of ODA and OOF flows to the renewable energy projects.

IRENA currently includes data about renewable energy projects in 29 developed countries and 104 developing countries (133 countries overall).

Time series:

OECD: annual data from 1960 onwards (see above).

IRENA: annual data from 2000 onwards.

Disaggregation:

Data in the CRS contain markers which reflect whether a policy objective is attained through the activity. Measuring gender equality is included in the CRS. Data from the CRS are reported at the project level and can be disaggregated by type of flow (ODA or OOF), by donor, recipient country, type of finance, type of aid (project, agriculture sub-sector, etc.).

Data in IRENA are stored by country (source and recipient) at the project-level, allowing disaggregation of the data in several dimensions. For example, financial flows can be divided by technologies (i.e. bioenergy, geothermal energy, hydropower, ocean energy, solar energy, and wind energy) and sub-technologies (e.g. onshore and offshore wind), by geography (both at the country and regional level), by financial instrument and by type of recipient.

Calendar

Data collection:

Data for a year is collected during the following year.

Data release:

OECD DAC data is updated four time a year, with complete and detailed data published at year-end (covering the previous year). IRENA investment data is available at year-end (covering the previous year).

Data providers

See above.

Data compilers

Organisation for Economic Co-operation and Development (OECD) and International Renewable Energy Agency (IRENA).

References

CRS: See all links here: http://www.oecd.org/dac/stats/methodology.htm

IRENA Renewable Energy Finance Flows: http://resourceirena.irena.org/gateway/dashboard/?topic=6&subTopic=8

Related indicators

Not applicable.