# Indicators for SDG 7

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International Energy Agency

# Presentation overview

- Introduction to tracking Sustainable Development Goals (SDGs)
- Tracking SDG 7 : The Energy Progress Report
- SDG 7.2.1 Indicator : Renewable energy share in the total final energy consumption
- SDG 7.3.1 Indicator : Energy intensity measured in terms of primary energy and GDP
- Conclusions

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# Introduction to tracking Sustainable Development Goals (SDGs)

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# UN Secretary General report: high-level monitoring tool to inform policy

- At the global level, the 17 Sustainable Development Goals (SDGs) and all their targets are monitored through a set of global indicators.
- The annual report provides an overview of the world's implementation efforts to date to realize the UN SDGs.
- IEA data and analysis feed the report.

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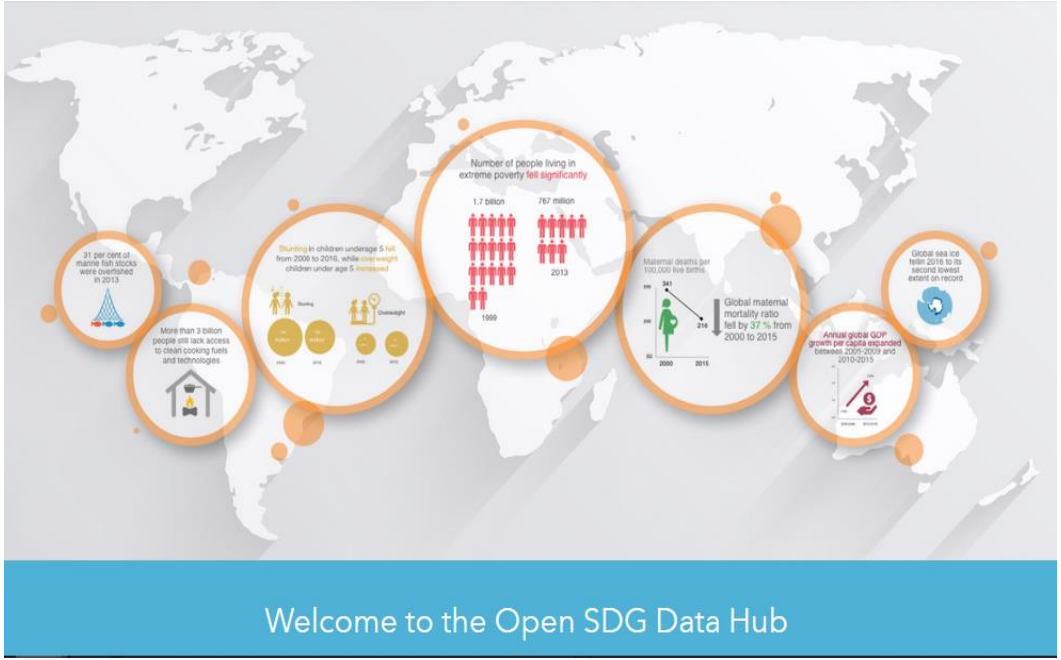
# Global indicator database: cross-SDG tracking tool




Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all
Target 7.3: By 2030, double the global rate of improvement in energy efficiency
Indicator 7.3.1: Energy intensity measured in terms of primary energy and GDP

## Institutional information

**Organization(s):**

International Energy Agency (IEA)

United Nations Statistics Division (UNSD)

United Nations' Inter-agency Mechanism on Energy (UN Energy)

SE4ALL Global Tracking Framework Consortium (SE4ALL Global Tracking Framework Consortium)

## Concepts and definitions

**Definition:**
Energy intensity is defined as the energy supplied to the economy pet unit value of economic output.

**Rationale:**

**Data and metadata from IEA feed the global UNSD database**

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# Tracking SDG 7 : The Energy Progress Report

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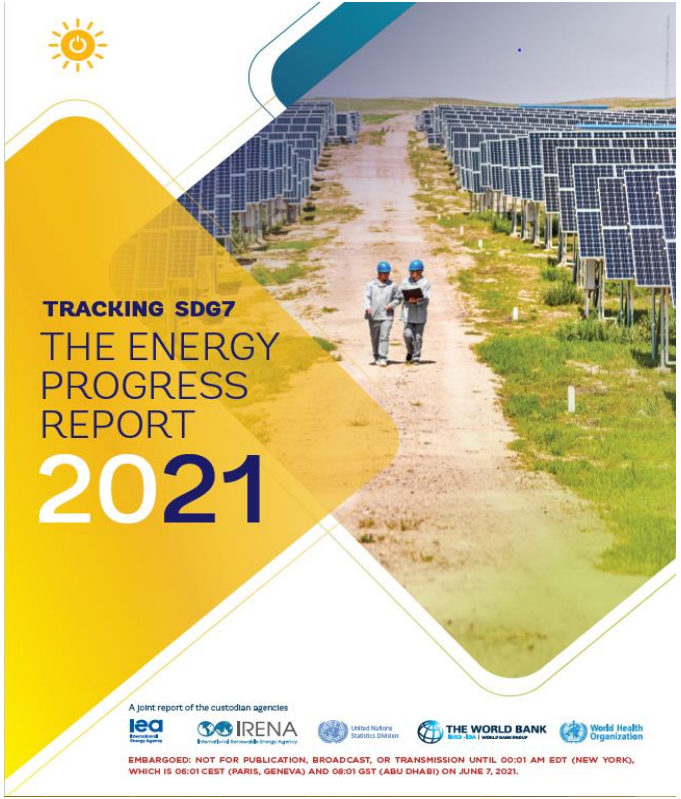
# Tracking SDG7: The Energy Progress Report




- ***SDG 7 :*** Ensure access to affordable, reliable, sustainable and modern energy for all.
- ***Tracking SDG7: The Energy Progress Report*** annually reviews progress toward SDG 7 at the global, regional and country levels, providing a benchmark against progress towards achieving SDG 7.
- Joint effort of the UN-appointed custodian agencies – IEA, IRENA, the United Nations Statistics Division, the World Bank and the World Health Organization.
- IEA is UN-appointed global custodian agency for tracking progress on **SDG 7.2 (renewable energy)** and **7.3 (energy efficiency).**

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# SDG 7: Ensure access to affordable, reliable, sustainable & modern energy for all

| Target | Indicator | Custodians |
|---|---|---|
| **7.1**: By 2030, ensure **universal access** to affordable, reliable and modern energy services | **7.1.1:** Proportion of population with access to electricity | World Bank |
| | **7.1.2:** Proportion of population with primary reliance on clean fuels and technology | WHO |
| **7.2:** By 2030, increase substantially the share of **renewable energy** in the global energy mix | **7.2.1**<br>Renewable energy share in the total final energy consumption | IEA, UNSD (with IRENA for content) |
| **7.3**<br>By 2030, double the global rate of improvement in **energy efficiency** | **7.3.1**<br>Energy intensity measured in terms of primary energy and GDP | IEA, UNSD |

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# World is not on track to achieve the SDG 7 goal

## Key Findings of the Tracking SDG7: The Energy Progress Report

| | 2010 | | Latest Data |
|---|---|---|---|
| 7.1.1 | 1.2 billion people without access to electricity | | 759 million people without access to electricity (2019) |
| 7.1.2 | 3 billion people without access to clean cooking | | 2.6 billion people without access to clean cooking (2019) |
| 7.2.1 | 16.4% share of total final energy consumption from renewables | | 17.1% share of total final energy consumption from renewables (2018) |
| 7.3.1 | 5.6 MJ/USD primary energy intensity | | 4.8 MJ/USD primary energy intensity (2018) |

**With today's rate of progress the world is not on track to achieve SDG 7**

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# SDG 7.2.1 Indicator : Renewable energy share in the total final energy consumption

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# SDG 7.2: Renewable energy share in the total final energy consumption

The indicator used to track SDG 7.2 is the share of renewable energy in total final energy consumption, calculated as:

$$\%TFEC_{RES} = \frac{TFEC_{RES} + \left(TFEC_{ELE} \times \frac{ELE_{RES}}{ELE_{TOTAL}}\right) + \left(TFEC_{HEAT} \times \frac{HEAT_{RES}}{HEAT_{TOTAL}}\right)}{TFEC_{TOTAL}}$$

- **Renewable energy sources (RES)** : refers to total renewable energy from: hydropower, wind, solar PV, solar thermal, geothermal, tide/wave/ocean, renewable municipal waste and biofuels.
- **Total final energy consumption (TFEC)** : refers to the sum of the final energy consumption in the transport, industry, and other sectors (equivalent to the total final consumption minus non-energy use).
- **Renewable energy consumption** : refers to final consumption of direct renewables plus the amount of electricity and heat consumption estimated from renewable energy sources.

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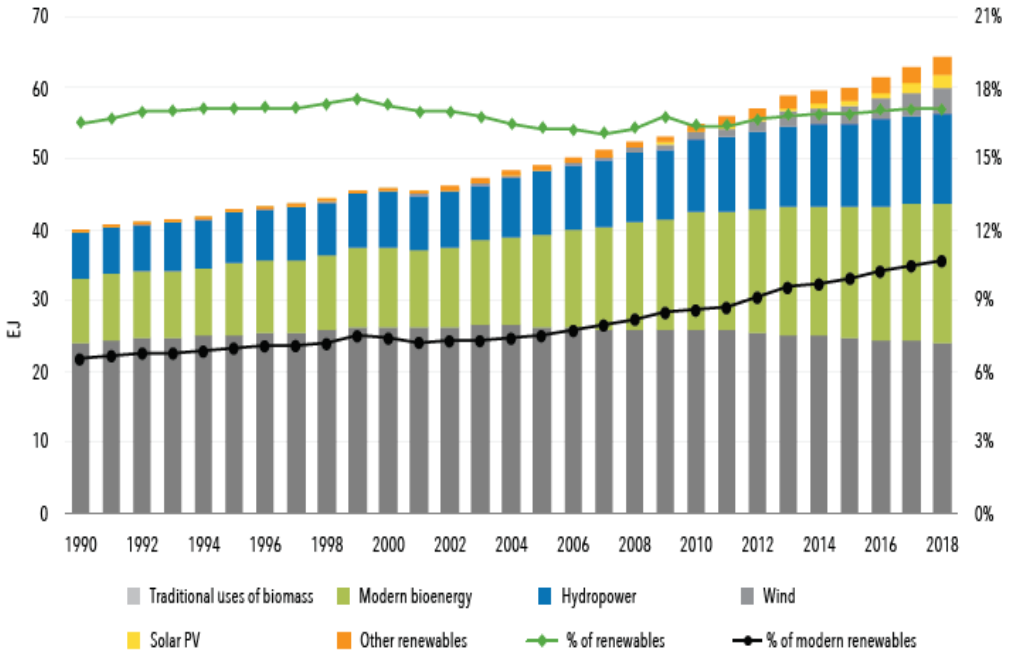
# SDG 7.2 – Modern bioenergy vs traditional use of biomass

FIGURE 3.1 • Renewable energy consumption by technology and share of total energy consumption, 1990–2018




*Source:* IEA 2020b; UNSD 2020.

- Since 1990, the share of renewable energy in TFEC has **remained relatively steady.**
- For purposes of the Tracking SDG 7 report, the phrase "traditional uses of biomass" refers to the **residential consumption** of primary solid biofuels and charcoal in countries **outside the OECD excluding Eurasia.**
- Current trend shows slow **decline** in **traditional uses of biomass** and slow but progressive **increase** in the share of **modern renewables.**

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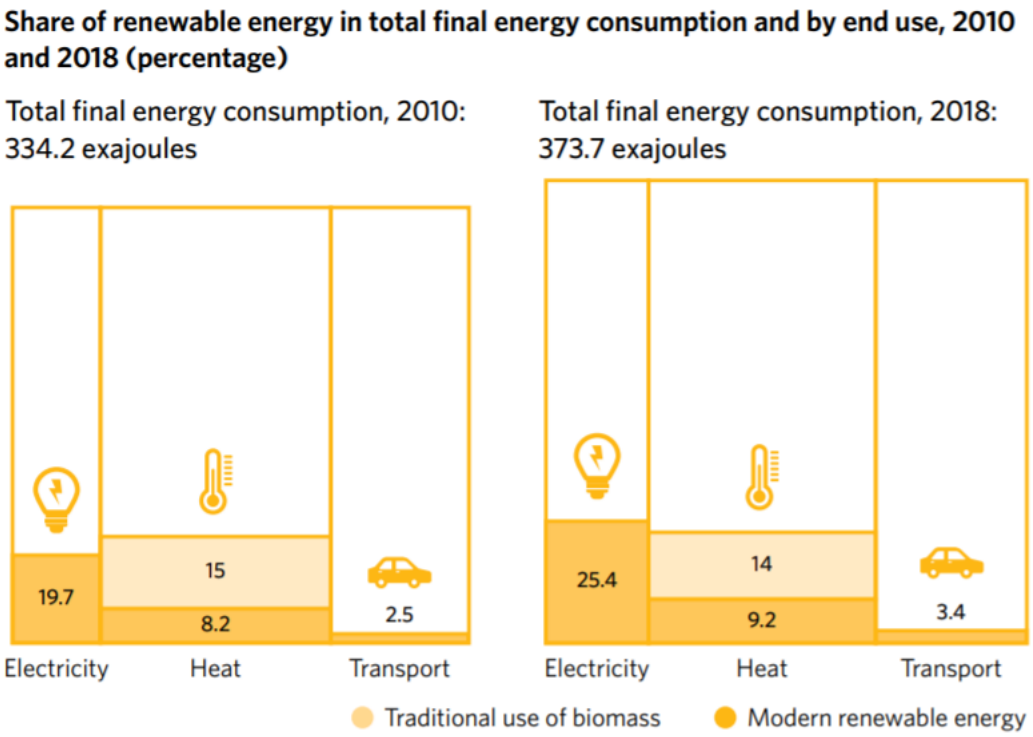
# SDG 7.2 – Going beyond the main indicator




The amount of renewable energy consumption can be divided into three end uses to refer to the **energy service** for which the energy is consumed: **electricity, heat, and transport**:

1. **Electricity:** refers to the amounts of electricity consumed in the final sectors excluding transport.

2. **Heat**: refers to the amount of energy consumed for heat-raising purposes in industry and other sectors.

3. **Transport:** refers to the amounts of energy consumed in the transport sector.

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# Energy statistics are key for tracking SDG 7.2

- The SDG 7.2.1 indicator is derived from energy balances – which cover information on supply and demand of all sources of energy across sectors.
- Efforts to improve the ability to measure the sustainability of bioenergy consumption is key for differentiation between modern renewables and traditional use of biomass.
- Enhancing the ability to collect and report data on off-grid renewables is key for tracking SDG 7.2.1.
- Data for traditional use of solid biofuels are scarce globally and developing capacity in tracking such energy use is essential.
- Improved data availability and quality on consumption across sectors (transport, industry, residential and other sectors) through specialized industry or household surveys can help with the SDG 7.2.1 statistics.

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# SDG 7.3.1 Indicator : Energy intensity measured in terms of primary energy and GDP

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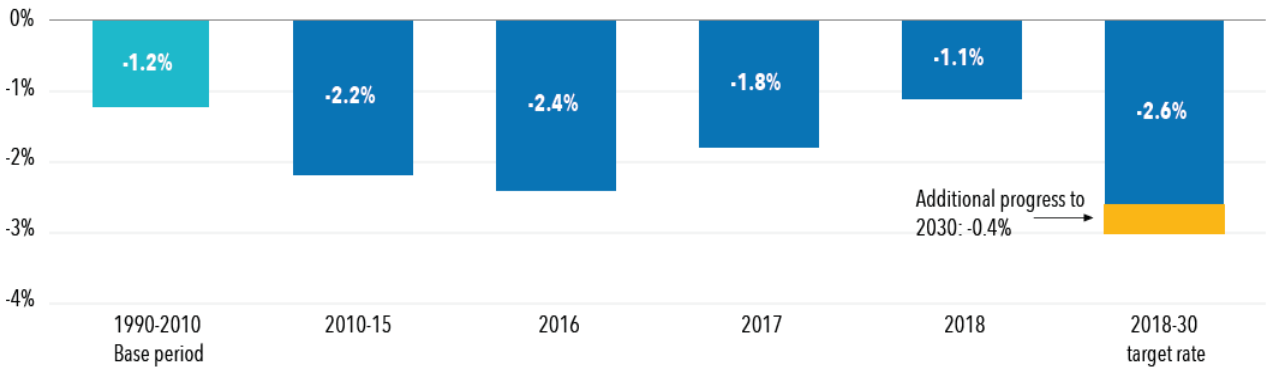
# SDG 7.3: Energy intensity measured in terms of primary energy and GDP

SDG 7.3.1:

$$\frac{\textbf{Total Energy Supply (MJ)}}{\textbf{GDP (USD 2017 PPP)}}$$

FIGURE 4.2 • Growth rate of primary energy intensity, by period and target rate, 2018–30




*Source:* IEA, UN, and World Bank (see footnote 46).

- Energy intensity indicates how much energy is used to produce one unit of economic output. A lower ratio indicates that less energy is used to produce one unit of economic output.
- The rate of global primary energy intensity improvement has **slowed** in recent years. 1.1% improvement in 2018, **lowest annual rate since 2010.**
- Intensity improvements are moving further from the target set for 2030.
- Annual improvement until 2030 will need to **average 3%** to meet the SDG target.

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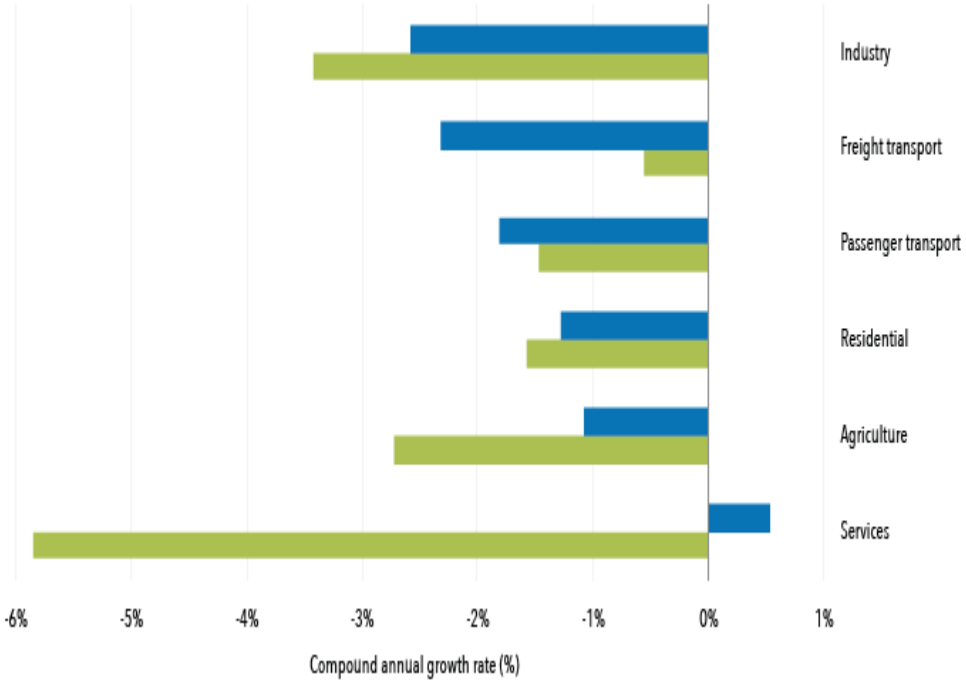
# SDG 7.3 – Energy intensity is not enough to track efficiency

FIGURE 4.8 • Compound annual growth rate of energy intensity by sector, 1990–2010 and 2010–18




- **End-use indicators** allow disentangling efficiency from other drivers of energy intensity (Structure, activity)
  - Industry/Services/Agriculture: Energy consumption per unit of value added
  - Transport: Energy consumption per unit of passenger or tonne-kilometers
  - Residential: Energy consumption per unit of floor area
- The rate of improvement has **slowed** across all sectors, with the **exception of transport.**

IEA publishes dataset dedicated to end-use indicators : *Energy efficiency indicators Highlights*

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# Energy statistics are key for tracking SDG 7.3

- The SDG 7.3.1 indicator is derived from energy balances – which cover information on supply of all sources of energy across sectors.
- Energy intensity is only an imperfect proxy for energy efficiency. It can be affected by a number of factors, such as climate, structure of the economy. For better assessment of energy efficiency progress, more granular and targeted data are needed.
- Efforts to collect disaggregated energy consumption and activity data by sub sector and/or end-use are key for tracking improvements in energy efficiency.

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# Conclusions

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# National energy data are key for policy tracking

- SDG7 is raising profile of energy statistics globally – through a coherent framework that optimizes use of available data.
- The SDG 7.2.1 and SDG 7.3.1 indicators are derived from energy balances – which cover information on supply and demand of all sources of energy across sectors.
- Improved data availability and quality particular for bioenergy use and off-grid renewables for SDG 7.2 and end-use energy consumption and activity data for SDG 7.3 are essential.
- National energy data are the primary source for this tracking report and well-resourced and well-designed national energy data collection is essential for sound policy tracking and broader energy planning.
- Enhanced capacity at national level will result in benefits globally.

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