MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

STATISTICAL CAPACITY BUILDING PROGRAMME ONLINE TRAINING COURSE

SDG GOAL 7:
"AFFORDABLE AND CLEAN ENERGY INDICATORS"
OVERVIEW

Fuziah Md Amin
Agriculture and Environment Statistics Division
Department of Statistics Malaysia
14 – 15 March 2023

BANCI EKONOMI 2023
DATA PEMANGKIN EKONOMI NEGARA

20 OCT

2016 - 2030

PSSN

StatsMalaysia
www.DOSM.gov.my

OUTLINE

CONTENTS

SDG OVERVIEW

SDG OVERVIEW

What is Sustainable Development Goals?

A new, universal set of goals, targets, and indicators that UN member state will be expected to use to frame their agenda and political policies over the next 15 years (2016 – 2030)

Implementation and success will rely on countries' own sustainable development policies, plans and programmes.

17 Goals, 169 Targets, 248 Indicators to Transform Our World

Revised and agreed during 53rd session in March 2022

SDG OVERVIEW

17 Goals

3 Dimensions

5 Focus Areas

SUSTAINABLE DEVELOPMENT GOALS

SDG DIMENSION

SDG Dimension

Social

Economy

Environment

5 FOCUS AREA

PEOPLE

5 GOALS

PLANET

5 GOALS

PROSPERITY

5 GOALS

PEACE

1 GOAL

PARTNERSHIP

1 GOAL

MINISTRY OF ECONOMY
DEPARTMENT OF STATISTICS MALAYSIA

17 SDG GOALS

StatsMalaysia
www.DOSM.gov.my

1 NO POVERTY
End poverty in all its forms everywhere

2 ZERO HUNGER
End hunger, achieve food security and improved nutrition and promote sustainable agriculture

3 GOOD HEALTH AND WELL-BEING
Ensure healthy lives and promote well-being for all at all ages

4 QUALITY EDUCATION
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

5 GENDER EQUALITY
Achieve gender equality and empower all women and girls

6 CLEAN WATER AND SANITATION
Ensure availability and sustainable management of water and sanitation for all

7 AFFORDABLE AND CLEAN ENERGY
Ensure access to affordable, reliable, sustainable and modern energy for all

8 DECENT WORK AND ECONOMIC GROWTH
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

10 REDUCED INEQUALITIES
Reduce inequality within and among countries

11 SUSTAINABLE CITIES AND COMMUNITIES
Make cities and human settlements inclusive, safe, resilient and sustainable

12 RESPONSIBLE CONSUMPTION AND PRODUCTION
Ensure sustainable consumption and production patterns

13 CLIMATE ACTION
Take urgent action to combat climate change and its impacts

14 LIFE BELOW WATER
Conserve and sustainably use the oceans, seas and marine resources for sustainable development

15 LIFE ON LAND
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

16 PEACE, JUSTICE AND STRONG INSTITUTIONS
Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

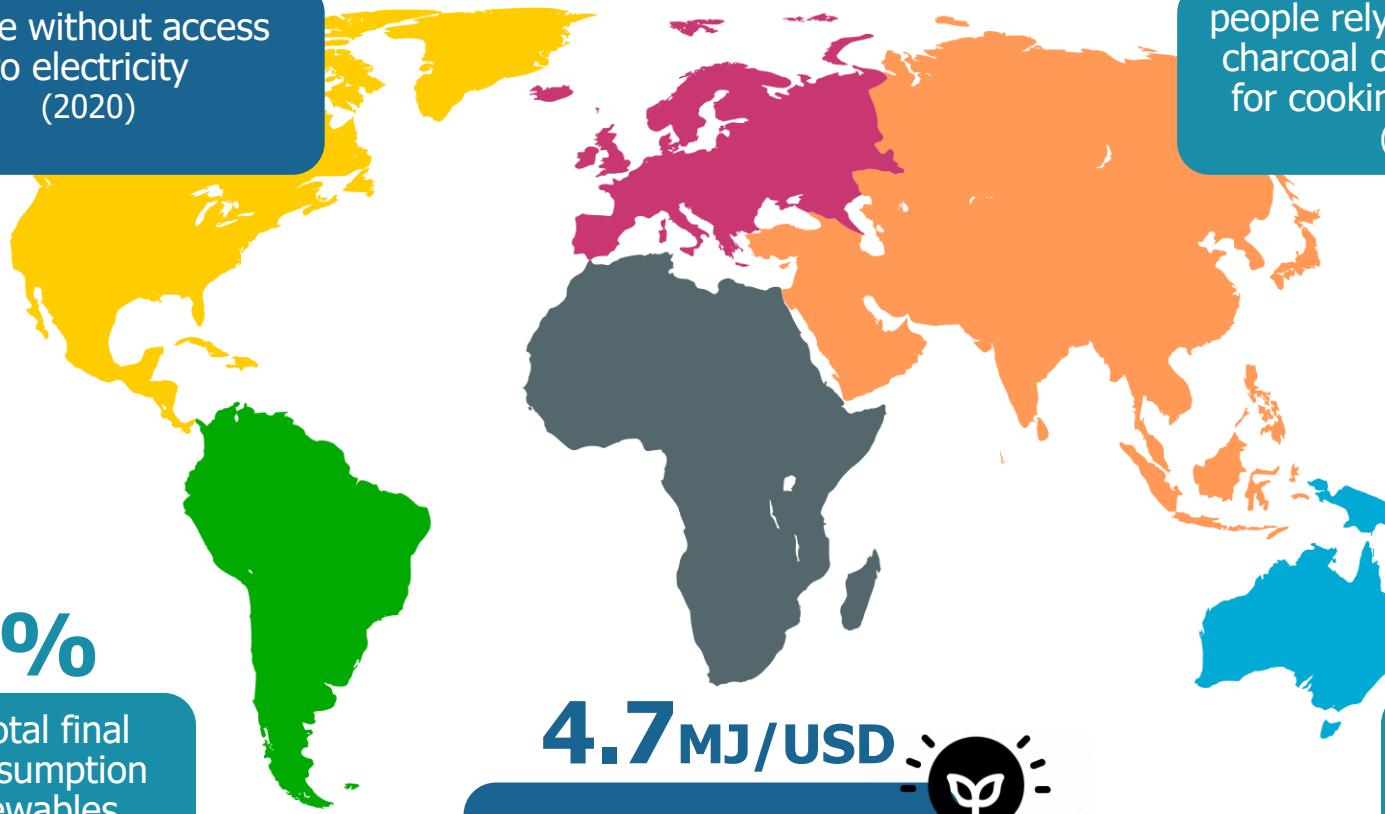
17 PARTNERSHIPS FOR THE GOALS
Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

GOAL 7: AFFORDABLE AND CLEAN ENERGY

FACTS AND FIGURES

733million
people without access to electricity (2020)

2.4billion
people rely on wood, coal, charcoal or animal waste for cooking and heating (2020)



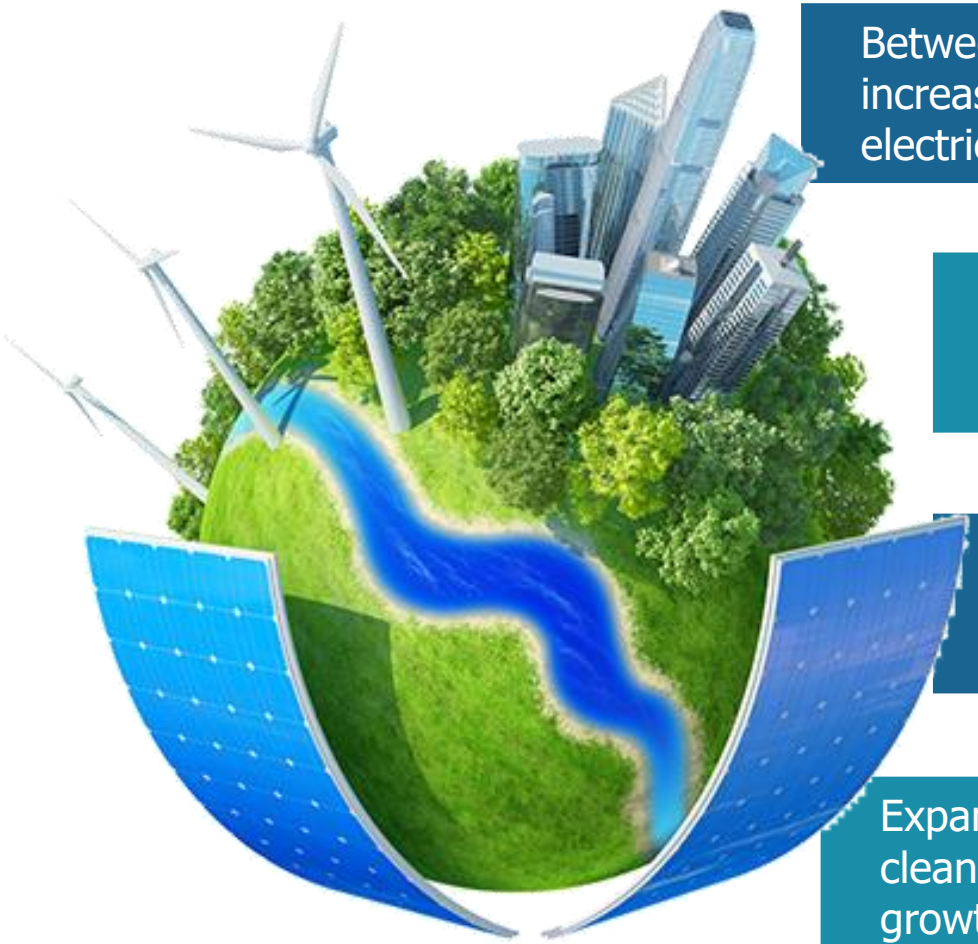
17.7%
share of total final energy consumption from renewables (2019)

4.7MJ/USD
primary energy intensity (2019)

10.9USD billion
international financial flows to developing countries in support of clean energy (2019)

Sources: Tracking SDG7 The Energy Progress Report 2022
https://www.irena.org/

WHY SDG 7?



Between 2010 and 2020, the number of people with electricity increased from 83 to 91 percent, and the numbers without electricity dipped to just below one billion

Yet as the population continues to grow, so will the demand for cheap energy, and an economy reliant on fossil fuels is creating drastic changes to our climate

Investing in solar, wind and thermal power, improving energy productivity, and ensuring energy for all is vital if we are to achieve SDG 7 by 2030

Expanding infrastructure and upgrading technology to provide clean and more efficient energy in all countries will encourage growth and help the environment

SDG 7: AFFORDABLE AND CLEAN

Our current reliance on fossil fuels is unsustainable and harmful to the planet, which is why we have to change the way we produce and consume energy

Renewable energy solutions are becoming cheaper, more reliable and more efficient every day

Implementing these new energy solutions as fast as possible is essential to counter climate change, one of the biggest threats to our own survival

GOAL 7: ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL

Goal 7 is about ensuring access to clean and affordable energy, which is key to the development of agriculture, business, communications, education, healthcare and transportation. The lack of access to energy hinders economic and human development.

Target (5 Targets)	Indicator (6 Indicators)
7.1: By 2030, ensure universal access to affordable, reliable and modern energy services	**7.1.1:** Proportion of Population with Access to Electricity
	7.1.2: Proportion of population with primary reliance on clean fuels and technology
7.2: By 2030, increase substantially the share of renewable energy in the global energy mix	**7.2.1:** Renewable energy share in the total final energy consumption
7.3: By 2030, double the global rate of improvement in energy efficiency	**7.3.1:** Energy intensity measured in terms of primary energy and GDP
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	**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
7.b: By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective proggrammes of support	**7.b.1:** Installed renewable energy-generating capacity in developing countries (in watts per capita)

GOAL 7 INDICATORS

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

Definition:	❑ Is to the percentage of population with access to electricity. SDG7 ensures access to affordable, reliable, sustainable and modern energy for all. ❑ This indicator refers to the proportion of population with access to electricity. This is expressed in percentage figures and is disaggregated by total, urban and rural access rates per country, as well as by UN regional and global classifications.
Concept:	❑ Electricity access in this scenario refers to the proportion of population in the considered area (country, region, and global context) that has access to consistent sources of electricity. ❑ The World Bank's Global Electrification Database compiles nationally representative household survey data as well as census data since 1990. It also incorporates data from the Socio-Economic Database for Latin America and the Caribbean, the Middle East and North Africa Poverty Database, and the Europe and Central Asia Poverty Database, all of which are based on similar surveys.
Methodology	❑ Population with the access for consistence electricity
Data Sources	❑ Household surveys and censuses conducted by respective countries

Sources: https://unstats.un.org/sdgs/metadata

GOAL 7 INDICATORS

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

Indicator 7.1.2:	Proportion of population with primary reliance on clean fuels and technology
Definition:	❑ Proportion of population with primary reliance on clean fuels and technology is calculated as the number of people using clean fuels and technologies for cooking, heating and lighting divided by total population reporting that any cooking, heating or lighting, expressed as percentage. ❑ "Clean" is defined by the emission rate targets and specific fuel recommendations (i.e. against unprocessed coal and kerosene) included in the normative guidance WHO guidelines for indoor air quality: household fuel combustion.
Concept:	❑ Current global data collection focuses on the primary fuel used for cooking, categorized as solid or non-solid fuels, where solid fuels are considered polluting and non-modern, while non-solid fuels are considered clean. ❑ This single measure captures a good part of the lack of access to clean cooking fuels but fails to collect data on type of device or technology used for cooking, and fails to capture other polluting forms of energy use in the home such as those used for lighting and heating.
Methodology	❑ People using clean fuels and technologies for cooking, heating and lighting divided by total population
Data Sources	❑ Household surveys and censuses conducted by respective countries

Sources: https://unstats.un.org/sdgs/metadata

GOAL 7 INDICATORS

7.2: By 2030, increase substantially the share of renewable energy in the global energy mix

Indicator 7.2.1: Proportion of population with primary reliance on clean fuels and technology

Definition:	The renewable energy share in total final consumption is the percentage of final consumption of energy that is derived from renewable resources.
Concept:	❑ Renewable energy consumption includes consumption of energy derived from: hydro, wind, solar, solid biofuels, liquid biofuels, biogas, geothermal, marine and renewable waste. ❑ Total final energy consumption is calculated from balances as total final consumption minus non-energy use.
Methodology	❑ Percentage of final consumption of energy derived from renewable resources
Data Sources	❑ National Energy Balances compiled by respective countries

Sources: https://unstats.un.org/sdgs/metadata

GOAL 7 INDICATORS

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

Definition:	Energy intensity is defined as the energy supplied to the economy per unit value of economic output.
Concept:	Total energy supply, as defined by the International Recommendations for Energy Statistics (IRES), is made up of production plus net imports minus international marine and aviation bunkers plus-stock changes. Gross Domestic Product (GDP) is the measure of economic output. For international comparison purposes, GDP is measured in constant terms at purchasing power parity.
Methodology	❑ Energy supplied to the economy per unit value of economic output
Data Sources	❑ National Energy Balances compiled by respective countries

Sources: https://unstats.un.org/sdgs/metadata

GOAL 7 INDICATORS

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

Definitions:	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). ❑ 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.
Methodology	❑ International financial flows to developing countries in support of clean energy RND
Data Sources	❑ Economic Co-operation and Development (OECD) and International Renewable Energy Agency (IRENA)

Sources: https://unstats.un.org/sdgs/metadata

GOAL 7 INDICATORS

7.b: By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programmes of support

Indicator 7.b.1: Installed renewable energy-generating capacity in developing countries (in watts per capita)

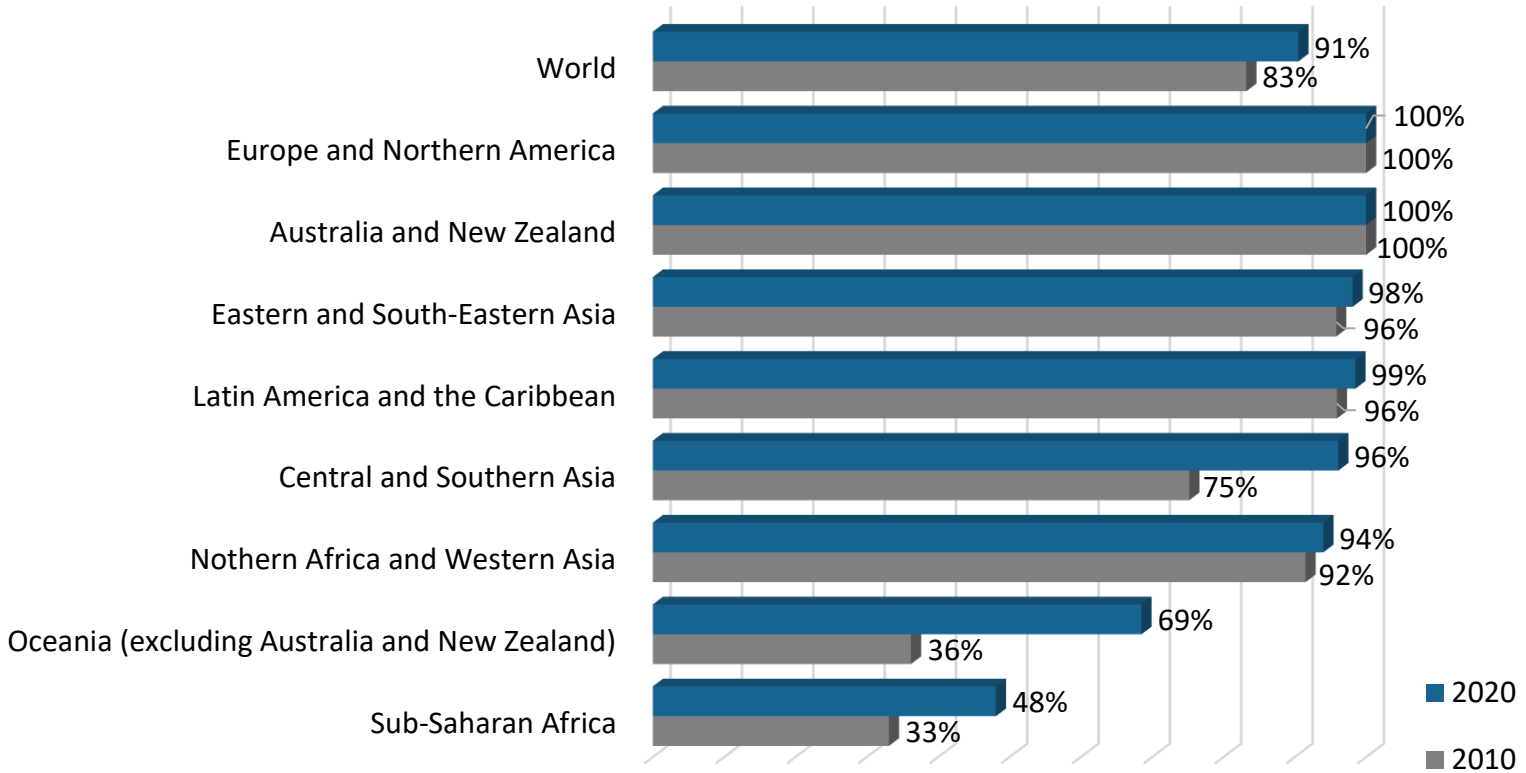
Definitions:	The indicator is defined as the installed capacity of power plants that generate electricity from renewable energy sources divided by the total population of a country. Capacity is defined as the net maximum electrical capacity installed at the year-end and renewable energy sources are as defined in the IRENA Statute
Concept:	❑ Electricity capacity is defined in the International Recommendations for Energy Statistics or IRES (UN, 2018) as the maximum active power that can be supplied continuously (i.e., throughout a prolonged period in a day with the whole plant running) at the point of outlet (i.e., after taking the power supplies for the station auxiliaries and allowing for the losses in those transformers considered integral to the station). This assumes no restriction of interconnection to the network. It does not include overload capacity that can only be sustained for a short period of time (e.g., internal combustion engines momentarily running above their rated capacity). ❑ The IRENA Statute defines renewable energy to include energy from the following sources: hydropower; marine energy (ocean, tidal and wave energy); wind energy; solar energy (photovoltaic and thermal energy); bioenergy; and geothermal energy.
Methodology	❑ Installed capacity of power plants that generate electricity from renewable energy sources divided by the total population of a country
Data Sources	❑ National Energy Balances compiled and population data by respective countries

Sources: https://unstats.un.org/sdgs/metadata

WORLD'S SELECTED INDICATORS FOR GOAL 7

WORLD'S SELECTED INDICATORS FOR GOAL 7

7.1.1: Proportion of Population with Access to Electricity, 2010 and 2020



NUMBER OF PEOPLE WITHOUT ELECTRICITY

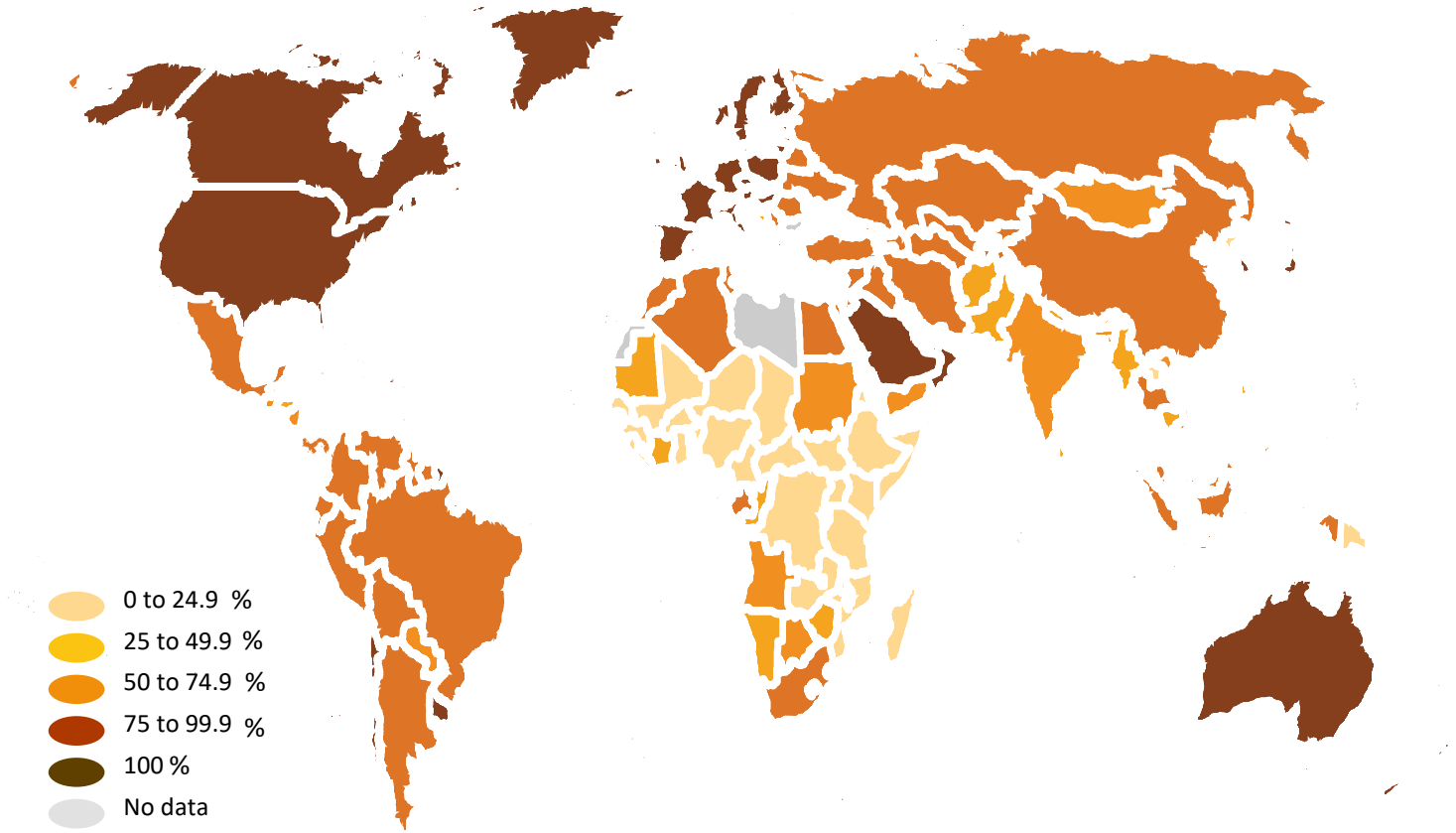
1.2 Billion	733 Million	679 Million
2010	2020	2030 Based on current trend

The global electricity access rate improved from 83% in 2010 to **91% in 2020.** Over this period, the number of people without electricity **shrank from 1.2 billion to 733 million**.

Sources: The Sustainable Development Goals Report 2022
https://unstats.un.org/sdgs/report/2022

WORLD'S SELECTED INDICATORS FOR GOAL 7

7.1.2: Share of The Population with Access to Clean Cooking Systems, 2020



2.4 BILLION PEOPLE

Still use inefficient and polluting cooking systems

(2020)

2010: 3 billion

In 2020, 69% of the global population were using **clean cooking fuels and technologies**, as compared to 57% in 2010.

Sources: The Sustainable Development Goals Report 2022
https://unstats.un.org/sdgs/report/2022

WORLD'S SELECTED INDICATORS FOR GOAL 7

7.2.1: Renewable Energy Share in The Total Final Energy Consumption, 2019

26.2%
Electricity Sector

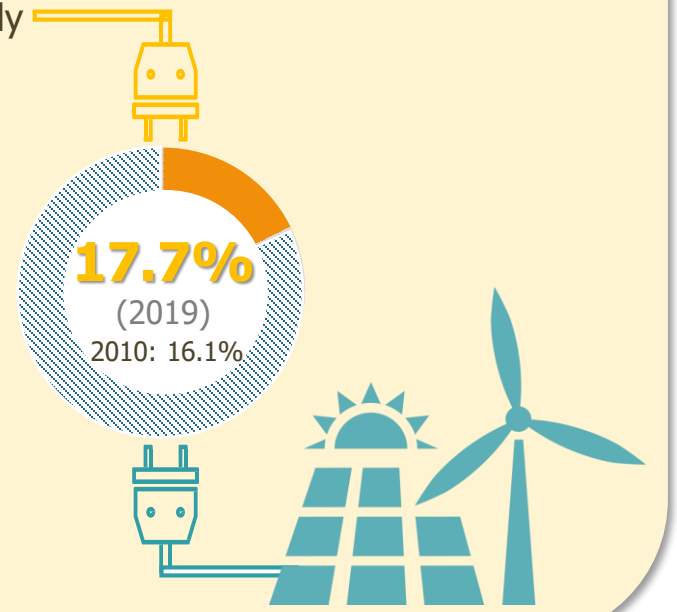
10.1%
Heat Sector

3.6%
Transport Sector

The share of renewable energy in total final energy consumption **reached 17.7% in 2019, 1.6% higher than in 2010**.

The main contribution was from the electricity sector, where the share of renewables now exceeds 26.2%. While, modern renewables for the heat and transport sectors penetrated 10.1% and 3.6% of the global market respectively.

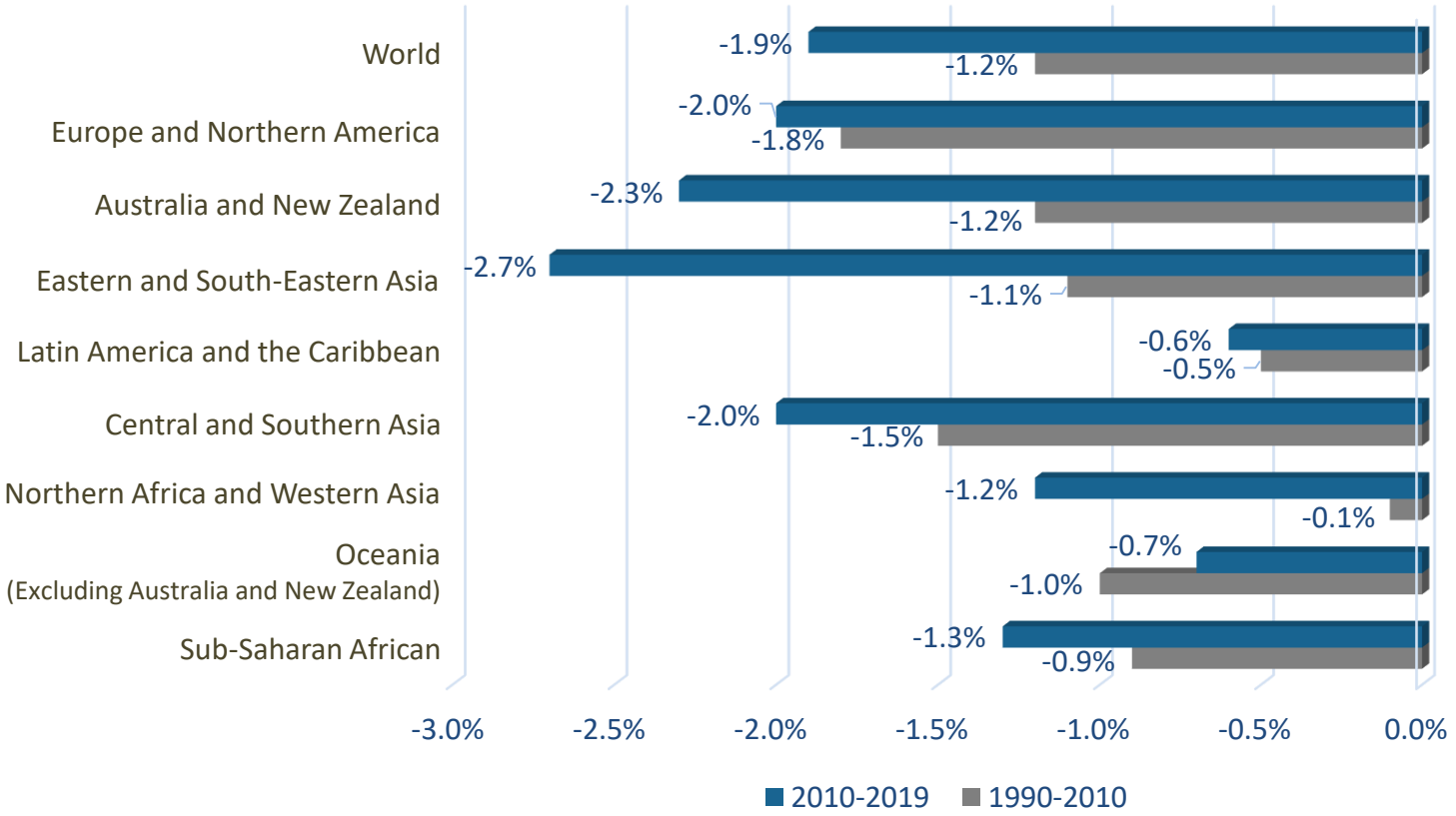
Total **RENEWABLE ENERGY** consumption **increased by a quarter** between 2010 and 2019, But the share of renewables in total final energy consumption is only



Sources: The Sustainable Development Goals Report 2022
https://unstats.un.org/sdgs/report/2022

WORLD'S SELECTED INDICATORS FOR GOAL 7

7.3.1: Average Annual Growth rate of Primary Energy Intensity, 1990-2010 and 2010-2019



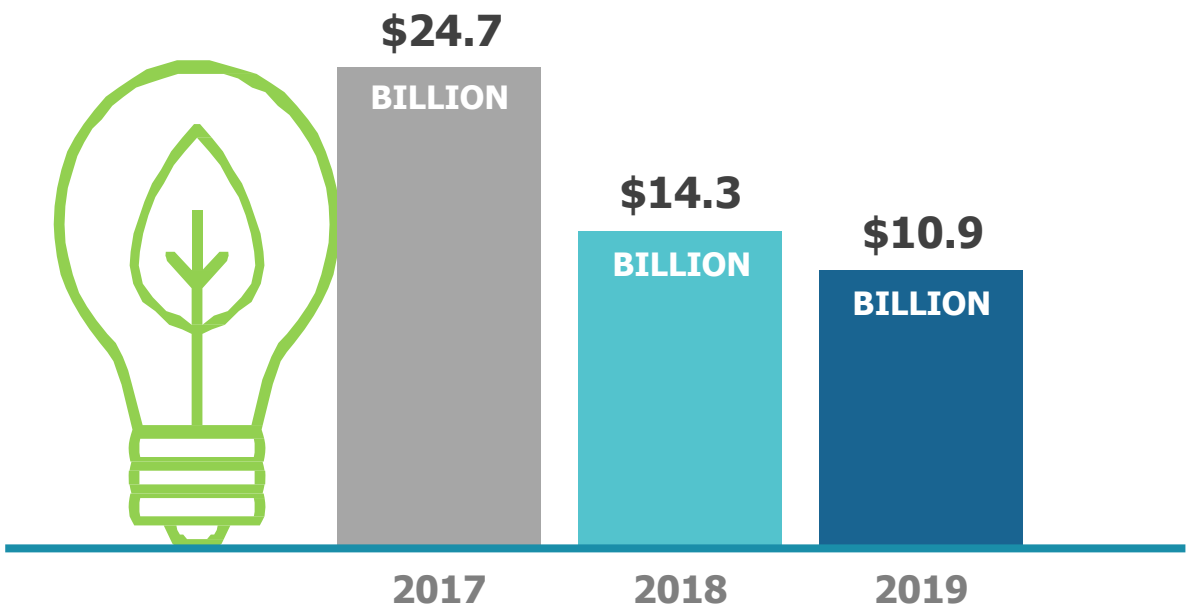
Global primary energy intensity **improved from 5.6 megajoules per US Dollar in 2010 to 4.7 in 2019, with an average annual improvement rate of 1.9%**.

To meet Goal 7 target and make up for lost time, energy intensity improvements until 2030 will need to **average 3.2% a year**.

Sources: The Sustainable Development Goals Report 2022
https://unstats.un.org/sdgs/report/2022

WORLD'S SELECTED INDICATORS FOR GOAL 7

7.a.1: International Financial Flows to Developing Countries for Renewables Energy, 2017-2019



International financial flows to developing countries in support of clean energy decreased for the second year in a row.

They **amounted to $10.9 billion in 2019 down by nearly 24%** from previous year.

Sources: The Sustainable Development Goals Report 2022
https://unstats.un.org/sdgs/report/2022

"STATISTICS BLOOM IN HARMONY"

Doesn't matter far or near
Strength in numbers
we don't live in fear

Birds of feather flock together
Statistics our form of adour
We, will always live it up

So let us live in solidarity
And in the world arena we'll succeed
It is statistics that will come to be
The reason we will bloom in harmony

Everybody undivided
Data's where our hearts reside in
There will always be a bind

Just like fire that ignites
That's how brightly lit our dreams are
We'll reach higher than the stars

Sending love to one another
Leaving no one in a slumber
We will stand with unity

Mustering our courage while
Embracing our disparities
We'll achieve our victory

One dream with unity
One love with harmony

" STATISTICS BLOOM IN HARMONY" VIDEO

https://bit.ly/StatisticsBloomInHarmony

THANK YOU

BANCI EKONOMI 2023
DATA PEMANGKIN EKONOMI NEGARA

20 OCT

2016 - 2030

PSSN

StatsMalaysia

www.DOSM.gov.my