# WORKSHOP 5

Environment and energy

SDGs 6 & 7

6 CLEAN WATER AND SANITATION

- Investing in adequate infrastructure, provide sanitation facilities, and encourage hygiene.
- Protecting and restoring water-related ecosystems.

7 AFFORDABLE AND CLEAN ENERGY

- Investing in solar, wind and thermal power, improving energy productivity, and ensuring energy for all.
- Expanding infrastructure and upgrading technology to provide clean and more efficient energy in all countries.
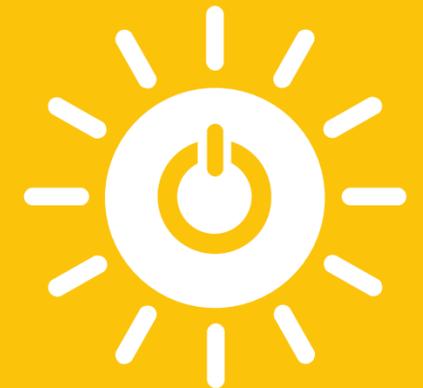
Sanitation

Basic sanitation = **having access to facilities for the safe disposal of human waste** (feces and urine), as well as **having the ability to maintain hygienic conditions**, through services such as garbage collection, industrial/hazardous waste management, and wastewater treatment and disposal.

Wastewater

Wastewater is used water.

It includes substances such as human waste, food scraps, oils, soaps and chemicals. In homes, this includes water from sinks, showers, bathtubs, toilets, washing machines and dishwashers.

Open defecation

Open defecation refers to the practise of defecating in fields, forests, bushes, bodies of water, or other open spaces. Open defecation perpetuates **a cycle of disease and poverty.**

The countries where open defection is most widespread have the highest number of **deaths of children aged under 5 years** as well as the highest levels of malnutrition and poverty, and big disparities of wealth.

The elimination of open defecation is recognized as a top priority for improving health, nutrition, and productivity of developing country populations.

Open defecation

From 2000-2020, **the number of people practising open defecation declined from 1,229 million to 494 million.**

In 2020, **more than 5% of the population still practised open defecation.**

9 out of 10 people practising open defecation lived in two regions: **Central and Southern Asia** (233 million) and Sub-Saharan Africa (197 million).

Menstrual health

Menstrual health refers to **a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity, in relation to the menstrual cycle.**

Menstrual health indicators are:

- Use of menstrual materials (sanitary pads, cloth, tampons, or cups).

- Access to a private place to wash and change protection while at home.

- Participation in activities during menstruation (school, work, social activities).

Benefits of improved sanitation

Promoting school attendance: girls' school attendance is particularly boosted by the provision of separate sanitary facilities.

Reducing the spread of intestinal worms, schistosomiasis and trachoma.

Reducing the severity and impact of malnutrition.

In Cambodia

- **The Department of Rural Water Supply** manages water supply in rural areas.

- **The Provincial Department of Rural Development and Commune Councils** are responsible for implementing, financing, and planning rural infrastructure.

- **Private sectors play a vital role in providing clean and safe water supply** to households in rural areas. They also provide materials, technical advice, facility management, maintenance and repair.

In Cambodia

Cambodia is one of the Asian countries with the **lowest levels of accessing improved water sources.**

Most urban populations enjoy safely managed and basic water access; **only 8%** live on unimproved water sources.

In 2020, only 27 % of households had access to safely managed drinking water, including:

- *43% to basic drinking water*
- *13% to limited water access*
- *5.6% live on unimproved water sources*
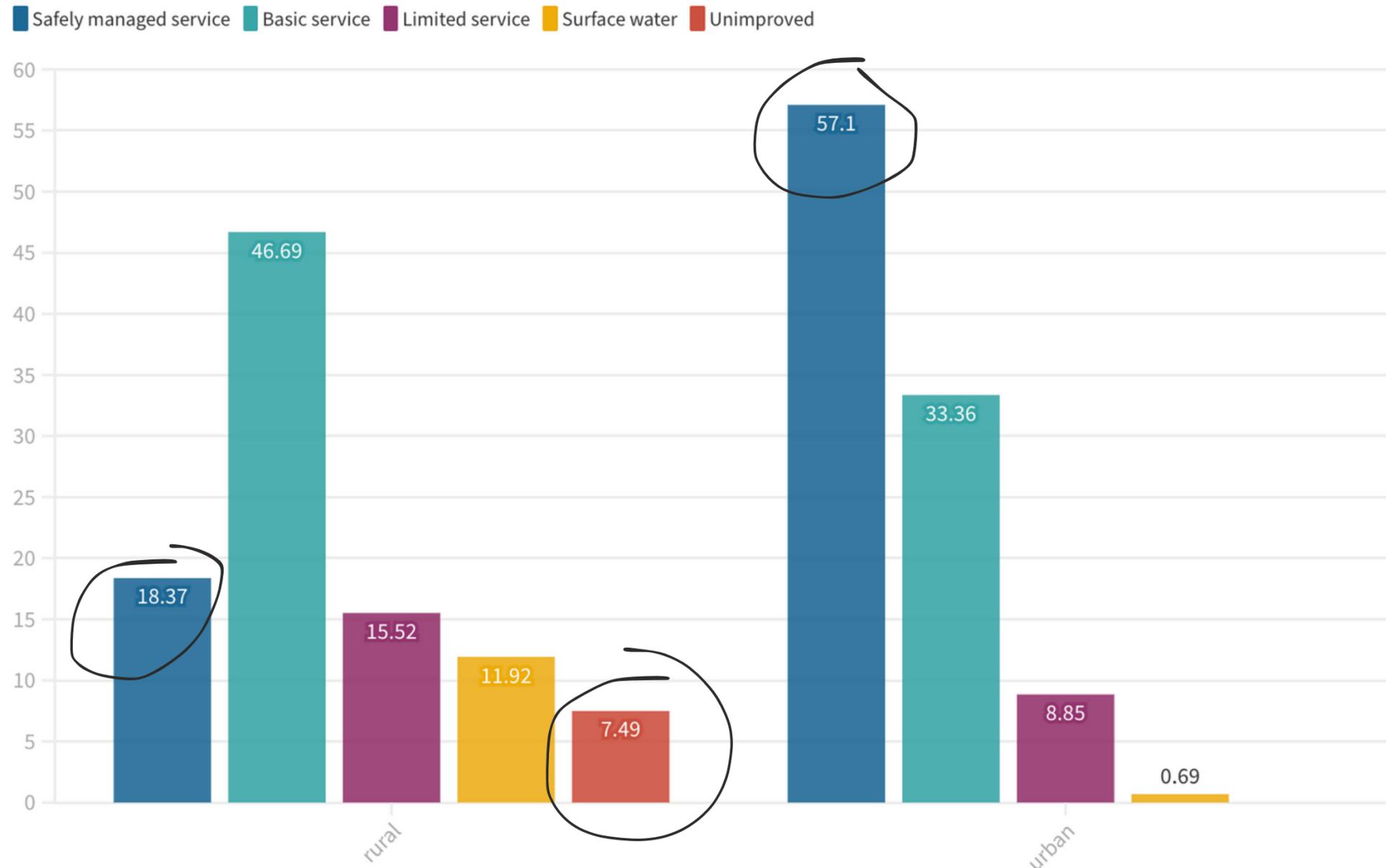- *9.2% depending on surface water.*

In Cambodia

In 2020

19% of the Cambodians have defecated outside with no access to basic toilets. This show significant improvement from 2005, when the number of people utilizing open defecation was around 69%.

Cambodia achieved **zero open defecation in urban areas**, though approximately 7% have limited sanitation access.

In Cambodia

Percentage of urban and rural household access to drinking water in 2020

■ Safely managed service ■ Basic service ■ Limited service ■ Surface water ■ Unimproved

rural
- Safely managed service: 18.37
- Basic service: 46.69
- Limited service: 15.52
- Surface water: 11.92
- Unimproved: 7.49

urban
- Safely managed service: 57.1
- Basic service: 33.36
- Limited service: 8.85
- Surface water: 0.69

Source: JMP

Around the world

In 2020, 54% of the global population used a safely managed sanitation service.

Over 1.7 billion people still do not have basic sanitation services, such as private toilets or latrines. Of these, 494 million still defecate in the open.

In 2020, 45% of the household wastewater generated globally was discharged without safe treatment.

At least 10% of the world's population is thought to consume food irrigated by wastewater.

SDG 7

Sustainability has increasingly become a rising concern for all areas of life, as well as the societal requirement **to take Earth's carrying capacity into account across all sections of life.**

Sustainable practices include:

- recognising the needs of everyone
- protecting the environment
- carefully using natural resources

Fossil fuels

Oil

Water

Gas

Oil

Water
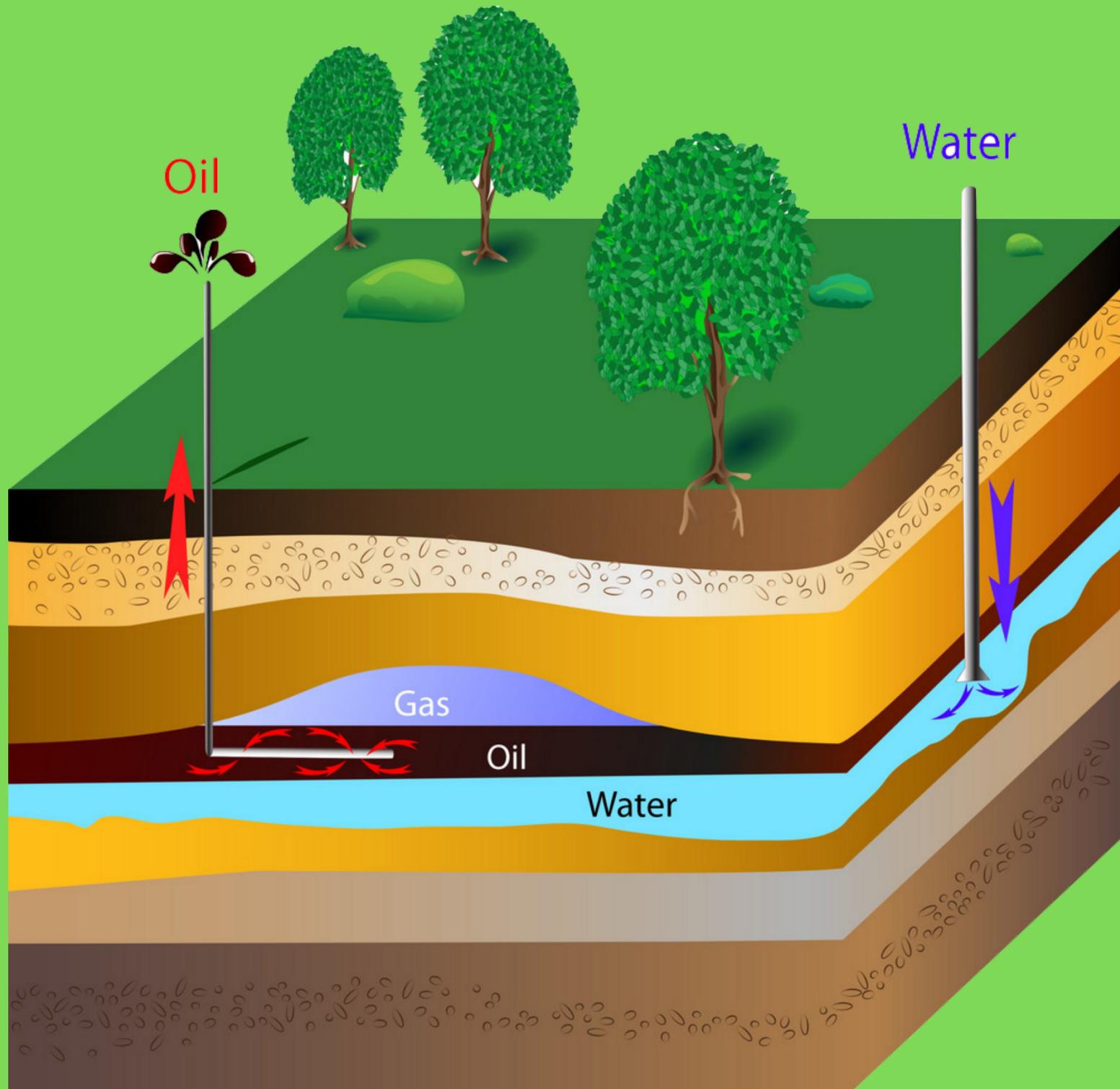
Fossil fuels are non-renewable sources of energy.

They currently **supply around 80% of the world's energy**. They are also used to make plastic, steel and a huge range of products.

There are **three types of fossil fuel – coal, oil and gas.**

Fossil fuels

When fossil fuels are burned, they **release large amounts of carbon dioxide**, a greenhouse gas, into the air.

Greenhouse gases trap heat in our atmosphere, **causing global warming**.

The global temperature has **already increased by one degree. Warming above 1.5°C** risks further sea level rise, extreme weather, biodiversity loss and species extinction, as well as worsening health and poverty for millions of people worldwide.

Fossil fuels

Emissions from fossil fuels are the dominant cause of global warming.

In 2018, 89% of global CO2 emissions came from fossil fuels and industry.

Coal is responsible for over 0.3C° of the 1C° increase in global average temperatures. This makes it the single largest source of global temperature rise.

Clean energy

Clean energy is energy that comes from renewable, zero emission sources that do not pollute the atmosphere when used.

A lot of clean energy is also renewable, including wind power, some hydro resources and solar powered energy generation.

There is a distinction between **clean, green and renewable energy:**

- Clean energy = clean air
- Green energy = natural sources
- Renewable energy = recyclable sources

Clean energy

Clean, renewable resources **preserve the world's natural resources** and **reduce the risk of environmental disasters**, such as fuel spills.

With fuel diversification, through different power plants using different energy sources, it is possible to **create reliable power supplies to enhance energy security**, ensuring there is enough to meet our demands.

Renewable energy

Renewable energy is **energy derived from natural sources that are replenished at a higher rate than they are consumed.**

Sunlight and wind, for example, are such sources that are constantly being replenished.

Transitioning from fossil fuels to renewable energy is key to addressing the climate crisis.

Renewable energy

Wind energy harnesses the kinetic energy of moving air by using large wind turbines located on land or in sea, or freshwater.

Solar energy is the most abundant of all energy resources. Solar technologies can deliver heat, cooling, natural lighting, electricity, and fuels.

Renewable energy

Geothermal energy utilizes the accessible thermal energy from the Earth's interior. Heat is extracted from geothermal reservoirs.

Hydropower harnesses the energy of water moving. It can be generated from reservoirs and rivers. Hydropower reservoirs often have multiple uses - providing drinking water, water for irrigation, flood and drought control, navigation services, as well as energy supply. **It is the largest source of renewable energy in the electricity sector.**

Renewable energy

Electricity from renewable sources **could provide 65% of the world's total electricity supply by 2030. It could decarbonize 90% of the power sector by 2050,** massively cutting carbon emissions and helping to mitigate climate change.

In Cambodia

Over the past 15 years, Cambodia's rapid population and economic growth have led to an **increase in electricity demand.**

Despite its renewable energy progress, **Cambodia is far from total decarbonisation.**

As of 2021, Cambodia saw over **51% of the country's domestic energy production come from renewable sources.** The majority was sourced from hydropower (44.17%), while solar and biomass accounted for around 7%.
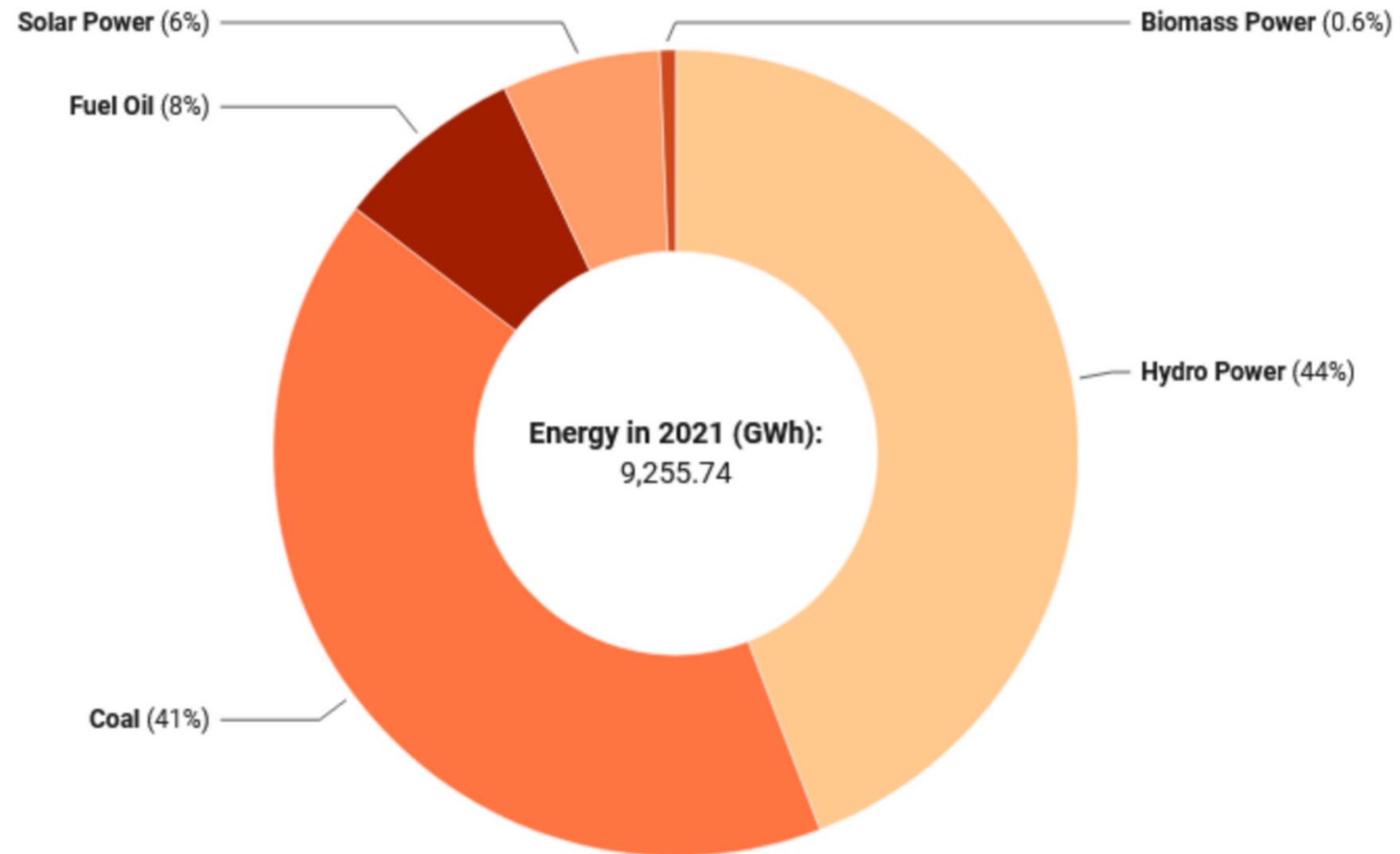
In Cambodia

Cambodia also suffers from high and often very volatile power costs, especially because most of the electricity in Cambodia is imported. Electricity prices, in 2020, reached both their lowest and the highest levels in the last 15 years.

Overall, compared to its Southeast Asian neighbours, **the county's electricity tariffs are significantly higher.**

Furthermore, **the country's electricity network lacks stability and often suffers from power cuts.**

ENERGY

In Cambodia

Solar Power (6%)

Fuel Oil (8%)

Biomass Power (0.6%)

Hydro Power (44%)

Energy in 2021 (GWh):
9,255.74

Coal (41%)

Cambodia's Domestic Energy Supply. Source: *Electricity Authority of Cambodia*

Around the world

About 29% of electricity currently comes from renewable sources.

Cheap electricity from renewable sources could provide 65% of the world's total electricity supply by 2030. It could decarbonize 90% of the power sector by 2050, massively cutting carbon emissions.

Prices for renewable energy technologies are dropping rapidly. **The cost of electricity from solar power fell by 85% between 2010 and 2020.**

Every dollar of investment in renewables creates 3 times more jobs than in the fossil fuel industry.

Around the world

The **Covid-19 pandemic** had far-reaching impacts on energy demand in 2020, **reducing global CO2 emissions by 5.2%.**

Coal accounted for over 40% of the overall growth in global CO2 emissions in 2021.

The biggest increase in CO2 emissions in 2021 took place in electricity and heat production. **China accounted for almost all of the global increase in electricity** and heat sector emissions between 2019 and 2021.

Around the world

10 countries that produce the most emissions, measured in millions of tons of CO_2 in 2019.

- China, more than 10,065 million tons of CO_2
- United States, 5,416 million tons of CO_2
- India, 2,654 million tons of CO_2
- Russia, 1,711 million tons of CO_2
- Japan, 1,162 million tons of CO_2
- Germany, 759 million tons of CO_2
- Iran, 720 million tons of CO_2
- South Korea, 659 million tons of CO_2
- Saudi Arabia, 621 million tons of CO_2
- Indonesia, 615 million tons of CO_2

Who can help?

Actors working on the topic of WASH (Water Sanitation and Hygiene)

- Water Aid
https://www.wateraid.org/where-we-work/cambodia

- Plan International
https://plan-international.org/cambodia/what-we-do/water-sanitation-hygiene/

- Unicef
https://www.unicef.org/cambodia/water-sanitation-and-hygiene

- Asian Development Bank
https://www.adb.org/news/adb-help-cambodia-expand-access-water-supply-sanitation-services

What can we do?

Boosting access to safe sanitation and hygiene

- upgrade water sources and develop new sources that are resilient to droughts and floods.

- bring basic sanitation and hygiene facilities to homes, schools and health centres, so that children can live, study and access health services in a safer environment.

- work with schools for designing menstrual facilities.

- build wells to access safe water (https://www.wateraid.org/where-we-work/cambodia).

What can we do?

Helping people understand the value of using toilets, clean water and soap

- bridge the gap between building toilets and hand-washing basins and people actually using them.

- motivate children and their communities to seek safe water and sanitation facilities at home, at school and in the community.

- promote the adoption of clean water consumption, hygiene and sanitation practices.

- educate on hygiene and sanitation.

- raise awareness on the use of toilets in rural areas.

What can we do?

Work in partnerships with different actors including NGO's, government and private sector

Embracing low-cost solutions

- such as solar energy. It will improve energy security and increase access and economic competitiveness.

Optimizing and prioritizing the use of domestic energy resources