



COMMENTARY



## Renewable Energy Sources and Long-term Development

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### Description

Renewable energy is energy derived from renewable resources that are replenished naturally over time. Renewable energies include natural light, air, rain, tides, waves, and geothermal heat. Several renewable energy sources are not sustainable, regardless of the fact that the majority of them are. At current rates of extraction, some biomass sources, for example, are deemed unsustainable. Renewable energy is frequently used to generate electricity for the grid, heat and cool air and water, and power stand-alone systems. Renewable energy accounts for about 20% of global energy consumption, including nearly 30% of electricity. Traditional biomass accounts for about 8% of total energy consumption, but this is decreasing. Heat energy from modern renewables, such as solar water heating, accounts for over 4% of total energy consumption, while electricity accounts for over 6%. Renewable energy industries employ over 10 million people worldwide, with solar photovoltaics being the largest renewable employer. Renewable energy systems are rapidly improving in efficiency and cost, and their share of total energy consumption is growing, with renewable energy accounting for the vast majority of newly installed electricity capacity worldwide. The cheapest new-build electricity in most countries is photovoltaic solar or onshore wind. Renewable energy development and use will enhance energy security, the climate, the economic system, mechanical manufacturing, construction, transportation, and industry, as well as contribute to the creation of new jobs. Solar, wind, and biomass energy can help meet local energy needs while also helping to preserve the environment.

Renewable energy already accounts for more than 20%

of the global energy supply, with some countries generating more than half of their electricity from renewables. In the 2020s and beyond, national renewable energy markets are expected to grow rapidly. Only a few countries use renewable energy to generate all of their electricity. In contrast to fossil fuels, which are concentrated in a small number of countries, renewable energy resources are widely distributed. Energy security, climate change mitigation and economic benefits are all being realised as a result of the deployment of renewable energy and energy efficiency technologies. Renewables, on the other hand, is hampered by hundreds of billions of dollars in fossil fuel subsidies. Renewable energy sources such as solar and wind power have strong public support in international polls. However, the International Energy Agency stated in 2021 that more effort is needed to increase renewables in order to achieve net-zero carbon emissions, and that generation should increase by about 12% per year until 2030. Renewable energy technology projects are usually large-scale, but they are also appropriate for rural and remote areas, as well as developing countries, where energy is often a critical factor in human development. Because most renewable energy sources produce electricity, they are frequently combined with the additional power sector, which has several economic benefits: excess energy can be converted to heat, physical biomass can be utilized with high efficiency, and it is clean at the spot of use. Furthermore, electrification using renewable energy is more efficient, resulting in significant reductions in primary energy usage. China was responsible for nearly half of the increase in renewable energy in 2021. Norway, which is known for its hydropower production, used 45 percent of its total energy supply in 2021.