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THE IMPORTANCE OF REPLACING NUCLEAR POWER WITH RENEWABLE ENERGY

There are many advantages of nuclear energy, but they have significantly faded in the eyes of the world community after the two most serious accidents: Chernobyl nuclear power plant in 1986 and Fukushima-1 nuclear power plant in 2011. Therefore, alternative solutions should be found to reduce or replace nuclear power plants.

The world needs energy to support everyday life and drive human and economic development. Broadly speaking, there are two types of low-carbon power generation source: renewable energy and nuclear energy. Renewable energy sources are resources that can be used to produce energy continuously, and include solar energy, wind energy, biomass energy, and geothermal energy, among others.

The use of renewable energy sources is growing rapidly, but renewable energy currently accounts for only about 3% of the world's primary energy consumption and supplies about 14% of the total world energy demand. The worldwide share of renewable energy sources is expected to increase significantly from 30% to 80% by 2100.

Nuclear energy is another low-carbon power generation method that accounts for approximately 20% of the world electricity. From the second half of the 2000s until the Fukushima incident, nuclear power had been gaining popularity due to increasing concern over global warming as a result of the use of fossil fuels. However, Fukushima and Chernobyl altered the public perception of nuclear power. Renewable energy technologies are sometimes seen as direct substitutes for existing technologies, and their benefits and costs are conceived in terms of assessment methods developed for existing technologies. Such power generation units can provide small advanced-capacity additions to existing energy systems with short lead times and more flexibility compared with large, long lead-time units, such as nuclear power stations.

Therefore, the development of advanced renewable energy technologies that serve as cost-effective and environmentally responsible alternatives to conventional energy generation is necessary.