



# Environmental renewable energy and its resource

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**Received:** 07-Feb-2022, Manuscript No. GJEST-22-59569; **Editor assigned:** 10-Feb-2022, PreQC No. GJEST-22-59569 (PQ); **Reviewed:** 24-Feb-2022, QC No. GJEST-22-59569; **Revised:** 03-Mar-2022, Manuscript No. GJEST-22-59569 (R); **Published:** 10-Mar-2022, DOI: 10.15651/GJEST.22.10.001.

## DESCRIPTION

Renewable energy is booming as innovation cuts costs and begins to deliver on the promise of a clean energy future. American solar and wind production is breaking records and has been integrated into the national grid without compromising reliability. This means that renewable fuels are increasingly displacing dirty fossil fuels in the electricity sector, offering the benefit of lower carbon emissions and other types of pollution. But not all energy resources sold as "renewable" are environmentally friendly. Biomass and large hydroelectric dams create the most difficult transactions when considering the impact on wildlife, climate change and other issues.

Renewable energy, often referred to as clean energy, is constantly being replaced by natural resources or processes. For example, sunlight or wind will continue to shine and blow, despite their availability depending on time and weather. Although renewable energy is often considered a new technology, the use of natural energy has long been used for heating, transportation, lighting and more. The wind powers the boats to sail the seas and there are windmills to grind the grain. The sun provided warmth during the day and helped to extinguish the fire. But over the past 500 years, humans have increasingly turned to cheaper energy sources such as coal and frozen gas.

Now that we have innovative and low-cost ways to capture and retain wind and solar energy, renewable energy is being used in the U.S. Becoming a more important power source with more than an eighth share in production. The expansion in renewables is also taking place on large and small scales, from rooftop solar panels on homes to large offshore wind farms that can resell electricity back to the grid. Some entire rural communities also rely on renewable energy for heating and lighting. As renewable energy consumption continues to grow, an important goal is to modernize America's power grid, make it smarter, secure, and better integrate into regions.

## Non-renewable Energy

Non-renewable or dirty energy consists of fossil fuels such as oil, gas and coal. Renewable energy sources are only available in limited quantities and take a long time to replenish. When we pump gas at the station, we use limited resources that have been refined from prehistoric crude oil.

Renewable energy sources are also commonly found in specific parts of the world. In contrast, every country has access to sunlight and air. Giving priority to renewable energy will improve national security by reducing the country's dependence on exports from fossil fuel rich countries. Many renewable energy sources are harmful to the environment or human health. For example, oil-drilling may require strip-mining Canada's boreal forest, a technology that causes earthquakes and water pollution, and coal-fired power plants abuse air. To overcome this, all of these activities contribute to global warming.

## Solar Energy

Humans have been using solar energy for thousands of years-to grow crops, to keep warm, and to dry foods. According to the national renewable energy laboratory, the energy taken by the earth in one hour from the sun is greater than the energy used by everyone in the world in a year. Today we use sunlight in many ways, for hot water or electrical appliances etc.

Solar, or Photovoltaic (PV), particles are made of silicon or other material that converts sunlight directly into electricity. Distributed solar systems generate electricity locally for homes and businesses, through roof panels or community projects that power entire neighborhoods. Solar fields can generate energy for thousands of homes, and can be used to focus sunlight on more than an acre of solar cells. Floating solar forms or "photovoltaic" - can make efficient use of environmentally sensitive non-wastewater facilities and water resources. U.S. Solar supplies just over 1 percent of electricity generation.

However in 2017 almost one-third of the total new generation capacity came from solar energy, which is second only to natural gas. Solar energy systems do not produce air pollutants or greenhouse gases and as long as they are responsible, most solar panels have minimal environmental impact beyond the manufacturing process.

### **Wind Energy**

We came a long way from the old-fashioned windmills. Today, turbines as tall as skyscrapers, as wide as they

are attracting worldwide attention. Wind power replaces the turbine blades, which feed the electric generator and generate electricity.

Wind, which accounts for a little more than 6 percent of U.S. generation, has become the cheapest energy source in many parts of the country. There are top wind power states such as California, Texas, Oklahoma, Kansas and Iowa, but turbines can be placed anywhere on high cliffs and in open fields or even offshore open water at high wind speeds.