

Opinion Article

Role of Renewable Energy Sources and their Uses in Geothermal Temperatures

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Description

Especially in view of growing knowledge of the negative environmental effects of fossil-based generation, the development and use of renewable energy should be given top attention. A cleaner and more sustainable energy system may, however, almost certainly be produced by using renewable energy sources rather than tighter regulations on traditional energy systems. We can easily meet our energy needs by using coal, oil, and natural gas, but there is a finite amount of these fuels available on Earth. Much faster than they are being produced, we are utilizing them.

Utilization of renewable energy can overcome the gap. Renewable energy sources are better for the environment than fossil fuels, even if they were indefinitely plentiful. Most climatologists agree that the Earth's average temperature has risen during the last century. Scientists expect that as sea levels rise, extreme weather events such as floods, heat waves, droughts, and other natural disasters may become more frequent there are several applications for renewable energy. Today, most of us use renewable energy in our daily lives.

Hydropower

In order to maintain a sizable water reservoir, the most typical hydropower method involves a dam on a river. Power is produced by releasing water through turbines. However, "run of the river" systems redirect water away from the river and send it down a pipeline to a turbine. To simulate the natural flow of the river, some of them are diverting a portion of the flow around their dams. In order to aid fish migration and reduce the amount of fish that are killed, additional methods including enhanced turbines and fish ladders are also being deployed.

Bioenergy

Bioenergy has been used by everybody who has ever used a campfire or fireplace to burn wood. However, not all of our biomass comes from plants like trees or other types of vegetation. Large amounts of unwanted or leftover biomass, which can be used as a bioenergy source, can be produced by a variety of sectors, such as those involved in construction or the processing of agricultural products.

Bio power

A low-cost way to cut back on unwelcome emissions has been discovered by several utilities and power generating firms using coal power plants: substituting some coal with biomass. The use of biomass could reduce the amount of coal used by up to 15%. More Sulphur is present in coal than biomass. These boilers emit less nitrous oxide while utilizing biomass, which is another benefit. The conversion of biomass into gas, which is then burned in a gas turbine, is a process known as gasification. This is another method of producing energy. Additionally, gas, primarily methane, is created as biomass decomposes in landfills. This gas can be burned in a



boiler to create steam, which is then used in industrial operations or to generate power.

Biofuels

Biofuels are preferred to power stationary power generation and sometimes transportation because of their high energy density and ease of movement. The most widely used biofuel is ethanol, an alcohol produced through the fermentation of biomass that contains a lot of carbs. Alaska, Hawaii, and the western states of the United States contain the majority of the country's geothermal reservoirs. GHPs, on the other hand, are practically ubiquitous.

Geothermal Electricity Production

To operate a traditional steam turbine, which in turn drives an electric generator, hot water or steam is piped up from the well. The renewable energy cycle is then finished by typically pumping the water back into the ground to refuel the reservoir. Dry steam, flash steam, and binary cycle are the three different types of geothermal power plants. Flash steam and binary cycle plants draw from hot water reservoirs, whereas dry steam plants draw from steam reservoirs.

Bio based Products

Cornstarch is already being used in the manufacturing of common plastics, including shrink wrap, plastic dining utensils, and even car bumpers. The production of thermoset polymers, such as electrical switch plate covers, from wood waste is currently being pursued commercially.

Geothermal Energy

In the process of heating the surroundings and creating underground reservoirs of hot water and steam, this heat-producing geothermal energy flows outward from the center. These reservoirs can be used for a multitude of things, like heating houses or producing energy.

Geothermal Direct Use

Direct-use applications need geothermal temperatures that are between 70 and 302°F lower than those needed for energy generation. Most systems pump water through a device known as a heat exchanger; however some systems use water directly. The water and a working fluid, which is heated by geothermal water, are kept apart by a heat exchanger.