

Ocean

Ocean energy refers to the energy that can be derived from the wind that is converted into useful electrical or mechanical energy. Initial ocean energy potential sites identified include



the Hinatuan Passage, Camarines, Northeastern Samar, Surigao, Batanes Island, Catanduanes, Tacloban, San Bernardino Strait, Babuyan Island, Ilocos Norte, Siargao Island and Davao Oriental.

Wind

Wind Energy refers to the energy that can be derived from the wind that is converted into useful electrical or mechanical energy.

The Philippines, being situated on the fringes of the Asia-Pacific monsoon belt, exhibits a promising potential for wind energy.



Wind Energy is usually high in coastlines and mountains. Currently, the Philippines has a wind farm situated in Bangui Bay, Ilocos Norte.



DEPARTMENT OF ENERGY

Consumer Welfare and Promotion Office
Ground Floor, Annex Building
Energy Center, Fort Bonifacio
Taguig, MM
Hotline: (02) 840-2267
Trunkline: (02) 479-2900 loc 329
www.doe.gov.ph

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DEPARTMENT OF ENERGY

The BIGSHOW

(Biomass, Geothermal, Solar, Hydro, Ocean and Wind Energy)

A Primer on Renewable Energy Sources



A LOOK ON RENEWABLE ENERGY...

WHAT IS RENEWABLE ENERGY?

Renewable Energy (RE) is energy generated by conversion from resources which do not have an upper limit on the total quantity to be used; are renewable on a regular basis; and whose renewal rate is relatively rapid to consider availability over an indefinite period of time. These renewable resources include, among others, biomass, solar, wind, geothermal, ocean energy, and hydropower.

Renewable Energy is often called "Green Energy" as they come from natural sources and do not emit greenhouse gases (GHG) and other pollutants that are harmful to the environment.



Biomass

Biomass resources refer to non-fossilized, biodegradable organic material originating from naturally occurring or cultured plants, animals and microorganisms, including agricultural products, by-products and residues.



Energy is acquired from these resources when they undergo either thermochemical, biochemical or physico-chemical processes where they produce heat, steam, mechanical power and electricity.

Geothermal



Geothermal energy comes from mineral resources in the form of: (a) all products of geothermal process, embracing indigenous steam, hot water, and hot brines; (b) steam and other gases, hot water, and hot brines resulting from water, gas, or other fluids artificially introduced into geothermal formations; (c) heat or associated energy found in geothermal formations; (d) any by-products derived from them.

Energy is produced in two ways: through natural recharge in which water is replenished by rainfall and the heat is continuously produced inside the earth; and/or enhanced recharge (hot water



used in geothermal process is re-injected into the ground to produce more steam as well as to provide additional recharge to the convection system).

Solar

Solar energy refers to energy derived from solar radiation that can be converted into useful thermal or electrical energy, which can be used in households, roadway lighting, etc. Solar energy is captured and stored in photovoltaic or solar cells.



Hydro

Hydroelectric power refers to power generated from water resources such as rivers, lakes, waterfalls, irrigation canals, springs, ponds, and other water bodies. Energy is produced by utilizing the kinetic energy of falling or running water to turn a turbine generator.



Hydro plants are classified based on their capacities: (a) Microhydro (1 -100 kW); (b) Minihydro (101 kW -10 MW); (c) Large Hydro (more than 10 MW).