Alternative Energy Resources in Maryland

Below is a short summary of alternative energy resources for Maryland. For more information on each technology, visit the State Energy Alternatives Technology Options page.

For more information, including links to resource maps, energy statistics, and contacts for Maryland, visit EERE's State Activities and Partnerships Web site's Maryland page.

Biomass

Studies indicate that Maryland has good biomass resource potential. For more state-specific resource information, see Biomass Feedstock Availability in the United States: 1999 State Level Analysis.

Geothermal

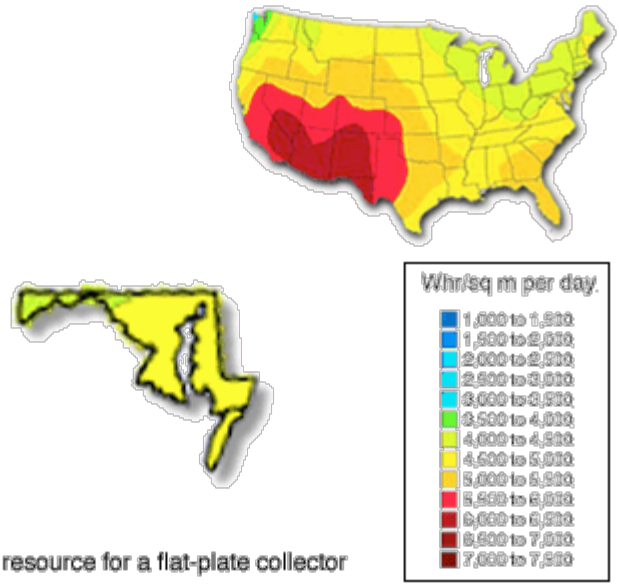
Maryland has vast low-temperature resources suitable for geothermal heat pumps. However, Maryland does not have sufficient resources to use the other geothermal technologies.

Hydropower

Maryland has a relatively low hydropower resource as a percentage of the state's electricity generation. For additional resource information, check out the Idaho National Laboratory's Virtual Hydropower Prospector (VHP). VHP is a convenient geographic information system (GIS) tool designed to assist you in locating and assessing natural stream water energy resources in the United States.

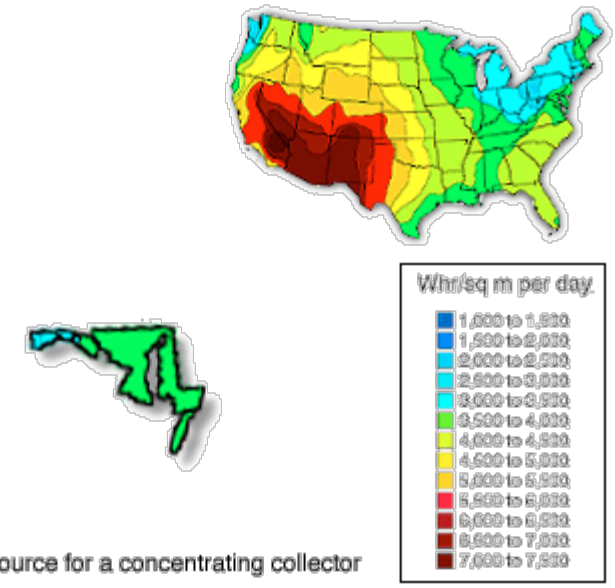
Solar

To accurately portray your state's solar resource, we need two maps. That is because different collector types use the sun in different ways. Collectors that focus the sun (like



Solar resource for a flat-plate collector

a magnifying glass) can reach high



Solar resource for a concentrating collector

temperatures and efficiencies. These are called concentrating collectors. Typically, these collectors are on a tracker, so they always face the sun directly. Because these collectors focus the sun's rays, they only use the direct rays coming straight from the sun.

Other solar collectors are simply flat panels that can be mounted on a roof or on the ground. Called flat-plate collectors, these are typically fixed in a tilted position correlated to the latitude of the location. This allows the collector to best capture the sun. These collectors can use both the direct rays from the sun and reflected light that comes through a cloud or off the ground. Because they use all available sunlight, flat-plate collectors are the best choice for many northern states. Therefore, this site gives you two maps: one is the resource for a concentrating collector and one is the resource for a flat-plate collector.

What do the maps mean? For flat-plate collectors, Maryland has a good, useful solar resource throughout most of the state. For concentrating collectors, Maryland has a marginal resource. Although certain technologies may work in specific applications, most concentrating collectors are not effective with this resource.

Wind

Wind Powering America indicates that Maryland has wind resources consistent with utility-scale production. Several areas are estimated to have good to excellent wind resource. These are the barrier islands along the Atlantic coast, the southeastern shore of Chesapeake Bay, and ridge crests in the western part of the state, west of Cumberland. In addition, small wind turbines may have applications in some areas. For more information on wind in Maryland, including maps, visit Wind Powering America's State Wind Activities.

Energy Efficiency

Energy efficiency means doing the same work, or more, and enjoying the same comfort level with less energy. Consequently, energy efficiency can be considered part of your state's energy resource base — a demand side resource. Unlike energy conservation, which is rooted in behavior, energy efficiency is technology-based. This means the savings may be predicted by engineering calculations, and they are sustained over time. Examples of energy efficiency measures and equipment include compact fluorescent light bulbs (CFLs), and high efficiency air conditioners, refrigerators, boilers, and chillers.

Saving energy through efficiency is less expensive than building new power plants. Utilities can plan for, invest in, and add up technology-based energy efficiency measures and, as a consequence, defer or avoid the need to build a new power plant. In this way, Austin, Texas, aggregated enough energy savings to offset the need for a planned 450-megawatt coal-fired power plant. Austin achieved these savings during a decade when the local economy grew by 46% and the population doubled. In addition, the savings from energy efficiency are significantly greater than one might expect, because no energy is needed to generate, transmit, distribute, and store energy before it reaches the end user.

Reduced fuel use, and the resulting decreased pollution, provide short- and long-term economic and health benefits.

For more information on current state policies related to energy efficiency, visit the Alliance to Save Energy's State Energy Efficiency Index.

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