

By Geoff Griswold

Alternative Energy Sources

What Does It Mean for Hotels?



In the most recent State of the Union address the need for alternative energy sources to fossil fuels was emphasized. The President highlighted the fact that dependence on foreign sources of energy is a threat to national security.

With this topic getting attention from the very highest level of U.S. government, let's review what some alternative energy sources are, their limitations and how they can affect hotels.

There are only two types of energy: renewable which is unlimited and non-renewable which as we all have heard will eventually run out. Renewable energy includes wood or other biomass, wind energy, solar energy, fusion and hydropower. Nonrenewable energy includes fossil fuels, coal, geothermal energy and nuclear fission.

Many think of solar power as a main alternative source of energy. Solar cells have been around for a long time and have had some success in hotels.

Passive solar energy is where panels are placed in strategic locations to help heat certain areas of a hotel. The panels direct the sun's warmth to an area where fans circulate it. Active solar energy produces limited quantities of electricity or heats water pipes for guest hot water and other applications.

Solar energy is not constant, however. Overcast skies, shortened days in winter, and long nights restrict the use of solar energy. Significant amounts of electricity cannot be stored when the sun is unavailable, requiring backup systems in some cases. Solar panels are expensive and approximately 10 percent of them have to be replaced each year.

Coal is also thought to be a viable alternative energy product. There are a limited number of coal boilers in hotels today and modern coal burning furnaces can be purchased from several manufacturers. These units are installed outdoors and are more efficient than the classic models. While coal is plentiful, it does have to be mined, transported, and stored. Ample supply chain availability may not exist in all areas.

South Africa has several coal to oil production plants, which were built during the days of apartheid because oil imports were limited. These plants produce oil at an acceptable volume and cost. However, the capital investment to build such a plant is estimated at \$6 billion. And keep in mind there are valid environmental concerns about coal mining and burning.

Wind energy is a promising area of energy production. Wind farms have been constructed in some areas to produce electricity. Inland sites are usually placed where wind funnels through mountains or hills. Wind power is completely environmentally safe, producing no types of pollutants. However, wind power can be intermittent. Significant power generation requires a good deal of windmills in one farm, thus affecting scenery. Wind farms are such a danger to birds that the Audubon Society has sued to block new wind farms in some areas.

It is possible that individual hotels will have their own wind electrical generating capacity, onsite, sometime in the future. The technology is progressing and wind power generated electricity may be more widely available in the future.

For properties located on a coastline, wave power may be a future source of energy. This technology requires building damming estuaries to facilitate power generation. This approach can have a significant negative effect on the environment. While not currently available, a smaller scale wave power generator may be developed in the future that could be of value to coastal hotels.

Biomass production is the use of garbage or vegetation to produce electricity. Decomposing garbage produces methane that can be captured and burned as a fuel. This represents a good example of recycling and is considered a renewable source. While biomass holds promise for hotels to be able to buy electricity created from it, it is very doubtful that standalone applications of this technology will be available.

For hotels with a large number of vehicles, ethanol is being discussed as a viable alternative to gasoline. Ethanol is produced from corn or other organic crops.

Brazil had declared energy independence by producing large quantities of ethanol from sugar cane. Using pure ethanol requires a vehicle with a flexible engine, one capable of sensing whether the tank is filled with ethanol or gasoline. This technology is not to be confused with a hybrid, which runs on either gas or electricity. Ethanol production in the United States has not reached the scale necessary for it to be less expensive than gasoline. An unpleasant side effect of the production that does exist is that the price of corn has risen significantly. Corn is the main feed used in beef production and for cows that produce milk. While ethanol may help lower the cost of fuel, it can cause increases in the price of some food products. Sources other than corn can be used to produce ethanol, however.

Even with many promising alternative energy sources, hoteliers should not forget that conservation is the key to efficient energy use, no matter what the source of the energy may be.

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