



# EMERALD KEEPERS

For an Emerald Green, Ocean Blue Coronado

## RENEWABLE ENERGY: A POWERFUL OPPORTUNITY

In our past three installments, Emerald Keepers discussed climate change, a process driven largely by burning fossil fuel and deforestation, excessively increasing greenhouse gas levels in our atmosphere. If you missed these stories, they are available on our website under media. Industrialization has brought about many good things, and much of the world is still modernizing. Today, we take a look at renewable energy resources as key to maintaining economic productivity and social well-being while reducing harmful emissions.

### WHAT IS RENEWABLE ENERGY?

Renewable energy comes from naturally replenishing sources, unlike non-renewable energy, which draws upon finite resources. Because these resources do not require tapping into the historical stockpile of carbon that resides in fossil fuels, little to no greenhouse gas emissions are associated with them. About 11% of total energy used in the United States comes from renewable sources, according to the most recent available measure assessed in 2019. That is triple the amount consumed at the turn of this century.

### THE TYPES OF RENEWABLE ENERGY

Renewable resources and energy collection strategies will be vital to reaching our mid-century carbon neutrality goals combatting the effects of climate change. Here is a breakdown of the types of renewables that make up a growing portion of our energy consumption pie based upon 2019 renewable energy consumption data:

- **Biomass - 43%** The “OG” or original source of energy for humans, biomass includes simplistic wood burning as well as new technologies exploring the use of algae and the organic component of municipal and industrial wastes to generate energy.
- **Wind - 24%** Land-based, offshore, and distributed wind energy systems capture the kinetic energy of air flow due to the uneven heating of the earth’s surface by the sun. Wind energy is found throughout the world, with the world’s second-largest on-shore wind farm here in California and the highest installed wind capacity in Germany.
- **Hydropower - 22%** Using a dam or diversion structure to channel the flow of water, hydropower technologies convert the water’s motion into electricity. Although legitimate environmental concerns have been levied against hydropower in the past, increasingly, hydropower usage is focused upon reducing adverse effects on fish and natural habits while offering a sustainable, zero-emission energy resource.
- **Solar - 9%** The sun is the ultimate source for all energy sources. Moreover, the abundance of solar energy offers tremendous opportunity. More energy from



the sun falls on the earth in a little over an hour than what the entire world uses in the course of a year!

Boasting the largest solar market in the U.S., more than 20% of California’s electricity is solar generated. Solar production in the state falls into two categories: 1) solar thermal uses the heat of the sun to make steam for turbine generated electrical production, while 2) photovoltaic, often abbreviated “PV,” converts sunlight directly into electricity. Either way, the plummeting cost of solar in the past decade leads experts to project this technology is revolutionizing our energy system.

• **Geothermal - 2%** Geothermal energy taps into the available heat naturally found within the earth. Although this renewable resource does not provide a significant amount of U.S. energy, geothermal energy is very valuable in key parts of the world where major tectonic plate boundaries allow for access. As a result, the majority of domestic geothermal power production is in California and the western states.

### THE BENEFITS OF RENEWABLE ENERGY

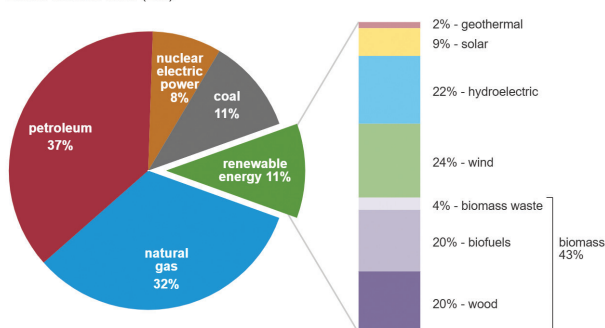
In conjunction with other clean/low-carbon energy sources and energy efficiency efforts, renewable energy use offers a powerful strategy for moving away from fossil fuels. Such a move not only aligns with our goal of reducing greenhouse gas emissions, but also reduces air pollution, decreases U.S. dependency on foreign oil, and is creating new, sustainable employment opportunities. Most importantly, Coronado households can make this shift themselves, installing renewable energy home features and/or selecting EcoChoice and EcoShare options with SDG&E.



U.S. primary energy consumption by energy source, 2019

total = 100.2 quadrillion British thermal units (Btu)

total = 11.4 quadrillion Btu



Note: Sum of components may not equal 100% because of independent rounding. Source: U.S. Energy Information Administration, Monthly Energy Review, Table 1.3 and 10.1, April 2020, preliminary data

Sources: [www.nrel.gov/research/learning.html](http://www.nrel.gov/research/learning.html), [www.eia.gov/energyexplained/renewable-sources/](http://www.eia.gov/energyexplained/renewable-sources/)

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