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# Hawaii moving in right direction to kick its reliance on fossil fuels

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By Barry Raleigh

Most energy experts are convinced that the days of cheap oil are over. The search for alternatives has brought new and competing technologies into play, especially for electricity generation.

When the hype is removed, however, and the marketplace rules over our primary energy choices, oil, coal and, increasingly, wind power are still the winners. For transportation fuels, nothing beats oil, although \$5-a-gallon gasoline would forever change our driving habits.



This state and others have taken the position that the transition to non-fossil-fuel energy needs to begin now to soften the economic blow of \$100-a-barrel oil five to 10 years from now. It's the right thing to do for environmental and geopolitical reasons, as well. We don't want to become irrevocably enmeshed in Middle Eastern resource wars.

Despite the optimism that we will learn to wean ourselves off cheap oil, there is no easy way. Wind power at 6 cents to 7 cents per kilowatt-hour is as cheap as fossil fuel power, but it isn't available on demand. No wind, no electricity.

We also need to weigh economics against aesthetics when costly oil drives us to cheap wind power to avoid a recession.

Photovoltaic (solar) power, aside from its high cost of 30 cents per kilowatt-hour, suffers from not being available at night. With energy storage and small, efficient generators, the user can become independent but at a price that is not competitive yet with electricity off the grid. Kauai's electricity, however, at about 27 cents per kilowatt-hour, is expensive enough that the consumer might give serious thought to the solar alternative.

Hawaii has adopted Renewable Portfolio Standards, introduced on the mainland to mandate annual increases in the share of renewable electricity generation up to 20 percent of the total by 2020.

Hawaii, however, is unlike the mainland in the way we distribute power. A California utility, for example, when becalmed, can buy through the grid from an independent wind-power generator in Wyoming and satisfy its obligation to supply power to its customers. If the wind isn't blowing on Oahu, however, Hawaiian Electric Co. has to deliver power from a reliable, fossil fuel-fired plant.

Until we can produce renewable energy on demand, therefore, utilities on the islands will have to maintain generating capacity equal to the maximum expected load.

This would mean that additional demand would mandate new, fossil fuel-fired plants unless we are cleverer about managing our demand.

Solar water heaters, subsidized by both the state and Hawaiian Electric, reduce consumption by storing the energy of the sun in a hot-water tank previously heated by electricity. We are able to conserve considerably more electricity than we do through improved lighting, air conditioning and electric motors. Moreover, after the cost of hardware is paid off -- usually about 10 years -- conservation continues to save money by reducing electrical bills. Possibly, the widespread implementation of these conservation measures will stave off the construction of new fossil fuel-fired plants for decades.

Retrofitting of state buildings in Hawaii for energy conservation was given a boost by the Legislature in the 2004 session. Private properties can get income tax credits for installing solar or wind energy systems. Carrots are being held out to developers of sea-water air conditioning in the form of special revenue bonds for financing.

To encourage utilities, not only renewable energy purchased for resale by the utility is to be counted; energy savings from energy conservation measures of all sorts may be used in counting the renewable portion of the Renewable Portfolio Standard.

The Legislature deserves considerable credit for providing incentives to keep our renewable and energy conservation options as open as possible. The utilities are required to buy electricity from renewable sources, but only if the cost is at or below what it would cost them to generate it.

The 20 percent of renewables by 2020 is a target figure and not designed to hurt utilities' financial performance. Individuals and corporations have tax incentives to explore their own energy strategies.

Where we are headed for now seems right. There is no one solution, but rather a mix of technologies and strategies that we will need to employ to begin kicking the fossil fuel habit in our electricity generation. No one of the proposed alternatives to fossil fuels is going to get us very far very quickly. There is really no choice but to proceed with some haste, however, and move with the advance of technology.

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