

July 31, 2008

Watch Wind Turbines on Hot August Days

By Roger Nunley

How's this for lights out? Imagine depending on wind for all the electricity we need.

In his roadmap for America's energy future, oil entrepreneur and corporate raider T. Boone Pickens says that we can meet all of our electricity requirements by building wind turbines across the Midwest from the Texas Panhandle to the Dakotas. Wind energy, he says, would free up large volumes of natural gas for automobiles instead of wasting the clean-burning fuel on electricity generation. But Pickens, however well-intentioned in his quest to break America's dependence on foreign oil, ignores a fundamental principle of electricity production: It must be reliable.

Wind energy is intermittent and unpredictable. The wind blows on some days and doesn't on others. On the hottest days in America's heartland, when electricity is needed most, there's usually not enough of a breeze to stir a leaf. Back-up power from fossil fuels is needed on those days when the weather isn't cooperating. Even so, businesses and industries in Texas and California, the two states with the largest amount of wind energy, have had to shut down on hot summer days when there hasn't been enough wind generation.

So a policy that relies heavily on wind flies in the face of a sensible strategy. Despite federal clean-energy tax credits and mandates requiring the use of renewable energy sources in half of the states, wind energy provides only one percent of America's electricity. Wind will not give us anything like energy independence. Nor will solar power. According to the U.S. Energy Information Administration, in 2007 wind turbines had a capacity factor of 30%, meaning they produced electricity, on average, 30% of the time. The capacity factor of solar power was even less, at 19%. By comparison, the capacity factor of coal plants was 72% and nuclear plants, 91%. Even environmentalists should reconsider their infatuation with renewable energy sources.

If we're serious about reducing oil imports, here are some ways that, over time, will give us a fighting chance to regain control of our energy situation. The formula for progress is opening up the throttle on development of clean-coal technology, domestic oil and natural gas, and nuclear power.

Coal is our nation's principal source of electricity, accounting for 52% of U.S. electricity generation and 60% of Nebraska's power. Our energy security therefore requires coal.

Contrary to the assertions of ardent environmentalists like Al Gore, who wants to stop the use of coal within a decade, now is the time to get serious about increasing domestic production.

Across the country, coal-fueled power plants are using new technological advances to improve efficiency and reduce airborne emissions. The Environmental Protection Agency reports that since 1980 coal plants have reduced sulfur dioxide emissions by 40% and nitrogen oxides by 44%, while power output rose 77%.

New techniques now on the horizon could help resolve the carbon issue. Research to improve coal combustion by 10%, if successful, would result in a 25% drop in carbon dioxide emissions. It's going to cost billions to capture and store carbon dioxide emissions from coal plants underground, but if this means we'll be able to continue using our most abundant fuel, it will be well worth it. Large-scale projects are slated to be launched soon to demonstrate the capture of carbon emissions and their storage in deep underground oil and natural gas fields.

We already have considerable experience with carbon injection underground. For years, it's been one of the methods used to enhance the recovery of oil and natural gas. By pumping carbon dioxide into a well, it's possible to recover as much as 80% of the fuel, whereas producers previously could recover only 15% or less. Such enhanced recovery has helped to make up for declining production from depleted oil and gas wells.

The opportunity to increase U.S. oil and gas production is too sensible to ignore, and Congress should lift the ban on drilling along 85% of the Outer Continental Shelf. Not making use of potentially sizable energy resources in the Atlantic, Pacific and the eastern Gulf of Mexico is shortsighted. America has everything to gain by reducing its dependence on OPEC oil.

On energy, though, policymakers give great credence to environmental concerns, but not enough to the economy. We need both a clean environment and a sound economy. Among sources of electricity generation, nuclear power should be central. It is safe, reliable and affordable. Nuclear power plants don't pollute the air or emit greenhouse gases. The cost of producing nuclear-generated electricity is less than that for power plants that use fossil fuels. And nuclear power is free of foreign control.

Despite its outstanding record, energy prophets like T. Boone Pickens and Al Gore have relegated nuclear power to the same twilight zone as whale oil. Nuclear power deserves better. It's not the problem – it's part of the solution.