

Five myths about green energy

Robert Bryce, *Washington Post*, 5-2-10

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Americans are being inundated with claims about renewable and alternative energy. Advocates for these technologies say that if we jettison fossil fuels, we'll breathe easier, stop global warming and revolutionize our economy. Yes, “green” energy has great emotional and political appeal. But before we wrap all our hopes — and subsidies — in it, let's take a hard look at some common misconceptions about what “green” means.

1. Solar and wind power are the greenest of them all.

Unfortunately, solar and wind technologies require huge amounts of land to deliver relatively small amounts of energy, disrupting natural habitats. Even an aging natural gas well producing 60,000 cubic feet per day generates more than 20 times the watts per square meter of a wind turbine. A nuclear power plant cranks out about 56 watts per square meter, eight times as much as is derived from solar photovoltaic installations. The real estate that wind and solar energy demand led the Nature Conservancy to issue a report last year critical of “energy sprawl,” including tens of thousands of miles of high-voltage transmission lines needed to carry electricity from wind and solar installations to distant cities.

Nor does wind energy substantially reduce CO2 emissions. Since the wind doesn't always blow, utilities must use gas- or coal-fired generators to offset wind's unreliability. The result is minimal — or no — carbon dioxide reduction.

Denmark, the poster child for wind energy boosters, more than doubled its production of wind energy between 1999 and 2007. Yet data from Energinet.dk, the operator of Denmark's natural gas and electricity grids, show that carbon dioxide emissions from electricity generation in 2007 were at about the same level as they were back in 1990, before the country began its frenzied construction of turbines. Denmark has done a good job of keeping its overall carbon dioxide emissions flat, but that is in large part because of near-zero population growth and exorbitant energy taxes, not wind energy. And through 2017, the Danes foresee no decrease in carbon dioxide emissions from electricity generation.

2. Going green will reduce our dependence on imports from unsavory regimes.

In the new green economy, batteries are not included. Neither are many of the “rare earth” elements that are essential ingredients in most alternative energy technologies. Instead of relying on the diversity of the global oil market — about 20 countries each produce at least 1 million barrels of crude per day — the United States will be increasingly reliant on just one supplier, China, for elements known as lanthanides. Lanthanum, neodymium, dysprosium and other rare earth elements used in products from high-capacity batteries and hybrid-electric vehicles to wind turbines and oil refinery catalysts.

China controls between 95 and 100 percent of the global market in these elements. And the Chinese government is reducing its exports of lanthanides to ensure an adequate supply for its domestic manufacturers. Politicians love to demonize oil-exporting countries such as Saudi Arabia and Iran, but adopting the technologies needed to drastically cut U.S. oil consumption will dramatically increase America's dependence on China.

3. A green American economy will create green American jobs.

In a global market, American wind turbine manufacturers face the same problem as American shoe manufacturers: high domestic labor costs.

If U.S. companies want to make turbines, they will have to compete with China, which not only controls the market for neodymium, a critical ingredient in turbine magnets, but has access to very cheap employees.

The Chinese have also signaled their willingness to lose money on solar panels in order to gain market share. China's share of the world's solar module business has grown from about 7 percent in 2005 to about 25 percent in 2009.

Meanwhile, the very concept of a green job is not well defined. Is a job still green if it's created not by the market, but by subsidy or mandate? Consider the claims being made by the subsidy-dependent corn ethanol industry. Growth Energy, an industry lobby group, says increasing the percentage of ethanol blended into the U.S. gasoline supply would create 136,000 jobs. But an analysis by the Environmental Working Group found that no more than 27,000 jobs would be created, and each one could cost taxpayers as much as \$446,000 per year. Sure, the government can create more green jobs. But at what cost?

4. Electric cars will substantially reduce demand for oil.

Nissan and Tesla are just two of the manufacturers that are increasing production of all-electric cars. But in the electric car's century-long history, failure tailgates failure.

In 1911, the New York Times declared that the electric car “has long been recognized as the ideal” because it “is cleaner and quieter” and “much more economical” than its gasoline-fueled cousins. But the same unreliability of electric car batteries that flummoxed Thomas Edison persists today.

Those who believe that Detroit unplugged the electric car are mistaken. Electric cars haven't been sidelined by a cabal to sell internal combustion engines or a lack of political will but by physics and math. Gasoline contains about 80times as much energy, by weight, as the best lithium-ion battery. Sure, the electric motor is more efficient than the internal combustion engine, but can we depend on batteries that are notoriously finicky, short-lived and take hours to recharge? Speaking of recharging, last June, the Government Accountability Office reported that about 40 percent of consumers do not have access to an outlet near their vehicle at home.

The electric car is the next big thing — and it always will be.

5. The United States lags behind other rich countries in going green.

Over the past three decades, the United States has improved its energy efficiency as much as or more than other developed countries. According to data from the Energy Information Administration, average per capita energy consumption in the United States fell by 2.5 percent from 1980 through 2006. That reduction was greater than in any other developed country except Switzerland and Denmark, and the United States achieved it without participating in the Kyoto Protocol or creating an emissions trading system like the one employed in Europe. EIA data also show that the United States has been among the best at reducing the amount of carbon dioxide emitted per \$1 of GDP and the amount of energy consumed per \$1 of GDP.

America's move toward a more service-based economy that is less dependent on heavy industry and manufacturing is driving this improvement. In addition, the proliferation of computer chips in everything from automobiles to programmable thermostats is wringing more useful work out of each unit of energy consumed.

The United States will continue going green by simply allowing engineers and entrepreneurs to do what they do best: make products that are faster, cheaper and more efficient than the ones they made the year before.