

The Pickens Plan: Is It the Answer to Our Energy Needs?

By Mary J. Hutzler*

T. Boone Pickens is calling for wind and natural gas to be used to replace imported oil, providing a transition to new “alternative” technology developments that are supposed to meet future U.S. energy requirements. In particular, his plan calls for wind to replace natural gas in the electric-generation sector and for natural gas to replace petroleum in the transportation sector, thereby displacing 30–50 percent of U.S. foreign-oil imports over the next 10 years. His plan is fraught with problems, however, including its reliance on an intermittent technology (wind) to generate more than 20 percent of our electricity needs and its goal of converting our transportation fleet to a fuel that the United States already imports (natural gas). Yet the plan is virtually risk free for T. Boone Pickens, who can probably make a 25 percent return at the expense of taxpayers and electric customers, owing to federal and state energy and tax subsidies.

Problems with Wind

Wind power is an intermittent producer of electricity, dependent on when the wind blows to turn the turbine blades. It represents about 1 percent of our electricity generation and 0.3 percent of our energy demand,¹ with an average capacity factor of only 25 percent,² and, in the best areas, a capacity factor of 35 to 40 percent.³ In contrast, most of the natural-gas fired capacity added since the late 1980s has been combined-cycle technology with much higher capacity factors and availability of 88 percent.⁴ Natural gas currently provides 21 percent of our electricity generation and 23 percent of our energy demand,⁵ and is usually regarded as the technology that backs up wind generation when the wind doesn’t blow.

A recent report by the U.S. Department of Energy’s Office of Energy Efficiency and Renewable Energy (EERE), entitled “20% Wind Energy by 2030,”⁶ envisions wind production on the order that Pickens is advocating, but at a slower pace of development. According to the DOE, 293 gigawatts of new wind capacity would be required,⁷ or more than 13 gigawatts each and every year, a yearly increase almost equal to the 2007 level of installed wind capacity in the United States.⁸ This growth in wind turbine capacity would require siting wind units on publicly owned lands (where a large percentage of the development sites are located), continued taxpayer-funded subsidies, the building of power lines from the remote areas where wind turbines are located, and the public’s acceptance of noise and other wind-related effects.⁹ The “not-in-my-back-yard” syndrome, the cost of construction, and the technological expertise needed will likely combine to prevent the level of increase projected by the Pickens plan. For evidence, consider Cape Wind, a proposed wind farm off the coast of Nantucket that has been subjected to years of costly delays by opponents of the project.¹⁰

Wind facilities are often hundreds of miles away from consumers and require a massive investment in transmission lines to deliver electricity from the facility to the power grid. Texas officials, for example, recently approved a \$4.9 billion wind power project that will add more than 2,000 miles of heavy duty transmission lines from wind centers in West Texas to major population hubs in Austin, Dallas/Fort Worth, and Houston, among other areas. This project will result in a \$4-a-month increase in the electricity bills of Texas consumers.¹¹ As this example shows, additional costs will have to be levied on consumers to pay for the transmission lines needed for Pickens’s massive undertaking. And with line losses of power close to 10 percent, the electricity available to the consumer will be further reduced.

Problems with Natural-Gas Vehicles

But it is not just the wind component of Pickens’s plan that is troubling. The cost of changing America’s fleet of vehicles to natural gas will also mean expenses for consumers, either to buy a new vehicle or to convert an existing one. Honda’s price for a new natural gas-fueled Civic is 62 percent higher than its price for a standard gasoline-fueled model (\$9,685 higher).¹² And the costs of converting an existing automobile to natural gas range between \$6000 and \$20,000. Add to this, the money needed to purchase and install a home refueling station—about \$5,000—and the 20 hours needed to fill it—all of this yielding a range of only 250 miles per tankful.¹³ To get consumers to switch fuels, government mandates will probably be needed, requiring manufacturers to produce and sell mostly natural gas-fueled vehicles. Since less than 1 percent of the current retail service stations have natural gas facilities,¹⁴ consumers will also need to pay the infrastructure costs of converting current retail service stations to natural gas. Plus, consumers will need to give up half their vehicle’s trunk space for the tank that holds the natural gas.¹⁵

Another issue is the cost and availability of the energy to fuel the vehicle. The United States already relies on other countries for 20 percent of its natural

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See footnotes at end of text.

gas supplies,¹⁶ importing natural gas from Canada via pipeline and from other countries via liquefied natural gas (LNG).¹⁷ More LNG facilities are currently being built,¹⁸ reflecting the expectation of more imported natural gas. Unfortunately, because natural gas is increasingly part of a global market, the stability of its future price can be affected by other countries. The countries with the largest reserves of natural gas are Russia, Iran, and Qatar, which together hold almost 60 percent of the world's total.¹⁹ They have, in the past, discussed the formation of a natural gas cartel.²⁰ Thus, the result of the Pickens plan could be that the United States becomes dependent on foreign sources of natural gas, transitioning the United States from an oil-cartel customer to a natural gas-cartel customer.

Options and Benefits

While all of the above issues exist for the American taxpayers and consumers, the plan is virtually risk-free for T. Boone Pickens, owing to federal and state tax incentives and subsidies. These incentives include a federal Wind Production Tax Credit of \$0.02 cents per kilowatt-hour for electricity produced during the first ten years of operation; a federal income tax incentive consisting of a five-year, double declining balance accelerated depreciation; a Texas franchise break allowing a corporation to deduct the cost of a wind facility from its franchise tax; Texas's Renewable Energy Credits and its Renewable Portfolio Standard, which require a growing amount of electricity sold in Texas to come from renewable energy; and a Texas mandate that requires transmission capacity to be built and the cost to be borne by electric customers.²¹ Without these subsidies, Pickens's investment in a 4,000-megawatt wind facility would probably not generate a 25-percent return.

So, what is the alternative? The National Petroleum Council's report "Hard Truths"²² indicated that the United States needs all fuel types—renewables, nuclear, and fossil fuels. The United States has massive resources of coal (more than 200 years' worth at current consumption rates),²³ which can continue to supply base-load electricity at or above its current 50-percent level of electricity generation.²⁴ Coal power can be supplemented by generation from nuclear, natural gas, hydroelectric, and renewable sources such as wind, solar, and biomass. The country just needs to allow the construction of generating facilities from non-renewable as well as renewable sources.

Biofuels are already supplementing our transportation fuels, and they will supply an increasing amount in order to meet the targets in the Renewable Fuel Standard (RFS). World reserves of oil total 1.3 trillion barrels, the highest level in history.²⁵ The Energy Information Administration's Annual Energy Outlook 2009²⁶—which incorporates in its forecast the RFS, the new Corporate Average Fuel Efficiency Standards for transportation vehicles, and offshore drilling—indicates that our net dependence on oil imports could be reduced from its current level of 58 percent to 41 percent by 2030.²⁷ If the Alaskan Natural Wildlife Refuge were opened to drilling, another 1 million barrels of production would be available, reducing net oil imports to 36 percent. This reduction in oil imports is about equivalent to our current level of imports from OPEC countries.²⁸ The United States also has 2 trillion barrels of shale oil (the most in the world), with 800 billion barrels estimated to be recoverable²⁹ and available to further reduce our imports of oil.

This alternative does not require the infrastructure and life-style changes that could result from the Pickens plan. It just requires the government to allow the federal lands on which these resources are located to be leased and developed. While Pickens needs the government to subsidize, mandate, and in other ways support a plan that would result in consumers and taxpayers paying more for their energy, the government could instead allow access and use of its domestic energy resources, resulting in increased energy security, revenues from resource development, and the use of existing delivery systems.

Footnotes

¹ Energy Information Administration (EIA), Monthly Energy Review (MER), Table 1.2, http://www.eia.doe.gov/emeu/mer/pdf/pages/sec1_5.pdf

² Energy Information Administration, Annual Energy Review 2007, http://www.eia.doe.gov/emeu/aer/pdf/pages/sec8_8.pdf and http://www.eia.doe.gov/emeu/aer/pdf/pages/sec8_42.pdf

³ <http://instituteeforenergyresearch.org/2008/07/10/pitfalls-in-the-pickens-plan/>

⁴ North American Electric Reliability Council, <http://www.nerc.com/page.php?cid=4|43|47>.

⁵ Energy Information Administration, Annual Energy Review 2007, http://www.eia.doe.gov/emeu/aer/pdf/pages/sec1_9.pdf and http://www.eia.doe.gov/emeu/aer/pdf/pages/sec8_8.pdf

⁶ DOE, EERE, "20% Wind Energy by 2030," May 2008, <http://www1.eere.energy.gov/windandhydro/pdfs/41869.pdf>

⁷ This level of wind production is significantly more than the generation level that the Energy Information

Administration is projecting in their Annual Energy Outlook 2009 assuming current tax incentives and mandates by both Federal and State governments. See <http://www.eia.doe.gov/oiaf/aeo/pdf/appa.pdf>

⁸ Energy Information Administration, Annual Energy Review 2007, http://www.eia.doe.gov/emeu/aer/pdf/pages/sec8_42.pdf

⁹ “U.S. DOE Report ‘20% Wind Energy by 2030’ Presents Implausible Scenario,” <http://www.windaction.org/releases/16239> .

¹⁰ <http://washingtontimes.com/news/2009/jan/17/interior-issues-drilling-proposal/?page=2> and <http://www.eenews.net/climatewire/2008/12/19/archive/5?terms=wind>

¹¹ <http://www.statesman.com/news/content/news/stories/local/07/18/0718wind.html>

¹² <http://automobiles.honda.com/civic/>

¹³ Reece Epstein and David A. Ridenour, “The Pickens Plan: Questions Unanswered,” <http://www.nationalcenter.org/NPA574.html>

¹⁴ Department of Energy, http://www.eere.energy.gov/afdc/fuels/sztations_counts.html

¹⁵ <http://automobiles.honda.com/images/2008/civic-sedan/downloads/2008-civic-sedan-factsheet.pdf> and <http://automobiles.honda.com/images/2008/civic-gx/downloads/2008-civic-gx-factsheet.pdf>

¹⁶ Energy Information Administration, Annual Energy Review 2007, Table 6.1, http://www.eia.doe.gov/emeu/aer/pdf/pages/sec6_5.pdf.

¹⁷ Energy Information Administration, Annual Energy Review 2007, Table 6.3, http://www.eia.doe.gov/emeu/aer/pdf/pages/sec6_9.pdf

¹⁸ Federal regulators approve Baltimore LNG facility, refuse re-hearings on 2 others, <http://www.eenews.net/eenewspm/2009/01/15/8>

¹⁹ Energy Information Administration, International Energy Outlook 2008, Table 6, http://www.eia.doe.gov/oiaf/ieo/nat_gas.html

²⁰ Russia, Iran and Qatar announce cartel that will control 60% of world’s gas supplies, October 22, 2008, <http://www.guardian.co.uk/business/2008/oct/22/gas-russia-gazprom-iran-qatar>

²¹ <http://www.instituteforenergyresearch.org/2008/09/26/financial-incentives-behind-the-pickens-plan/>

²² <http://www.npchartruthsreport.org/>

²³ <http://www.instituteforenergyresearch.org/energy-overview/coal/>

²⁴ Energy Information Administration, Annual Energy Review 2007, http://www.eia.doe.gov/emeu/aer/pdf/pages/sec8_8.pdf

²⁵ Energy Information Administration, Annual Energy Review 2007, Table 11.4, http://www.eia.doe.gov/emeu/aer/pdf/pages/sec11_9.pdf and <http://www.instituteforenergyresearch.org/2008/08/26/has-oil-reached-its-peak/>

²⁶ Energy Information Administration, Annual Energy Outlook 2009, <http://www.eia.doe.gov/oiaf/aeo/index.html>

²⁷ Energy information Administration, Annual Energy Outlook 2009, http://www.eia.doe.gov/oiaf/aeo/aeo2009_presentation.html

²⁸ Energy Information Administration, Annual Energy Review 2007, Table 5.4, http://www.eia.doe.gov/emeu/aer/pdf/pages/sec5_11.pdf

²⁹ <http://www.instituteforenergyresearch.org/oil-shale/>

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