

Wean foreign energy dependence with switch to more natural gas

Huge shale deposits, including north Alabama's "Black Water Basin," could help fuel vehicles

By T. Boone Pickens
For The Times

America's dangerous dependence on foreign oil continues to put our national security at risk. Last month alone we imported 350 million barrels of oil at a cost of \$25.6 billion.

As we continue to import about 60 percent of the oil we need every day, America is at great risk of allowing foreign countries to dictate our energy future - and these are countries that are not particularly friendly to us.

But Americans are catching on to the dangers associated with our addiction to foreign oil. Earlier this week, 250 people gathered in New York City to acknowledge that imported oil is the biggest threat to our national security by presenting me with an award which stated: For his outstanding leadership toward American energy independence, the American Security Council Foundation proudly presents T. Boone Pickens with its Lifetime Achievement Award in Public Service for Economic Security.

When we began the Pickens Plan 16 months ago, oil prices were sky high but no one had a clue as to what to do about it. Since then the elements of the plan - wind and solar energy, a smart grid, and energy efficiency - have all been dealt with in Congress. The one remaining issue, the big one, is natural gas.

We've known for a long time that the vast shale deposits in the U.S. contained enormous amounts of natural gas. But it wasn't until drilling techniques were developed over the past decade that we have been able to recover that natural gas in a commercially vi-

able and environmentally safe manner.

This past June the highly respected Potential Gas Committee released its biennial study in conjunction with the Colorado School of Mines indicating that the amount of natural gas reserves had jumped to some 2,000 trillion cubic feet (Tcf) meaning we have enough gas in the continental United States to last about 118 years.

The four largest shale deposits are located in Texas, Louisiana, Arkansas and Appalachia. But significant sources of natural gas are also available in shale plays in places like the Chattanooga shale deposit which extends into northern Alabama. The area in Alabama is known to geologists as the "Black Water Basin."

Why is all this natural gas of such interest? Because natural gas is the only fuel which can replace diesel to move an 18-wheeler. About half of the oil we import is refined into diesel to move goods across and around America.

Heavy duty trucks are replaced on a fairly tight schedule by both small and large trucking companies. It is estimated that, if we started now, within seven years we could essentially replace the current fleet of 6.5 million trucks burning imported diesel with trucks running on domestic natural gas. That alone would reduce our need to import oil from OPEC countries by half.

We have focused on these trucks not only because of the huge amount of imported oil they account for, but because of the infrastructure connected with changing out the heavy truck fleet. Over-the-road trucks tend to run the same routes on a regular schedule. Drivers stop at the same truck stops to eat, rest and refuel. So unlike attempting to meet the needs of passenger cars, the number of natural gas refueling facilities for 18-wheelers

is easily manageable.

In fact any fleet operation - municipal and school buses; city, county, and state vehicles; express delivery and utility trucks - any vehicle which goes home to "the barn" every night is a candidate for running on natural gas.

Over the next 20-30 years new technologies will emerge as transportation fuels. Most likely these will be enhanced batteries and hydrogen fuel cells. When they come on-line it will be a great benefit to begin replacing the 250 million private cars and light trucks with vehicles which can run on non-fossil fuels.

But that day isn't today, and won't be here tomorrow. Natural gas is an off-the-shelf technology which has been proven in the 10 million natural gas vehicles which are on the roads around the world. But only about 130,000 of those are here in the United States.

Right now, a bill in the U.S. Congress - The NAT GAS Act - is gathering momentum in both the U.S. House and the U.S. Senate. This bill would jump start the natural gas vehicle industry in the United States by providing tax incentives for fleet operators to replace their cars and trucks with natural gas powered vehicles.

Natural gas is cleaner and cheaper than diesel. It is available in huge quantities, and it is ours. That's all in the Pickens Plan. If you don't like my plan, what's yours?

T. Boone Pickens is chairman and CEO of BP Capital, which operates energy-focused commodity and equity funds. In July 2008, Pickens launched the Pickens Plan, a grassroots campaign aimed at reducing this country's crippling dependence on imported oil. His book, "The First Billion is the Hardest," details what this country must do to win back its energy independence.



Pickens



Thomas Russell
Community columnist

Advice from a dithering columnist

As my year as a community columnist for *The Huntsville Times* comes to an end, I wonder if I've helped anyone. I wonder if you've been encouraged to laugh, or think, or cuss, or maybe learn something that you didn't know. Coming up with a good piece is an easy thing for some writers.

Not for me. Half the time I'm late with my piece. Although, I've have successfully worked it out in my head to feel better about my tardiness. I've actually developed a slogan as my reason.

I will serve no column before it's time. I'd like to say that I made that up, so I will.

I made that up. With me it's more than dithering. I even went to a shrink to find out why I dither. She spent a year studying my problem. Predictability, I have spent even longer trying to decide whether or not to go back and get her recommendations. She didn't dither on billing me. But, I haven't been able to stop dithering long enough to pay her.

There's little doubt that it has adversely affected my ability to write. Although I was never the artist formerly known as Stephen King, I could write a little. Now even that is disappearing.

In all, 87,275 percent of the columns that I begin never get completed. Of those that do, 73.462 percent end up sounding too stupid for words. If that isn't inefficient enough, 23,933 percent of the ones that survive the first cut come across as being intolerant and/or ridiculously opinionated. Between the hits I take for lack of substance and the hits I take for having no talent and little worth saying, I grade out at 3,931 percent productivity. My quality numbers are a little below that.

This dithering thing has been a suffering. I had no idea I was such a conflicted person. I think I might be even worse than I think I am. I know it sounds crazy, but, I don't even agree with myself most days.

I'm trying to change, but it's painfully slow. And then there's the internal conflict.

For instance, I have started to lean more on the cerebral end of my body to do my reasoning. If I said that any other way it wouldn't get printed. That's not free speech. That's polite speech.

Conflict. It's all around me. And it's all inside me, too.

That's why I have chosen this venue to pitch the idea of my next endeavor. It will help me, and it will help readers of *The Huntsville Times*, too.

I'm proposing that I do an advice column. No, not that smooth psychobabble that makes you feel good. Real advice.

Want to lose weight? Stop eating. Jail overcrowding? Stop locking people up.

Want to be a conservative? Stop thinking.

I know I'm making this look easy, but you can actually do this at home. Overcrowded jails? If we can soften some of the puritan laws we suffer, or maybe abolish them altogether, we can also relieve the overcrowded court system. The current system creates more criminals than it deters. All poor choices are not criminal. Moral laws can be more dangerous than a cocked canon.

My advice. Want something done? Do it yourself. Don't want to pay your dues? Good luck.

I believe that the citizens of this area would appreciate my advice. I believe they would benefit from my advice.

And I'm not just going to try to hit the slow pitches, either. I can play in the big leagues. It's all fastball to me.

At this writing Mayor Tommy Battle has his hands full with an important issue regarding the the Huntsville Housing Authority. Groups of residents representing various interests want to weigh in on the programs and policies of such. At times it has been contentious.

As adviser, I offer resolution. It's not my job to turn the nuts and bolts of the issue. My responsibility is to look at the broader issue and advise the mayor on how to proceed in meeting his overall objectives.

Political advice is actually one of my stronger suits. So, here it is. If I were you, Mayor, I'd concentrate on staying popular.

Thomas Russell is a Times community columnist for 2009.

(Un)natural gas conversion not worth all the environmental risks

Drilling poses water contamination threat; converting vehicles would consume energy

By Stan Cox
For The Times

Holding out the prospect of vast new domestic reserves, the natural gas industry is promising to make the United States an energy-rich nation once again. But we should be careful what we wish for. Spending those riches could endanger water supplies for millions of Americans while still failing to solve the climate crisis.

Electric utilities have expanded their use of gas because gas-fired plants can be "turned up" to meet high peak power demand more quickly than can coal-fired plants. It's also more climate-friendly than coal and less menacing than nuclear energy.

With the discovery of drilling techniques that can extract natural gas from deep shale formations, the authoritative Potential Gas Committee estimates that the total of confirmed and potentially accessible gas reserves has grown 35 percent in just three years.

Climate bills in the House and Senate contain strong incentives to increase drilling and burning of natural gas. Seized by anti-coal fervor, most major environmental groups have gone along with the gas rush.

But natural gas is "clean" only in contrast to coal - just as a bacon cheeseburger can be regarded as healthful compared with a double bacon cheeseburger. Per kilowatt of electricity generated, gas releases 55 percent as much carbon as coal. And gas drilling poses a growing threat to our water supplies.

The investigative news organization ProPublica has documented thousands of cases of surface and groundwater contamination

caused by drilling in conventional and shale deposits in six states.

Concern is now growing over hydraulic fracturing, in which water laced with sand, clay and "fracturing fluids" is pumped deep underground to create fissures and free gas trapped in rock formations. Most of the polluted water returns to the surface and must be handled as waste.

Drilling in shale, which depends heavily on fracturing, can consume hundreds of times more water per well than does drilling in traditional gas fields.

In Pennsylvania, which shares the vast, gas-laden Marcellus shale formation with four other states, drilling is expected to generate 19 million gallons of waste water daily by 2011, according to the state's Department of Environmental Protection. The water, which carries both natural and human-made toxins and is up to five times as salty as sea water, puts a heavy burden on water treatment plants.

Meanwhile, manufacturers of fracturing fluids refuse to reveal their ingredients. Investigators have managed to identify some relatively harmless compounds in the fluids, but also many that are toxic. Some, including benzene, formaldehyde, 1,4-dioxane, ethylene dioxide and nickel sulfate, are confirmed carcinogens.

Gas companies have enjoyed a slack environmental leash since the 2005 Energy Policy Act exempted them from regulation under the Safe Drinking Water Act and the Water Pollution Control Act. Bills now stalled in Congress that would re-regulate the industry need broader grassroots support.

Risking our water so we can burn more natural gas will not be the planet's miracle climate cure. For the United States to achieve necessary

reductions in greenhouse emissions - estimated at more than 80 percent - will require not more energy production, even if somewhat cleaner, but deep cuts in energy consumption.

Coal must be phased out as quickly as possible, but more gas won't accomplish that. While electric utilities' gas consumption doubled from 1996 to 2007, coal use continued its steady climb.

What if, with shale drilling, we could achieve another doubling of gas-fired electricity generation, but this time eliminate an equivalent amount of coal-fired generation? Even that steep escalation of gas drilling would cut the utility industry's carbon emissions by only 12 percent and the nation's total carbon emissions by just 5 percent, based on Energy Department figures.

Financier T. Boone Pickens recommends running our vehicles on natural gas. But substituting natural gas for gasoline in all vehicles would reduce the nation's total carbon emissions by less than 9 percent.

Converting all gasoline-powered vehicles would consume more natural gas than electric utilities, homes and businesses combined. Consequences for the nation's water would be disastrous.

Natural gas is being hailed by some, including Pickens, as a high-energy "bridge" to a renewable future, and by others as sufficiently climate-friendly to be a "destination" fuel. But as gas' environmental drawbacks become more evident, it's looking more like a bridge to nowhere.

Stan Cox is lead scientist for the Land Institute in Salina, Kan., and wrote this comment for the institute's Prairie Writers Circle. His book "Losing Our Cool: Uncomfortable Truths about Our Air-Conditioned World," will be published next June. Write to him at t.stan@cox.net.



Cox

Better radar, awareness, aid tornado readiness

Twenty years ago today, we lost 21 loved ones in a massive tornado that struck a devastating blow to Huntsville.

One of the most common questions I get is, "Will this happen again?" and "Are we prepared?" The first answer, sadly, is this will absolutely happen again. The clock is ticking on the next big tornado event in the area; it is just a matter of time before the alarm goes off.

The second question takes some explanation. The first part of being prepared lies in improved forecasting. Where we are today in terms of technology makes 1989 seem like several lifetimes ago.

In 1989, Huntsville had one radar located at the airport. Today we have a dense Doppler radar network, both public and privately owned, covering our region. Satellite data had limited resolution 20 years ago, but today we have access to images with resolution as fine as 250 meters.

Today's computer models run on machines making 67.5 trillion calculations per second providing us with weather information on a 2.5 miles grid.

The 1989 weather models had a resolution of 111 miles.

We also understand the mechanisms behind tornado development much better than in 1989. Large scale studies, like VORTEX and VORTEX-II, have shed light on tornado development. Work locally at the University of Alabama in Huntsville has furthered our knowledge of small-scale interactions that help tornadoes form.

While we still lack the Holy Grail of perfect tornado forecasts, we now have a better working knowledge of the ingredients for tornado development and can anticipate those better than ever before.

The difference in tornado warning statistics clearly shows this better understanding. In 1989, the National Weather Service was able to warn the public of 75 percent of the major tornadoes (rated F-3/EF-3 or stronger), and did so with about 9 minutes of advance notice.

Last year, those numbers were 94 percent and 19 minutes, respectively. These numbers will only improve as we gain new technologies and forecasting techniques.

Getting our message out to the public has improved through strong partnerships with the media and emergency managers who help notify and prepare the public as needed.

But will all of these advances make us safer?

Not always, because the last piece to the preparedness puzzle is you. A warning is meaningless if you are not ready to take action when needed.

We cannot avoid the fact that another tornado like the one 20 years ago will affect us, but we do have control over how well we prepare ourselves. Please have a safety plan and be ready to take action when the time comes. It will always be our best line of defense against Mother Nature.

Michael Coyne is meteorologist-in-charge of the National Weather Service office in Huntsville.



Coyne