



## T. Boone Pickens Media Coverage 6.18.11 – 6.20.11

Total of 10 Placements • Print: 5 • Blog/Online: 5

### Coverage Summary

[CNN.com](#) posted a piece by the Mother Nature Network summarizing Pickens' 5/25/11 Politico op-ed with Denise Bode, CEO of the American Wind Energy Association.

The Philadelphia Inquirer had a weekend editorial supporting the NAT GAS Act. The piece summarized the benefits of the legislation and urged Congress to pass it.

The Houston Chronicle has an op-ed by Loren Steffy regarding Cheniere Energy's decision to export natural gas. Steffy mentions the Pickens Plan as one possible solution to the problem of not having a robust energy policy and being an economy solely dependent on foreign oil.

**Highlighted Placements (Full Articles Below)** • Unlikely allies? Wind and natural gas team up – Mother Nature Network – 6/20/11 o

[CNN.com](#) <http://edition.cnn.com/2011/TECH/innovation/06/20/ptp.mnn.wind.naturalgas/> • Inquirer Editorial: Fill it up, but not that gas – The Philadelphia Inquirer – 6/18/11 [http://articles.philly.com/2011-06-18/news/29674432\\_1\\_nat-gas-act-refueling-station-natural-gas](http://articles.philly.com/2011-06-18/news/29674432_1_nat-gas-act-refueling-station-natural-gas) • Loren Steffy: Energy seesaw is mighty uncomfortable – Houston Chronicle – 6/18/11 <http://www.chron.com/dispatch/story.mpl/business/steffy/7616166.html>

**Print Placements (Full Articles Below)** • Wolverton: Pickens bill is fueling gas pains – Amarillo Globe-News – 6/19/11 <http://amarillo.com/opinion/opinion-columnist/2011-06-19/wolverton-pickens-bill-fueling-gas-pains> • Magic thinking won't solve energy woes – Richmond Times-Dispatch – 6/19/11 <http://www2.timesdispatch.com/news/commentary/2011/jun/19/tdcomm01-magic-thinking-wont-solve-energy-woes-ar-1116482/> • LETTER: Column was misguided – The Odessa American –

6/19/11 <http://www.oaoa.com/opinion/letter-67174-misguided-usually.html>

**Blog/Online Placements (Full Articles Below)** • Think Big: Energy spring is here and you can join the uprising – The Daily Kos – 6/19/11 <http://www.dailykos.com/story/2011/06/19/984472/-Think-Big:-Energy-spring-is-here-and-you-can-join-the-uprising> • Natural Gas Taxes Heading to Los Angeles and Chicago – Environmental Protection – 6/20/11 <http://eponline.com/articles/2011/06/20/natural-gas-taxis-heading-to-los-angeles-and-chicago.aspx> • Is There a Future for Natural Gas Vehicles? – Cabot Wealth Advisory – 6/20/11 <http://www.cabot.net/Issues/CWA/Archives/2011/06/Natural-Gas.aspx>

## HIGHLIGHTED COVERAGE

**\*\*Unlikely allies? Wind and natural gas team up – Mother Nature Network – 6/20/11 • CNN.com\*\***

By Andrew Schenkel

It may seem like an odd partnership, but the natural gas industry and the wind industry may join forces.

On May 25, the CEO of the American Wind Energy Association, Denise Bode, teamed up with T. Boone Pickens to craft an op-ed that cast wind and natural gas as the most dynamic of duos.

A Bode-Pickens matchup makes some sense. Both individuals call Oklahoma their home state, both have experience in the fossil fuel industry and both see wind as key to reducing the amount of energy this country imports.

The full opinion piece penned by Pickens and Bode can be seen on Politico, but here are a few highlights:

Electric cars underscore the importance of wind, natural gas

President Obama has continued to push for more American cars to be powered with electricity. This could mean big things for the wind industry.

If wind can power charging stations that power our cars, it would put a significant dent in the amount of energy we need to import.

And because wind is a clean source of energy, such a development would be good news for environmentalists.

Of course, there are limitations on what wind can provide when it comes to our transportation needs, and that's where natural gas comes in.

"A battery won't move an 18-wheeler. Neither will ethanol. The only current substitute for imported diesel is domestic natural gas," read the Pickens-Bode piece.

### Passing the Nat Gas Act

House Resolution 1380 is known as the Nat Gas Act and it is the Pickens-backed solution to transitioning 18-wheelers to natural gas.

If passed into law, the Nat Gas Act would provide tax credits for trucking companies to outfit their rigs with natural gas engines.

Pickens is heavily invested in the companies that would gain from this transition, but getting our trucks off imported oil would greatly reduce greenhouse gas emissions and stop "the funding of terrorism in the Middle East," as Pickens frequently says.

Of course, there are questions about how safe and clean natural gas really is as domestic production increases.

### Increase in wind capacity continues to have huge impacts

Since 2007, utility-scale wind projects -- those are projects that feed electricity into your house -- accounted for 35 percent of the U.S. generating capacity.

This increase accounts for what Pickens and Bode have named the "wind corridor," the area from Texas to the Canadian border. This area has seen an increase of 100 wind farms per year since 2007.

These numbers show that the wind industry has arrived as a major player on the domestic energy front.

### **Inquirer Editorial: Fill it up, but not that gas – The Philadelphia Inquirer – 6/18/11**

Three years ago, billionaire T. Boone Pickens seemed on the verge of doing the impossible: making a longtime oil man like himself popular.

During the 2008 election, Pickens touted in an \$80 million national media blitz his plan to use alternative

energy sources to reduce the nation's dependence on foreign oil.

At the time, the United States was spending about \$700 billion to import 70 percent of the oil it consumed. Pickens' plan promised to cut those imports by a third, through the use of wind to fuel power plants and natural gas to power trucks and cars.

Pickens' ideas struck a chord in a nation that watched as terrorism and wars in the oil-rich Middle East drove oil prices to record highs that summer. Making other countries rich at Americans' expense just made no sense. It still doesn't today, with gas prices averaging above \$3 per gallon.

"It is not difficult to see the link between sending hundreds of billions of U.S. dollars to unfriendly nations and the continued ability of terrorist organizations to recruit, organize, train, and deploy fanatics who are bent on doing America harm," Pickens wrote this month. "Someone is paying for all that, and I believe that someone is us."

Thus, for reasons of conservation and national security, the country needs to be in the business of developing alternative energy sources and lessening its dependence on foreign oil.

That's why Congress should support the oddly titled New Alternative Transportation to Give Americans Solutions Act (NAT GAS Act, get it?), introduced this spring with broad bipartisan support.

Over five years, the bill would extend and increase targeted tax credits for companies to convert heavy trucks and refueling stops from diesel to domestic natural gas. It would also encourage the domestic production and purchase of natural-gas-fueled vehicles.

It wouldn't be cheap - conversion estimates are \$100,000 per refueling station and \$64,000 for an 18-wheeler. And, yes, Pickens, who has substantial stakes in the natural-gas industry, would benefit financially. But the country stands to benefit even more, especially if the promised savings of 2.5 million barrels of oil a day are realized.

In an era of trillion-dollar deficits, and at a time when energy independence is so closely tied to national security, that's the kind of savings this nation needs. Congress needs to start thinking about the long haul and get this NAT GAS Act in gear.

**Loren Steffy: Energy seesaw is mighty uncomfortable – Houston Chronicle – 6/18/11**

By Loren Steffy

Our energy conundrum is on display at the Texas-Louisiana border.

That's where Houston-based Cheniere Energy operates its Sabine Pass liquefied natural gas plant, although "operates" implies a little more activity than it's had since opening two years ago. The facility has struggled because weak natural gas prices have undercut the market for imports.

Thanks largely to the boom of extracting natural gas from shale formations, the U.S. finds itself awash in natural gas, even as international demand for the fuel grows.

Quite simply, companies like Cheniere can make more money selling gas overseas than they can selling it here. So Cheniere applied for permits to build an export plant at Sabine Pass, a request the Department of Energy granted a few weeks ago.

"The U.S. has an opportunity to become a significant supplier in the global energy markets," Cheniere CEO Charif Souki said in a statement last month.

In the short term, that's good for Cheniere and its shareholders, but there's also a frustrating irony in exporting gas even as we import almost three-fourths of our oil.

"You're exporting clean domestics for dirty imports," T. Boone Pickens, the Dallas oilman and investor who's become a leading proponent of natural gas, told me this week. "We're going to need all the natural gas we can get."

Pickens is quick to point out he's not criticizing Cheniere's decision. He knows all too well the pain of betting a company's future on the natural gas market.

"I've been in the same spot those guys are in," he said. "When your back's against the wall, you do what you have to do."

Other requests as well

Natural gas is expected to stay under \$6 per million British thermal units for years, and Cheniere isn't alone in looking at exports. The Department of Energy is reviewing at least two other requests for LNG exports in Texas and Louisiana.

If more companies follow Cheniere's lead, though, prices could rise, which would undercut exports.

"If there were more of this, you'd probably have higher domestic prices, which would then make you want to sell it in the domestic market," said William Arnold, a professor of energy management at Rice University.

We are, of course, all too familiar with this seesaw between price and supply, and we know where it gets us. Without a long-term strategy, we respond to the economics of the moment. We'll worry about the consequences later. Case in point: No sooner did oil slip below \$100 a barrel than sales of large vehicles picked up again, according to [Edmunds.com](http://Edmunds.com), which tracks auto sales.

Locked in the present

Exporting natural gas feeds our long-term energy dilemma. How do we build the energy infrastructure of the future if we remain bound by the economics of today?

Not surprisingly, Pickens believes that answer lies in converting more vehicles — especially trucks - to run on natural gas. He's championing a bill in Congress that would offer tax incentives for companies that buy natural gas-powered trucks. The tax breaks would expire in five years, which would be long enough to establish natural gas trucks as part of the infrastructure.

Pickens owns part of a company that fuels such trucks, so he has a vested interest in the outcome, but everyone in this battle talks their book, as they say on Wall Street. The big oil companies that oppose the measure stand to make money if oil demand remains high and natural gas prices stay low.

Backing viable choices

As I've said before, we need a road map that gets us from being an economy solely dependent on foreign oil to one that uses a portfolio of economically viable fuels. Government can play a limited role by encouraging alternatives that show promise, as opposed to subsidizing those, such as corn-based ethanol, that don't.

Cheniere's plans for Sabine Pass are about more than just exporting LNG. It's a reminder of the long-term costs to a consumer nation for operating without an energy policy.

## **PRINT COVERAGE**

### **Wolverton: Pickens bill is fueling gas pains – Amarillo Globe-News – 6/19/11**

By Lee Wolverton

Demonstrating the potential sagacity of mixed maxims, T. Boone Pickens, the erstwhile Amarillo oilman, finds strange but growingly familiar bedfellows at his side as he pursues his latest venture in a lifetime of them.

It's known as the Pickens bill. Or, in the tortured parlance of Washington, the New Alternative Transportation to Give Americans Solutions Act (NAT GAS). The legislation, which would trigger federal subsidies to power cars and trucks with natural gas, gives Republicans apoplexy.

A cadre of GOP House representatives - co-sponsors included Mac Thornberry of Clarendon and even Libertarian-minded Ron Paul - supports the Pickens bill, although more than a half-dozen lawmakers have turned in recent weeks. Republican backing displeases tea-party constituents put off by the fact that America happens to be spending itself broke. Their chagrin doubtlessly is deepened by the fact that the liberal triumvirate of President Barack Obama, Senate Majority Leader Harry Reid and House Minority Leader Nancy Pelosi rides at the front of the NAT GAS train.

This strikes chords of irony given Pickens' history of political giving, which includes donations of \$3 million to Swift Boat Veterans for Truth, the group that helped torpedo John Kerry's presidential bid in 2004, and \$2.5 million to Progress for America, a 527 group founded by Karl Rove pal Tony Feather.

When oil began taking a bath in 2008, Pickens responded by pouring his deal-making spirit into a high-profile push for wind energy. His latest move is a natural fit for an administration that touted natural gas as part of its clean energy platform en route to Pennsylvania Avenue.

His detractors suggest it's also a natural fit for Pickens, author of "The First Billion is the Hardest." The conservative Washington Times wrote in an editorial last week that Pickens "just happens to be the largest shareholder in Clean Energy Fuels, which owns 200 natural gas stations across the country. Clean Energy owns BAF Technologies, which is one of the largest companies that converts vehicles to run on natural gas, and Mr. Pickens also owns the mineral rights to almost 200,000 acres believed to have significant natural gas reserves."

In other words, his critics say, Pickens' green energy is all about the green. This is not troubling in itself,

no matter how gauche the notion of money-making might be in the downturn era. America could use a bit more money-making at the moment.

The particular rub for NAT GAS opponents is that Pickens' plan is fueled by taxpayer money - a \$100,000 subsidy for every station that converts to natural gas, \$64,000 for every converted truck and as much as \$11,500 for every car. The total price tag: \$5 billion. The hotly conservative Free Republic is so bothered it can't stop generating derisive nicknames for the legislation: "Call it the T. Boone Pickens Earmark bill. ... Call it the Boonedoggle bill. ... Call it the Pickens-Your-Pocket bill."

Others, most notably Charles and David Koch, leaders of the Kansas-based manufacturing powerhouse Koch Industries, similarly disdain the measure, saying it would wrongly tilt the energy market in favor of natural gas. Koch Vice President Rich Fink told the Washington Post last month, "We maintain that the marketplace ... is the best mechanism for allocating resources to consumers."

Pickens dismissed the objection: "They don't want natural gas prices to rise." Regarding spending fears, his website offers counterpoints. Higher initial costs for natural gas vehicles will decrease with rising demand, and "the life-cycle costs of NGVs [natural gas vehicles] are significantly lower. Fuel costs are at least 15 percent less using natural gas rather than gasoline or diesel."

Although NGVs are rare here, they're common elsewhere. There are 12 million natural gas vehicles on the road today, but just 112,000 in the United States, according to Natural Gas Vehicles for America, a Washington-based group.

NGVs' prevalence around the globe answers at least to an extent questions about the feasibility of Pickens' vision. So, too, might an estimate from the International Association of Natural Gas Vehicles, which says the number of NGVs will more than quadruple over the next 10 years to 50 million.

If that proves true, it might counter a charge of the Pickens bill's critics, who say it seeks to create a market where none exists. It surely does exist beyond U.S. boundaries and might here with precisely the push the legislation would provide. That in turn could lessen foreign oil dependence, a development people of all political persuasions favor.

Many conservatives, of course, argue that the way to wean America off foreign oil is to expand domestic drilling. But that approach and the one driven by NAT GAS are not mutually exclusive. Why not both?

More to the point: Would the costs of the Pickens bill be mitigated by consumer savings as well as reduced use of foreign oil? That answer - provided it can be stated definitively - is the hinge on which the

bill's fate should swing.

Lee Wolverton is executive editor of the Globe-News.

## **Magic thinking won't solve energy woes – Richmond Times-Dispatch – 6/19/11**

By Kyle Scott

Whenever gas prices hit new highs, consumers demand action and politicians placate us with speeches and temporary solutions. But when prices decline a little, or when something else captures our attention, politicians shift their focus and nothing changes.

Right now we are in one of those times when gas prices are a topic that is not getting much attention. Prices will rise again, and we will be left wondering what we should do — like always. The reasons behind this repeating process? A limited attention span and no comprehensive energy plan.

Ideas have been presented for limiting our dependence on oil, particularly foreign oil. For instance, T. Boone Pickens, the natural-gas tycoon, has proposed that we switch all commercial transport from diesel to natural gas in order to reduce our dependence on OPEC. This is fine for reducing our dependence on foreign oil, but doesn't do much for greenhouse gases or to ensure no future spikes in gas prices if U.S. natural gas or oil production stagnates.

A recurring proposal that we hear about every four years — at least when presidential hopefuls are courting primary voters in the Midwest — is low carbon fuel standards (LCFS).

LCFS can be achieved by supplementing consumer fuel with — or switching entirely to — ethanol. We will certainly hear more about ethanol as Republican contenders for the White House try to win the Iowa primary.

But there has been no reliable or price-effective way to move to LCFS. The best ethanol-centered proposals would raise prices to a level that could increase the fuel expenditure for each American household by almost \$6,000 annually.

Even if we choose to stay away from ethanol and go down the path of biodiesel, hydrogen or electricity, current evidence suggests that such proposals are either unreliable, unrealistic or price-prohibitive. And even if we could develop a safe, reliable and affordable way to achieve LCFS, enforcement would still be

a problem.

Enforcement would either require the national government to impose a uniform set of restrictions on the states or for the states to enforce a national mandate on themselves. In addition to invading states' rights and undermining the remnants of our federal structure, this approach assumes that the national government knows best and that the current technology is the best technology.

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There is no getting around the matter that we need a solution to our energy problems, but that does not mean we should worship at the feet of innovation. Instead of thinking the next big thing is the best thing, we should humble ourselves and our expectations and realize that there are consequences we cannot see in whatever it is we are discussing.

In the debate over energy, all sides are impassioned because the stakes — environmental and financial — are so high. We cannot know all of the consequences of our actions, and most of the time we can learn of the consequences only through experience.

We see the negative results of oil and nuclear energy because we have observed them. Because we have not seen such negative results in the use of natural gas, hydro, solar, ethanol or wind does not mean that they do not exist.

To say that one of those sources can produce energy with no negative side effects, or with only those side effects we can predict, is to fall into the hubristic trap of the modern psyche that is convinced humans can control the forces of nature, luck, chance or fortune. Even Machiavelli, the godfather of modernity, conceded that we can only control about half of what goes on in our lives, and the rest is in the hands of Fortuna.

The best option we have is to remain humble in our search for an answer. Humility can lead us to a more productive method of research and debate. Humility drives us to decentralized solutions in which we allow the states to act as laboratories of innovation.

By encouraging each state to decide for itself what sort of policy to pursue and what sort of innovations to encourage, we can observe the consequences of the different policies and technologies and move forward better informed. This will also encourage the development of new ideas — which we need, because the old ones are not working.

Kyle Scott teaches American politics at the University of Houston. He has written extensively on American politics and political theory. His third book, "Federalism," has just been released. He can be reached at [kyle.a.scott@hotmail.com](mailto:kyle.a.scott@hotmail.com).

## **LETTER: Column was misguided – The Odessa American – 6/19/11**

By J. Edward Vasquez, P.E. Odessa

Usually, I'm a big fan of Americans for Prosperity. But I'm compelled to set the record straight and correct Ms. Peggy Venable's letter of Thursday the 9th. On this one issue, she's "not getting it." I am a strong conservative and a huge proponent of HR 1380, the NAT GAS Act. This bill will allow the U.S. to invest in a conversion of millions of semi-trucks from diesel to natural gas. The goal is to reduce IMPORTED oil.

This concept was introduced by Mr. Boone Pickens, a famous oil/gas developer, and in my opinion, a true patriot. The main intent is to increase our national security. We spend \$700 billion a year on imported oil from countries like Saudi Arabia, Venezuela, etc ... Why?

These countries are no real friends of ours. Instead, that money should be spent on an American product, natural gas. A major part of the Pickens Plan is to increase the production of renewable energy such as from wind, nuclear and solar. This extra renewable energy will "free up" some natural gas for the nation's massive truck fleet. The rest will come from additional gas drilling/production — within American borders.

The end result of the NAT GAS Act will go a long way toward satisfying both Democrats and Republicans. Democrats like the drive to increase renewable energy. Also, trucks that run on natural gas produce immensely less pollutants. WIN! Republicans like the idea of reducing imported oil, thereby increasing national security while keeping \$700 billion in America. Plus, this increases domestic gas production. WIN!

Finally, an issue on which neither political party should fight. This plan truly is a positive move for this country.

Ms. Venable's only real point of contention is that this act will require government (taxpayer) monies. This is true. But because the act is so very important to the long-term goals of both Democrats and Republicans, this is finally a real issue that deserves investment — an investment with real returns. Her

second, but lesser point of contention is that American gas developers might profit. So? Welcome to West Texas.

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## **BLOG/ONLINE COVERAGE**

### **Think Big: Energy spring is here and you can join the uprising – The Daily Kos – 6/19/11**

By Mark Sumner

Don't think revolution. Think redirection.

The inability to develop a comprehensive energy policy despite more than four decades of grand declarations represents the greatest ongoing failure of American politics and the utmost threat to the stability of our nation. For decades the lack of an energy policy has defined America's military risk abroad, warped the economy at home and degraded both our environment and our health. It's not just the sword hanging over our head; it's the knife at our throat.

It's too simplistic to say that addressing our energy issues will make everything else easy. It's not too simplistic to say that failing to resolve our energy dilemma will make everything else impossible.

Developing a new generation of energy sources, and the means to conserve and utilize energy effectively, stands to return the United States to the forefront of world technology. Every time we pull back from this challenge we increase the risk that we will find ourselves in the rearguard of nations still dependent on resources that are ever more expensive to secure. Every delay only entrenches us more deeply as members of the fossil fuel third world.

And we do pull back. All too readily, we declare this issue insolvable or too complex to understand. You can bet that more than a few readers turned away as soon as the word "energy" appeared in the title. We do exactly what the people who are profiting from the crisis want us to do: we leave it up to them.

Fossil fuel companies are the richest, most profitable organizations that have existed on the planet. Ever. They are spending billions to see that this problem does not get solved. That doesn't mean it can't be solved. That only demonstrates how worried they are that people will wake up and notice that solutions are possible.

So wake up. Here's the issue in a nutshell.

The United States faces two energy crises: one in transportation, the other in electrical production. Transportation is currently defined by oil. Electricity is described by coal, nuclear and natural gas. These two markets for energy are not interchangeable. They are not the same. They are not shaped by the same forces. They are two different issues. When politicians pull them together for rhetorical purposes, or companies pitch some new power plant as helping "American energy independence," it only obscures the situation.

Oil is the more immediate crisis. We cannot drill our way out of this problem. Despite huge price increases and every incentive to generate oil from every possible source, domestic production is falling. Domestic production has dropped 43% since 1970, while imports have gone up 1000%. Oil availability is limited. Oil demand is growing. The result is that prices will continue to rise. A lot. There is not one thing that this government or any government can do about it. Our need for oil makes us vulnerable. It's our greatest economic and national security threat and should be treated as such.

The crisis in electricity is of a completely different nature. It's composed of one part environmental damage and one part aging infrastructure. Climate change due to human activity is already an enormous destabilizing factor around the world, one that is exerting pressure on relationships and resources. This problem will continue to grow. How big it gets will largely be a factor of the solutions we find in the generation of electricity. Meanwhile, sixty-five percent of electricity in the United States comes from coal-burning plants or nuclear power, and the great majority of these plants are more than 40 years old. Some have been around 60 years or more. It's not a matter of a campaign to shut down existing plants. These plants are going to close anyway. They are already being closed. What matters is how they will be replaced.

Having a comprehensive energy policy does not mean throwing out meaningless numbers like "we must get X% of our power from Y technology by Z date!" It does require that we look at the problems we've been handed—a dependence on a transportation fuel whose availability is outside our control and a crumbling out-of-date electrical infrastructure that presents us with unavoidable change—and find solutions that meet our needs. What we build now is going to be with us for a long time to come.

Here's the story you're not hearing. In the last two decades, the U.S. has added less than 8,000 MW of capacity to its fleet of aging coal-burning power plants. Over that same time production is by 400,000 MW. How is that possible? It's possible because aging power plants that used to be down 40% of the time for repairs are suddenly running 65% of the time. Seventy percent. Seventy-five.

If it doesn't make sense that plants averaging over five decades old are abruptly running better than ever, don't worry. They're not. They're simply being run at the ragged edge by an industry that has no idea what to do next. U.S. policy and markets have been so undirected, so changeable, so transient that utilities don't know which way to jump. Rather than creating new capacity, or addressing issues of distribution, they just keep demanding more, and more, and more from plants that were long ago meant to close. When politicians and "experts" tell you that making a change in our energy infrastructure is going to be fabulously expensive, they're leaving out one thing: we're going to spend that money in any case, because we have to.

We don't have to mount an assault on the infrastructure to make a radical change in our energy production. We just have to give consistent guidance.

And here's how we make that happen...

## TRANSPORTATION

Our energy needs can be divided into two broad categories: transportation and electricity. Meteor Blades will be providing a full set of proposals later today on transportation, so this section will be intentionally brief. If you don't see an area of this issue addressed here, odds are you'll see it in his essay.

## OIL

Currently, transportation is almost wholly dependent on oil. The United States imports more than nine million barrels of oil each day. This represents a tremendous weakness. Our need for oil leads directly to military entanglements around the world. Our dependence on oil leads the United States to lend unwarranted support to governments with poor human rights records.

The price of oil is not just found at the gas pump. It's not just the underlying cost of our food or clothing. The price of oil is also reflected in our defense budget and in the decline of our moral authority abroad. Politicians who defend continued use of oil by invoking market prices fail to include the real cost in their calculations.

Despite many claims to the contrary, the absolute truth is that we cannot address this issue through the production of more domestic oil. United States production peaked in 1970 and has declined ever since. Despite higher oil prices that provide trillion-dollar incentives to discovery, despite tens of millions of acres opened up for exploration, despite an ever-slackening regulatory environment that invites drilling

above all else, despite new technology, deep water rigs, thousand-mile pipelines, city-sized floating platforms and tankers that would dwarf the Titanic, oil production has fallen 43% since 1970. Over that same period, demand for imported oil has increased by 1000%. "Drill, baby, drill "might as well be "cover your eyes, baby, and wish it away."

Discovery of new oil fields continues, and will continue for decades. Production of oil is not about to end. However, many large fields—including fields such as the enormous Prudhoe Bay field in Alaska and the "super-giant" Cantarell Field in Mexico—are approaching their end. They will be replaced by fields that are smaller and more isolated. They will be replaced by oil that comes from locations more physically taxing to reach and from regions less politically stable. As a result, the cost of producing oil will continue to rise while total production levels out or declines. At the same time, increasing use of oil for transportation in nations such as India and China will guarantee that the price of oil moves ever higher.

No possible increase in production, even one based on the most wildly optimistic estimates, would begin to address our need for imported oil. It simply is not possible, and any politician suggesting otherwise is risking our nation's security, economy, health and future to indulge in ideological fantasy.

The only solution is to sharply and rapidly reduce demand for oil. Any other proposal not only will fail, it will make the situation worse.

To speed transition away from oil, our nation must place pressures on the market that help to reflect some of the hidden costs involved in oil's production and use. Some of these are directly calculable. Others represent the risk oil presents to future stability. Both must be addressed.

1. Implement an additional federal tax on gasoline and diesel fuel that begins at one cent per gallon and increases by one cent per month over the next 10 years. Yes, taxes on consumption are regressive. Yes, this tax will have more impact in some rural areas where workers must travel large distances each day to find a job. It may be possible to structure a system of rebates or allowances that minimize this impact. However, no matter if it has unequal impact or if it is politically unpopular (and it will be) this tax is still utterly and absolutely necessary. It is necessary because oil does not even begin to "pay its way." Current federal taxes are only 18.4 cents per gallon for gasoline and 24.4 cents per gallon for diesel. This is not only one of the lowest rates in the developed world, it is far from the amount needed to fund even federal highway outlays. Revenues generated by the slow increase in gas tax should be split between repairs to our crumbling transportation infrastructure (including both highway and rails), improvements in mass transit (including high speed rail), and for research into ways of further reducing our need for oil.

Even at the end of the 10-year period, the increase in a price per gallon of fuel will place the 2021 tax rate in the United States at only a fraction of the 2011 rate in most European nations. The negligible tax rate currently applied to gasoline, and the very high level of expenditures devoted to supporting gasoline's production and use, skews the market so badly that it makes entry of any competing technology very difficult. A gasoline tax that grows slowly toward a more reasonable level over a decade is a measured and necessary move to address this inequity.

2. Extend and increase federal tax credits for purchase of plug-in hybrid and fully electric vehicles.

Hybrid, plug-in hybrid and battery-driven electric vehicles are still new in the marketplace. No doubt many of them will become available over the next few years. No doubt many of them will be expensive failures. The success of some hybrid models has proven that these technologies can be competitive with traditional internal combustion technology. However, it's vital that the government support the introduction and acceptance of these vehicles until public awareness, infrastructure, and agreed-on standards can help move electric vehicles from a niche to a majority. It's not unfair to have government support for the introduction of these vehicles. In fact, it's one of the cheapest steps we can take in solving an addiction that currently costs us far more.

3. Continue to increase CAFE standards, and support the ability of California to set its own standards.

Americans have supported, and continue to support, steep increases in the standard fuel economy of vehicles on the market. Politicians have frequently painted these rising standards as unattainable or too expensive, but auto manufacturers have demonstrated that even traditional internal combustion vehicles can reach these higher levels while increasing both their utility and their safety. The warnings about "clown cars" and "death traps" have proven again and again to be as unwarranted as advocates for high-mileage vehicles always maintained. Continuing a predictable, but demanding, rate of increase will not damage the U.S. auto industry or endanger U.S. drivers. It will lead to safer, more efficient vehicles and an industry that is more competitive around the world.

4. Increase the cost of drilling permits, require larger remediation bonds for environmental cleanup, and decrease time allowed for development. Oil companies are currently extended an enormous gift with each federal lease. The payment to the government is not only so low it doesn't threaten their profit; it's so low as to pass almost unnoticed. While coal companies are often required to put up large bonds promising that they will restore the land post-mining, oil companies are rarely forced to provide bonds that could protect the environment in the face of disasters like the one still unfolding in the Gulf. Both the royalties paid to the government for production on federal lands and the bonds provided against disaster need to be sharply increased. Would this make it more

difficult for small players in some circumstance? Yes. But then, those unable to put up a bond against the potential damages caused by their drilling shouldn't be drilling. Finally, oil companies have shown a tendency to treat federal lands as bankable reserves, doing minimal exploration to hold onto leases and permits while bolstering their bottom lines with the projected reserves. If oil companies are really worried about increasing domestic production, then they won't be concerned about tightening the timeline required between permit and development. While you're at it, eliminate the tax breaks that mean most supposedly U.S. oil firms pay far more in taxes overseas than they do at home.

## ELECTRICITY

The largest component of electrical generation in the United States comes from coal, with lesser percentages from nuclear energy, natural gas and hydroelectric. Sustainable sources such as wind and solar currently meet only a small percentage of the demand. However, our need for electricity has grown more slowly than our need for oil, and much of the nation's electrical infrastructure has been in place for many decades. A great deal of that infrastructure will be replaced over the next 10 to 20 years.

The choice we're facing is not a massive program to rip out and scrap every boiler, turbine, substation and transmission wire. What we must decide is how we will orchestrate the replacement of infrastructure that is at or beyond end of life. Without guidance, our crumbling electrical infrastructure will be replaced with one that is patchwork, uncoordinated and designed to meet transitory demands. We'll get a fresh wave of plants built on the least expensive fuel at the moment. Such an infrastructure will be fragile and at least as vulnerable as the one we have now. Instead, we should seek to guide the deployment of an electrical infrastructure that is more stable, more sustainable, more decentralized and more flexible.

## COAL

Coal is available domestically. We do not import coal for producing electricity. However, that doesn't mean that the cost of coal is not volatile and heavy dependence on this fuel makes our electrical system highly subject to changes in coal cost. Not only does burning coal generate a large fraction of the carbon that is driving climate change, burning coal also introduces into the atmosphere a broad array of heavy metals and trace elements, causing everything from acid rain that devastates forests to mercury contamination in fish.

The advantage of coal is that, without restrictions on its production or obligations to address the health and environmental cost of its use, it's a very inexpensive source of energy. However, coal-burning power plants tend to be economical only if built to a large size—typically 500 megawatts or larger. So coal is

cheap to use, but requires a large up front cost. Constructing new power plants based on coal burning is so expensive that they are used only to address increases in the need for the everyday "base load." Thanks to other technologies that can address power demand in smaller increments, few new coal-burning plants have been constructed over the last decade and few, if any, additional plants are planned.

The United States currently has more than two million gigawatts of electrical capacity based on coal-burning power plants—a quarter of the world's capacity. This is a daunting number, and replacing it may seem impossible. However, most of these coal-burning plants are old. Some are decades past the point where it was expected they would be taken off line. Three dozen of the plants were built more than 60 years ago.

Despite talk of centuries of coal reserves, despite lopsided government expenditures that have elevated research on "clean coal" above all other potential power sources, no new generation of coal-burning plants will be built. Multiple studies have demonstrated that retrofitting existing plants for carbon capture would be more expensive than replacing them, but even that's beside the point. Market forces alone have made it clear that our existing base of coal-burning plants is going away. No one wants to risk the billions it takes to build these large, inflexible plants in the midst of rapidly changing prices and uncertain regulation. The age of giant coal plants is over.

Within the next few decades, the use of coal for electricity in the United States will steadily decline. Regulation, or lack of regulation, will not change this. However, national policy will play an important role in determining how that declining base load from coal is replaced and what impact the decline of coal has on states and communities where it is mined and used.

In addressing our declining need for domestic coal, the United States needs to take simple, productive steps as we ease away from this technology

1. Cut funding for clean coal technology which will never be utilized. The disproportionate allocation of funds toward this unpromising and technically unattainable goal robs research into areas where serious progress is possible. The high level of support given to clean coal is nothing more than a political payout to politicians and regions where the industry has clout. It's a waste and a distraction. The funding now allocated for clean coal technology should instead be split between support for expanded use of sustainable sources and funding for jobs and education in coal-producing states.
2. Immediately eliminate the use of mountaintop removal mining. Mountaintop removal produces less

than 5% of coal in the United States, an amount easily made up from other sources. Yet this small sliver of coal production accounts for thousands of miles of buried rivers, hundreds of mountains laid waste for all time, and dozens of communities left isolated or ruined. There is no need for mountaintop removal or similar practices such as contour stripping. They should be ended now—as in immediately—through the issuing of EPA and Army Corps of Engineering rules that clarify the interpretation of "waste" and "fill" in existing legislation, and through the passage of new legislation like the Clean Water Protection Act that will ensure that this practice does not resume. Ending mountaintop removal won't threaten jobs or turn off the lights. It will just take a portion of the money from the worst operators in the business.

3. Provide incentives for other industries to create jobs in traditional coal-producing regions. Mineral extraction of all forms, and coal production in particular, has proven to be a dead end when it comes to economic development. Areas that have supported mining on the promise of short-term jobs have found themselves abandoned when market conditions change or reserves are inevitably exhausted. Often they are left with areas that are environmentally wasted, educational systems poorly suited to producing workers for other industries, and health-care systems burdened by the long-term cost of workers subjected to harsh conditions over a long period. Areas of the country dependent on coal mining have consistently been among the poorest financially, the poorest in terms of health and the poorest in terms of quality of life. The only way to free these communities from economic indenture is to provide other opportunities. These opportunities must include an emphasis on education, but they cannot end there. Coal-mining communities must be used as models for creating clean energy jobs. High-tech jobs. Tourism jobs. Jobs.
4. Expand the use of pelletized biomass as a replacement fuel. Biomass fuels have tremendous potential. Whether from waste, pelletized grasses, wood scrap, or agricultural byproduct, biomass has the potential to eventually replace more than ten percent of our power supply. Because biomass fuels often have energy characteristics similar to coal, it is possible to use them in existing coal plants. Much of their current use has been focused on mixing biomass with coal to help reduce emissions, but an even better solution would be to tune some coal plants to burn 100% biomass. The result would be sustainable plants whose solid waste lacked the toxic properties of coal ash.

## NUCLEAR

Even in the shadow of the Fukushima Daiichi disaster, the explosion at Chernobyl and the core

meltdown at Three Mile Island, there are many advocates for expanded use of nuclear power in generating electricity for the United States. Since these plants generate no greenhouse gases, they have an enormous advantage over coal and natural gas. This has led even some of the strongest environmental advocates into being nuclear supporters. However, concerns about nuclear plant safety and both short- and long-term management of nuclear wastes may negate any advantage.

From the beginning, nuclear power has represented an enormous promise. Early advocates suggested that power generated from nuclear plants would be "too cheap to meter." However, that has not proven to be the case. Not only have there been many issues around plant safety and disposal of waste, nuclear plants have proven no more reliable in their day-to-day operation than other generating plants. Three Mile Island is far from the only plant to experience problems. Much of the problems come from similarities between current nuclear plants and current coal burning power plants: they are large, built to no fixed design, and they are aging. Most of the existing plants were built more over 40 years ago. That age is reflected in increasing costs of upkeep, increasing unreliability and increasing risk.

Like our current crop of coal-burning plants, the nation's nuclear base load will be replaced in the next two to three decades. The question is not whether to pull the plug on them now, but how we will mitigate their inevitable loss.

Advocates of nuclear power are right to point out their potential ecological advantages. However, they are wrong to blithely dismiss the potential threat of accidents and contamination. It may be possible to create reactors and power plants that are "intrinsically safe," where no event, no matter how catastrophic, can tip the facility into meltdown or threaten the surrounding community with release of radioactive elements. It may be possible to build nuclear plants whose risks are so low, and whose benefits are so high, that they usher in a "nuclear renaissance." It may be possible, but it's not certain. No country in the world currently has such plants, and no country in the world is currently operating the kind of deep facility that many advocate propose for long-term storage.

What's certain is that, following events at Fukushima, there will be increased resistance to the building of new nuclear plants. The safety demands will be higher. Cooperation of local officials will be more difficult to attain. Opposition from local populations around proposed plants will increase. Implementation of new nuclear plants cannot go forward on the basis of creating problems now and promising solutions in the future.

Nuclear power may be the power of the future, but for it to get there, nuclear power is going to have to prove that it has learned from its past.

No matter what happens from here, nuclear power's role in the United States is not about to enter a "renaissance." It's about to shrink. In the best of circumstances, new units like those at Vogtle will show that they can be operated safely, and that they live up to their promises of reliability and high availability. But that reassurance is still a decade or more away. By the time we know whether we can build a safe and reliable nuclear plant, many of our existing plants will have been replaced, and their replacements will not be nuclear.

1. Prevent the start up of Unit 2 in the nuclear plant at Watts Bar, TN. This unit, whose construction has been on-again, off-again since the 1980s is not built to anyone's idea of intrinsically safe design. It does not reflect the level of safety that we should seek in new reactors. Bringing this reactor on line, even in an area with a relatively low population, would represent an unwarranted risk at a time when the base load capacity is not needed.
2. Allow continued development of the Vogtle Electric Generating Plant units 3 & 4. These "generation III+" reactors are the first such to be approved in the United States. They are designed to the same specification as a number of reactors in China that are scheduled to be put in production between 2013 and 2015. Implementation of these plants may represent significant steps toward safer operation and on-site storage. However, no other plants of this design should be allowed until these plants have proved that they can operate to specifications.
3. Develop a full-scale demonstration plant using the best available technology and in conjunction with international partners. The possible rewards of nuclear power are high. So are the risks. Nations around the world are reevaluating the use of nuclear power, and this is an area where a broad partnership is not just beneficial but essential. The United States should select a site, at home or abroad, to work in partnership with other nations toward building a plant that lives up to the expectations of advocates.

## NATURAL GAS

If there is one fuel in the United States currently undergoing a renaissance, it's not nuclear—it's natural gas. Within the last decade, techniques for pumping pressurized fluid into gas-bearing strata to increase production have revitalized existing gas fields across the nation. Hydraulic fracturing, more commonly known as "fracking," has brought on a sudden bounty of gas, restoring production to fields once thought exhausted, greatly increasing estimated reserves, and resulting in sharply lower price for natural gas. This increased availability and drop in cost has moved many utilities to expand their use of natural gas for electrical generation.

Market instability and other concerns have scuttled plans for new coal plants. Safety concerns and permitting obstacles have stalled plans for new nuclear plants. The slack for those new plants, and for old plants going off line, is currently being picked up almost entirely by increased production from natural gas.

This is not altogether a bad thing. Natural gas is a fossil fuel, and its use does generate climate-changing carbon. However, using natural gas in a new combined-cycle plant where a significant portion of waste heat is recaptured and reused, results in electrical generation that produces less than half the carbon of generating the same electricity in a coal-burning plant. Additionally, natural gas plants lend themselves more easily to different scales. So it is possible to build plants of a small size that are used part-time to produce "peaking power" when demand is high, or larger plants that are used to provide base load.

There is little doubt that in the short term, much of the power that is currently being lost by the retirement of aging coal and nuclear plants is being replaced by new plants using natural gas. Cost of construction, easier siting and approval, and the fracking-driven low price of gas have combined to make this option extremely attractive. However, natural gas is not without its issues. While it produces less carbon to burn than oil or coal, natural gas is itself an extremely potent greenhouse gas (methane). Studies have suggested that the amount of gas lost into the atmosphere in producing this fuel is enough to negate any savings over burning coal—at least on the greenhouse front. Rather than being an improvement, natural gas may be just as big a contributor to global warming as any coal it replaces.

While fracking has produced a gas surplus, this surplus is not as large as many would have you believe. We're up, yes, but not so much that a future of natural gas is a given. In fact, there are many indications that this relative-abundance will be very short-lived. Also, the fracking that has made gas momentarily inexpensive has also brought on a host of issues. In some locations, potentially dangerous materials used in the hydraulic fracturing process have been introduced into water supplies or released on the surface to pollute streams and rivers. In some areas aquifers have been so affected by the fracking process that hazardous levels of natural gas have entered the water supply.

Finally, the methane industry, which has traditionally consisted of a number of highly competitive small operators, has found itself transformed almost overnight by wealth, mergers, and partnerships with other fossil fuel industries. Advocates for gas have so far used their new power in much the same way as their rivals—to attack the idea of human-caused climate change and to fight proposed environmental regulations.

Natural gas may be the biggest immediate winner as coal and nuclear fall back, but it is no Green Knight come to our rescue. It's not even a grey knight.

1. Restrict the contents of fluids used in fracturing to eliminate heavy metals and known carcinogens.  
The industry rightly points out that the additives in fracking average less than half of one percent of the fluid used, but that doesn't diminish the potential hazard when some of these compounds. Many of these compounds were formulated for use in drilling mud previous to the introduction of hydraulic fracturing and their effect in the water supply has not been studied. New regulations are called for to eliminate the use of these chemicals.
2. Limit the use of fracking near aquifers and require environmental impact evaluation. Not just near aquifers currently used as municipal supply, near aquifers, period. Yes, this would affect many area since locations that act as a good trap for natural gas act often act as a good trap for water. But slowing down and applying further study to the consequences of fracking isn't a bad thing, particularly when there is no shortage.
3. Institute a test use of natural gas as transport fuel along an interstate transport corridor. Using natural gas in long-haul trucks was a key part of T. Boone Pickens' plan. That alone is enough to make some people suspicious, and yes, the "gas for wind" promise of Picken's plan is currently off the table. But even if natural gas produces carbon similar to oil or coal, it's available, it's here, and for the foreseeable future it's likely to be price-competitive. A pilot project should be instituted to test the feasibility of using natural gas for this purpose, including determining the infrastructure costs and safety impact. It doesn't have to be I-70 coast-to-coast, but it should be a large enough test to determine if natural gas is a feasible alternative to reduce our need for imported

## HYDROELECTRIC

America's current version of hydroelectric power is unlikely to expand—and no one wants it to. About 8% of the nation's power is currently generated by hydroelectric plants, and they generate that power without producing either greenhouse gases or nuclear waste. However, almost without exception, these plants represent the damming of rivers, the creation of vast impoundments that flood hundreds of square miles, the disruption of habitats, and the drowning of some of the nation's most scenic areas. Hydroelectric dams are also hugely expensive installations. Anyone who has been to Page, AZ, and see the dam that creates Lake Powell can't help but be impressed by the staggering scale of the engineering involved. Anyone who has any idea of what was lost when Glenn Canyon sank under that green water can't help but be overwhelmed by the loss.

Even if we were willing to stand that kind of loss over and over, it doesn't matter—most of the good locations for big hydroelectric dams of the traditional sort were taken decades ago. There are some remaining spots with potential (particularly in California, Washington and Idaho) but damming these locations would represent as much economic loss as gain, as well as creating ecological issues. It's not going to happen. It may sound like a tired refrain, but... our hydroelectric infrastructure is old. While the nature of these installations means that few of them are likely to be demolished over the short term, neither are they likely to be joined by many new installations.

There are other potential forms of hydro-power. Wave energy, created by capturing the movement of ocean waves, is already generating 2 megawatts in a plant built off Portugal two years ago. Installations under construction off Scotland and England will be an order of magnitude larger. Similar designs could be used at several locations in the United States.

Another form of non-reservoir hydroelectric uses submerged turbines. Right now, the use of this technology in the United States is limited to a single small research turbine. Additional study is needed to test the potential for power generation and ways to protect the ecosystem.

Even with all these techniques together, hydroelectric is unlikely to increase its percentage of our electrical generation beyond 10% within the next two decades. Considering the history of dams and their impact, hydroelectricity has few champions. However, some of the new technologies are deserving of investment and consideration.

1. Provide funding for pilot installation of submerged turbine plants in the Mississippi. The potential here is large, with estimates going as high as a gigawatt for a number of small distributed turbines along the bed of the Mississippi. The U.S. should support studies that measure the impact of the single existing turbine, both on wildlife and barge traffic, with the possibility of providing loan assurances and other funds to expand this system. While most new hydroelectric technologies are limited to the coast, submerged turbines may be an energy source in states where tides, waves and offshore winds are not available.
2. Provide extended loan guarantees for the development of wave and tidal systems. Several potential designs are being deployed at locations around the world, and the best design—both in terms of power generation and minimizing environmental impact—is still to be determined. There are different types of systems planned at various locations on both the US east and west coasts, and this area has generated a huge burst of innovative thinking. It's too early for the US government to chose a winner and charge ahead with support for a specific design. It's not too early to get

into the game, push some of the players from pilot to production, and evaluate the results. Both wind and tidal represent huge potential, but only if they can be captured without wrecking offshore areas.

3. Invest in additional pumped storage. Pumped storage, in which water is pumped uphill when there is a surplus of electricity on the grid and allowed to flow downhill to generate electricity when there's a need for more power, is one of the few proven technologies for storing large amounts of energy. We need more storage sites.

## WIND

We're often told that the United States is falling behind in wind technology, that most of our wind turbines are imported, that wind contributes only 2.3% of US electricity. It all makes the idea of getting significant power from wind energy sound a little... overblown. However, that's far from a fair picture of what's happening in the United States. In fact, it overlooks the most exciting development in years—the ongoing triumph of U.S. wind power.

A rate of 2.3% sounds small? Maybe, but domestic production of electricity from wind has more than doubled in only four years. Electric capacity from wind is expanding faster than any other technology in history. The largest wind farm in the world? You'd find that in the United States. Along with the second largest, the third largest, the fourth and the fifth. At 40,000MW, U.S. wind power is second in the world to China, but it's growing and there is enormous capacity for more growth. Those imported wind mills? Not so fast. U.S. companies now account for 80% of U.S. mills and most of the big international competitors have now opened U.S. factories.

In 2009, Iowa became the first state to get more than 10% of its electricity from wind. In 2008, Rock Port, MO, became the first town in the nation to not only supply all its own power from wind, it became an exporter of power to the grid. The economic decline in 2010 tightened credit markets and slowed the growth of wind farms, but wind is one of the few feel-good areas in energy. There are currently more than 100 companies in the United States making components for wind mills.

Yes, wind energy is distributed unevenly, but what energy resource is not? As storage techniques improve, and as mass production and competition (including new U.S. factories) lower the cost of wind power, the U.S. could easily meet its goal of getting 20% of its electrical production from wind. In fact, we may get there earlier than predicted.

If wind power could continue the pace of growth it set for from 2005-2009, we could reach 5% of our

electricity from wind by 2015. If that rate is expanded by a stable credit market and proven demand, we might easily clock past 10% well in advance of 2020. Germany is already getting 7% of its power from wind, and Germany has much less wind to utilize.

The competition for electrical production in the United States over the next five years is going to be chiefly defined by the competition between two technologies: wind and natural gas. Natural gas will hold the support of many existing utilities and can self-bankroll from enormous profits generated from being able to take advantage of existing infrastructure. The United States government can tip this fight in the direction of wind development by extending programs that provide credit for wind farm creation and expansion, and by offering incentives to companies that create products and services related to wind energy.

1. Fund and promote the creation of wind power facilities in the Appalachians. No other industry offers the chance for such immediate impact on the areas now blighted by mountaintop removal mining. Wind power can demonstrate that electricity and jobs can both be generated by preserving the 400-million-year-old peaks rather than turning them to rubble.
2. Speed approval of offshore facilities. You know what's ugly? What mercury and other trace elements from burning fossil fuels are doing to the sea. That's ugly. Offshore is the only way that wind can play a significant role in East Coast power. But for coastal communities to be really welcoming of these facilities, there has to be a means of direct compensation. Farmers can typically make \$5,000 a year by having just one windmill on their property, a

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