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Dealing with the End of Cheap Gas

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The gas price debate in the U.S. is a lot like the movie *Groundhog Day*. Fourteen times over the last 25 years, gas prices in the United States have jumped by at least 5% between the months of March and June.¹ Each time, Americans feel more and more of a pinch on their wallets. And each time, policymakers roll out the same stale and ineffective solutions. While calls for more drilling or releasing the Strategic Petroleum Reserve may make for good sound-bites, these proposals would do little if anything to reduce oil prices.

Reasons vary for the oil price increases we saw in 1979, 1983, 1989, 1992, 1996, 1999, 2000, 2002, 2006, 2007, 2008, and 2011. But America's underlying reliance on oil for transportation fuel, and its impact on our economy, remains the same. While there is competition among oil companies to develop, produce, and distribute gasoline and competition among gas stations to sell it, almost no drivers have a genuine choice of fuels; petroleum owns a virtual monopoly. That keeps us at the whim of global oil prices. This is a long-term problem that, unfortunately, requires a long-term solution. Instead of taking steps that might marginally impact the price of oil for a short period of time—and provide a minimal amount of relief at the pump—the U.S. needs to accelerate the innovation and commercialization of other transportation fuel options. This isn't a set of pie-in-the-sky ideas: electric and natural gas vehicles are already on the road, and researchers are making great strides in developing advanced biofuels.

The Problem: Too Many Empty Promises on Gas Prices

Many on both the right and the left in Washington continue to fixate on expanding domestic supply or investigating speculation or price gouging as the explanation for high gas and oil prices. Like eating cotton candy to stave off hunger, these solutions may momentarily satisfy, but they do not solve the underlying problem. In reality, there is little that U.S. policymakers can do to impact global oil prices. The following are some of the short-term “cotton candy” ideas that are being dusted off yet again in the oil debate.

Drill, Baby, Drill

Many in Congress claim that the U.S. can compensate for high gas prices by expanded drilling in Alaska. The facts, however, are stubborn: opening the Arctic National Wildlife Refuge (ANWR), or other domestic sources, would have no immediate effect on price. It would take 8-12 years before the U.S. would see any increase in supply.² Even then, peak production from ANWR would reduce American imports of foreign oil by only 3-4%. Any impact on price could take 20 years to materialize and would be minimal—less than four cents per gallon.³ And of course, OPEC would retain the power to eliminate even these minimal benefits by decreasing exports by a comparable amount.⁴

End the “De Facto Moratorium”

Despite claims that the Obama Administration has maintained last year’s offshore drilling moratorium, the Interior Department has re-opened the Gulf and other sites to drilling projects—and it has not had a significant impact on oil prices.⁵ Oil resources in the Gulf are simply not sufficient to reduce prices at the pump. The proof is in the 2008 experience, when we saw serious gas price woes long before the BP spill and drilling moratorium.

Relief at the Pump

When prices get high, the temptation to appease voters with short-term relief is strong and often comes at the cost of fiscal responsibility. In 2006, Senate Republicans offered a plan to give Americans a \$100 rebate to ease pain at the pump. In 2008, then-candidates John McCain and Hillary Clinton proposed a temporary holiday from the 18 cents per gallon federal gas tax. While these proposals would provide only mild relief to middle-class families, they would cost the federal government billions. In 2008, the average family spent more than \$2,700 per year on gasoline.⁶ A \$100 holiday amounts to less than two weeks of consumption. The federal budget, however, would suffer an enormous blow: a \$100 rebate, even if limited to Americans earning under \$100,000, would add \$10 billion to our national debt.⁷

Build Refinery Capacity

Some argue that a bottleneck at domestic refineries is to blame for gas price increases and that expanding our refining capacity and reducing regulation would provide relief. However, refining costs make up only 11% of the price of gasoline, while crude oil prices account for 67%.⁸ Furthermore, incremental refining capacity already has risen along with gas prices. And these cannot be regarded as a short-term fix because any expansion of refineries would not be on line for many years. While a close look at our domestic refining capacity may be worthwhile, it would have no significant or immediate impact on oil prices.

Tapping the Strategic Petroleum Reserve (SPR)

The Strategic Petroleum Reserve was created in 1974 as a line of defense against a serious disruption in commercial oil supply. Now, some have signaled support for opening the reserve to combat rising gas prices. The SPR contains 727 million barrels of gas—enough to meet U.S. demand for only 35 days. At best, tapping the reserve could serve as a stop-gap measure. At worst, however, it could cause prices at the pump to increase. Opening the reserve carries with it the danger of overstating U.S. concerns about future supply disruptions, possibly causing a dive in investor confidence and even more pain at the pump. It also makes the United States much more vulnerable if there is a major oil supply

disruption due to unexpected events, like additional uprisings in the Middle East, or a natural disaster.

Eliminate Oil and Gas Subsidies

As the national deficit skyrockets, many are quick to harness drivers' frustration with high gas prices to eliminate tax subsidies for oil companies. Tax subsidies are commonly used to encourage fledgling industries and some argue that large, integrated oil and gas companies need no such help. While eliminating the industry's tax advantages may be a valid tool for deficit-reduction, this proposal would not move our country forward in terms of energy supply or independence. Nor will it likely result in easing the burden on drivers around the country as oil companies seek to satisfy shareholders by passing through the costs to consumers.

The Solution: Innovation and Choice

In 1974, Richard Nixon told the nation in his State of the Union address that he would seek to make the United States energy independent by 1980. In the almost 40 years since, every president has made the same promise. All, so far, have failed. As we face the end of the era of \$2 gas, our country remains captive to oil for transportation. Less than 0.5% of American commercial and private vehicles are electric or hybrids or use natural gas or alternative fuels.⁹

Companies and researchers are developing the technologies that will give American drivers the same choices for fuel that they have for virtually every other product they purchase. But because the technologies are new and competing against a fuel and infrastructure with a 100-year head start, these fledgling industries need assistance to correct for the market's failure to encourage innovation and create competition. This means setting standards for electric vehicles and building-out the infrastructure to alleviate consumers' concerns that they won't have any place to recharge; expanding the use of natural gas for fleet vehicles so that goods and services are not as vulnerable to the price of oil; and developing advanced biofuels that do not impact food prices.

Electric Vehicles

The electric car, long considered the vehicle of the future, is finally here. There were 31 electric or hybrid models on the U.S. market in 2009. By 2016, this is expected to jump to 159 models.¹⁰ Many of these models are built in the U.S. and create manufacturing jobs. Today's battery technology does not yet have the power or energy density to compete with the range, performance, and cost of conventional vehicles. This is where a smart deployment strategy, clear standards, and targeted investments can make all the difference.

Deployment

To help short-term adoption of electric vehicles, as well as innovation, Senators Jeff Merkley and Lamar Alexander have proposed creating “deployment communities.”¹¹ This would provide competitive grants to a select number of cities and towns across the country to serve as test-areas for wide electric vehicle deployment. These communities would learn about the most effective ways to recharge vehicles, the impact they have on the electrical grid, and what unanticipated infrastructure demands might arise. As important, this would provide a clear set of test markets for electric vehicle manufacturers, providing them the certainty they need to continue to innovate.

Standards

Imagine if today’s cars and trucks all had different gas receptacles. No one could be confident that they could find a gas station with the right pump to fill up the tank. That’s the problem today for electric vehicles. There is no single standard for electric vehicle charging receptacles. The National Institute of Standards and Technology should take the lead and create the standards for these receptacles that can lead to mass adoption of electric cars both for short and long distance trips.¹² Creating a standard for charging receptacles also would provide more certainty for companies interested in building recharging stations.

On the local level, most electric vehicle owners will recharge at home. But the lack of a receptacle standard will be a roadblock for creating a national recharging station network. This increases the “range anxiety” of drivers who envision being stranded on a family vacation, weekend trip, or out-of-town sales meeting. Coupling standardization with a federal investment in safe “Direct Current (DC) fast charging” recharging stations would provide EV drivers with access to electricity on long trips. A trigger could be created to only launch the program once a certain number of electric vehicles hit the road. It could be limited to gas stations located within three miles of the federal highway system to address range anxiety, without competing with the home and local recharging stations.

Investment

Finally, even in an era of budget austerity, it is smart to maintain the momentum created by the \$1.5 billion investment in federal advanced batteries research.¹³ Research funded by these investments is already increasing the range and reducing the cost of batteries. Achieving parity with today’s cars would slash the \$146 billion taxpayers spend each year on oil imports from countries on the U.S. State Department’s Travel Warning List.¹⁴ Investments by the Department of Energy in advanced batteries are expected to reduce the cost of several electric car batteries by up to 70% by 2015, and create the ability to produce 500,000 electric vehicles annually.¹⁵ Farther out on the horizon, ARPA-E has invested \$80

million into a variety of groundbreaking battery technologies that lead to a low cost battery that can power a car for far longer than a full tank of gasoline.¹⁶

Advanced Biofuels

Another alternative to oil is another liquid fuel that drivers could pump into their car's tank as easily as gasoline. Biofuels made from corn already displace over 300 million barrels of oil every year.¹⁷ But today's biofuels come from food crops like corn, impact food prices, and displace a low percentage of oil-based gas on an energy basis (approximately 5%) at the pump.¹⁸ Advanced biofuels offer a path towards making a new form of "drop in" fuel a reality. These new fuels would come from a variety of sources, including algae, agricultural waste, or even municipal waste. American farmers could grow advanced biofuels domestically to help replace foreign oil. This would not require the new purchase of vehicles, which is currently necessary to use gasoline blended with ethanol.¹⁹

Late-stage research is already underway that could bring down the cost of advanced biofuels so that they are competitive with gasoline. But investments are slowing because of a lack of advanced biofuel access to any commercial scale refineries. Without such refineries, these new fuels cannot get to the market. President Obama has called for four bio-refineries to be up and running in two years.²⁰ This should be a national priority. These large-scale projects not only would provide new fuel options for drivers (as well as in marine and air travel), they would provide a valuable test bed to determine how to make alternative fuels more efficiently and effectively for the next set of commercial-scale bio-refineries.

Natural Gas

The discovery of huge new fields of recoverable, affordable natural gas in the Eastern and Intermountain United States has opened up new possibilities for domestic use of this fuel source. It is domestic, cheaper than oil, and produces less pollution. But of the 6.5 million trucks on the road in the United States, only 112,000 currently use natural gas.²¹ To be sure, natural gas is not ideal for long-haul trucks or personal vehicles because of a shortage of refueling stations, infrastructure bottlenecks, and relative lack of horsepower. But it is an excellent alternative for the 66% of commercial trucking trips that are less than 100 miles. Natural gas can already compete with gasoline on price and its infrastructure has already been built-out in many urban areas for city buses and companies with large vehicles fleets, like UPS. Internationally, more than 12 million vehicles already use natural gas.²²

To provide Americans with a choice between natural gas and diesel-fueled commercial vehicles, the government could provide assistance to states and companies to help them transition away from diesel-dependent trucks by retrofitting almost 100,000 trucks to

natural gas over the next 5 years. Converting the nation's 6.5 million 18-wheeler freight trucks to natural gas would save 4.2 million barrels of oil per day,²³ or nearly 20% of our nation's total consumption.²⁴ More importantly, this would provide a market signal that commercial consumers prefer a choice between competing technologies and fuel sources, thereby leading to greater competition between oil and natural gas as a transportation fuel.

Conclusion

For the last 100 years, the only choice Americans have had in filling up their cars is between gas stations. In an era of cheap oil and gasoline, that wasn't such a bad strategy. But now, the era of cheap gas is over, and we need new solutions.

What we don't need are short-term purported fixes that may alleviate the symptoms temporarily, but do nothing to treat the underlying disease. The real medicine the United States requires is developing alternative ways to power vehicles, whether it's electric cars, natural gas, or advanced biofuels. This will take some time to have an impact. But after 40 years of escalating gas prices and no real solutions, it is far past time to get started.

ENDNOTES



- 1.** United States, Department of Labor, Bureau of Labor Statistics, Division of Consumer Prices and Price Indexes, “Gasoline, Unleaded Regular - APU000074714,” Top Picks, Consumer Price Index-Average Price Data. Accessed May 9, 2011. Available at: <http://data.bls.gov/cgi-bin/surveymost?ap>.
- 2.** United States, Department of Energy, Energy Information Administration, “Analysis of Crude Oil Production in the Arctic National Wildlife Refuge,” May 2008, Accessed March 16, 2011. Available at: <http://www.eia.doe.gov/oiaf/servicrpt/anwr/methodology.html>.
- 3.** Bryan Walsh, “Will More Drilling Mean Cheaper Gas?” *Time Magazine*, June 18, 2008. Accessed March 16, 2011. Available at: <http://www.time.com/time/business/article/0,8599,1815884,00.html#ixzz1GmYuMU2m>.
- 4.** United States, Department of Energy, Energy Information Administration, “Analysis of Crude Oil Production in the Arctic National Wildlife Refuge.”
- 5.** Associated Press, “Obama plans steps to speed up US oil production but moves won’t calm gas prices any time soon,” *The Washington Post*, May 14, 2011. Accessed May 23, 2011. Available at: http://www.washingtonpost.com/politics/obama-announces-lease-extensions-more-frequent-sales-to-speed-up-us-oil-production/2011/05/14/AFy53H3G_story.html.
- 6.** United States, Department of Labor, Bureau of Labor Statistics, “Consumer Expenditures—2009,” October 5, 2010. Accessed March 16, 2011. Available at: <http://www.bls.gov/news.release/cesan.nr0.htm>.

- 7.** Martin Wolk, “GOP tax rebate plan called costly, ineffective,” MSNBC.com, April 28, 2006. Accessed March 16, 2011. Available at: http://www.msnbc.msn.com/id/12521259/ns/business-eye_on_the_economy/.
- 8.** United States, Department of Energy, Energy Information Administration, “Gasoline and Diesel Fuel Update,” March 14, 2011. Accessed March 16, 2011. Available at: <http://eia.gov/oog/info/gdu/gasdiesel.asp>.
- 9.** United States, Department of Energy, Energy Information Administration, “Summary of Onroad Alternative Fuel and Hybrid Vehicles Made Available, by Fuel Type, Configuration, and Weight Class,” April 2010. Accessed May 23, 2011. Available at: http://www.eia.doe.gov/cneaf/alternate/page/atftables/atftf_s1.html.
- 10.** “2011 U.S. Green Automotive Study,” Press Release, J.D. Power and Associates, April 27, 2011. Accessed May 23, 2011. Available at: <http://www.jdpower.com/news/pressRelease.aspx?ID=2011039>.
- 11.** “Merkley, Alexander Introduce Bill to Jump-Start Electric Vehicles,” Press Release, Office of Senator Jeff Merkley, May 11, 2011. Accessed May 23, 2011. Available at: <http://merkley.senate.gov/newsroom/press/release/?id=C69367FA-C250-4E54-AF4E-EC345874A511>.
- 12.** Julie Wernau, “Electric vehicles hit plug-in problem,” *The Chicago Tribune*, February 16, 2011. Accessed May 23, 2011. Available at: http://articles.chicagotribune.com/2011-02-16/business/ct-biz-0216-charging-stations-20110216_1_350green-llc-nissan-leaf-electric-vehicles.
- 13.** “President Obama Announces \$2.4 Billion in Grants to Accelerate the Manufacturing and Deployment of the Next Generation of U.S. Batteries and Electric Vehicles,” Press Release, The White House, Office of the Press Secretary, August 5, 2009. Accessed May 23, 2011. Available at: http://www.whitehouse.gov/the_press_office/24-Billion-in-Grants-to-Accelerate-the-Manufacturing-and-Deployment-of-the-Next-Generation-of-US-Batteries-and-Electric-Vehicles/.

- 14.** Jonathan Powers, “Oil Addiction: Fueling Our Enemies,” Report, Truman National Security Project, February 17, 2010, p. 4. Accessed May 23, 2011. Available at: http://www.trumanproject.org/files/papers/Oil_Addiction_-_Fueling_Our_Enemies_FINAL.pdf.
- 15.** United States, Department of Energy, “The Recovery Act: Transforming America’s Transportation Sector, Batteries and electric Vehicles,” Report, July 14, 2010, p. 2. Accessed May 23, 2011. Available at: <http://www.whitehouse.gov/files/documents/Battery-and-Electric-Vehicle-Report-FINAL.pdf>.
- 16.** United States, Department of Energy, “The Recovery Act: Transforming America’s Transportation Sector, Batteries and electric Vehicles,” Report, July 14, 2010, p. 2. Accessed May 23, 2011. Available at: <http://www.whitehouse.gov/files/documents/Battery-and-Electric-Vehicle-Report-FINAL.pdf>.
- 17.** Brian Curtis, “U.S. Biofuels Industry: Mind the Gap,” Report, Concentric Energies & Resource Group, Inc., April 2010, p. 22. Accessed May 23, 2011. Available at: http://www1.eere.energy.gov/biomass/pdfs/us_biofuels_industry_report.pdf.
- 18.** Author calculation is that 5.46% of gasoline is displaced based on an analysis of EIA data of U.S. consumption of motor fuel heat content. See United States, Department of Energy, Energy Information Administration, “Table 10.3 Fuel Ethanol Overview,” Monthly Energy Review, April 2011. Accessed May 23, 2011. Available at: http://www.eia.doe.gov/totalenergy/data/monthly/pdf/sec10_7.pdf; See also United States, Department of Energy, Energy Information Administration, “Table 3.6 Heat Content of Petroleum Products Supplied by Type,” Monthly Energy Review, April 2011. Accessed May 23, 2011. Available at: http://www.eia.doe.gov/totalenergy/data/monthly/pdf/sec3_17.pdf. *Note: EIA does not compile data on consumption of E-85 by heat content.*
- 19.** United States, Department of Energy, Alternative Fuels & Advanced Vehicles Data Center, “What is a flexible fuel vehicle?” November 11, 2010. Accessed May 23, 2011. Available at: http://www.afdc.energy.gov/afdc/vehicles/flexible_fuel_what_is.html.

- 20.** John McArdle, “White House: Obama to propose four-part strategy to reduce oil imports,” *Environment & Energy Daily*, March 30, 2011. Accessed May 23, 2011. Available at: <http://www.eenews.net/EEDaily/2011/03/30/archive/1?terms=biofuel>.
- 21.** “Facts about Natural Gas Vehicles,” Natural Gas Vehicles for America, Accessed May 23, 2011. Available at: http://www.ngvc.org/about_ngv/index.html.
- 22.** “Facts about Natural Gas Vehicles,” Natural Gas Vehicles for America, Accessed May 23, 2011. Available at: http://www.ngvc.org/about_ngv/index.html.
- 23.** Author’s calculation. See “The Plan,” PickensPlan.com, Accessed May 23, 2011. Available at: <http://www.pickensplan.com/theplan/>.
- 24.** Author’s calculation. See United States, Department of Energy, Energy Information Administration, “International Energy Statistics,” Accessed May 23, 2011. Available at: <http://tonto.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=5&pid=5&aid=2>.