

A Declaration of Energy Independence

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December 20, 2004; Page A15

In the 30 years since the oil shocks of the 1970s, our original hopes to achieve energy independence have given way to the less ambitious goal of achieving energy security, defined as "secure access to adequate supplies of primary energy at affordable cost."

Recent expert analysis suggests, however, that we may have given up too soon and that while energy security may be the best we can hope for in the short term, within a generation we can be truly independent -- free of all reliance on foreign oil. Let's consider what will be required to get us through both periods successfully -- starting with the holy grail, energy independence.

Since the 9/11 attacks, two trends have emerged that seriously impact our ability to achieve energy security, let alone independence: the evident vulnerability of Persian Gulf regimes and the oil flows from them (not to mention the cost of providing security to the region), and the separate but related run-up in the price of oil. These trends have led Westerners to begin finally to think seriously about the need for a national energy policy. New ideas for tackling these problems are emerging on both the supply and demand side. And while we are far from consensus, it is already possible to see the contours of a comprehensive policy that will enable us to cope with the foregoing threats to our energy security on an affordable basis if we have the leadership and political will to do so.

Thus far supply-side proposals such as oil production in the Alaskan National Wildlife Refuge or developing natural gas offshore the lower 48 states have dominated the debate. These ideas are sound but they alone will not enable us to achieve energy independence.

Perhaps the most rigorous and surely the most dramatic analysis of what it will take to wean us from foreign oil was tasked by the Pentagon and carried out by the Rocky Mountain Institute, a respected center of hard-headed, market-based research. The report, "Winning the Oil Endgame: Innovation for Profits, Jobs and Security" (www.oilendgame.org¹), is now out in book form and has received positive reviews.

In his forward to the book, George Shultz writes, "How many more times must we be hit on the head by a two-by-four before we do something decisive about this acute problem? . . . Hybrid technology is already on the road and currently increases gas mileage by 50% or more. . . . New, ultralight-but-safe materials can nearly redouble fuel economy at little or no extra cost . . . hydrogen could be produced from natural gas saved from currently wasteful practices."

The report outlines the steps to get us from here to zero reliance on foreign oil: First, to retool automobile, truck and aircraft manufacturing to reap fuel efficiencies by using advanced composite and lightweight steel construction. Such a metamorphosis could eliminate as much as 52% of the oil we use today by 2030 with no loss in safety or performance. Second, we should exploit recent advances in technologies for converting cellulose to ethanol and thereby replace another 25% of the oil we consume today. In the

process we could increase farm income by tens of billions of dollars and create 750,000 jobs.

In the book's powerful summary conclusion, Dr. Amory Lovins, president of the Rocky Mountain Institute and the report's principal author, argues persuasively that by 2035 we can be entirely independent of imported oil and that "it will cost less to displace all of the oil that the United States now uses than it will cost to buy that oil." Specifically, he continues, "by 2025, the annual economic benefit of displacing all of our current oil imports would be \$130 billion gross (or \$70 billion net of the displacement's cost). To achieve this does not require a revolution, but merely consolidating and accelerating trends already in place."

But 2035 is not, of course, tomorrow. In order to improve our immediate energy security, we must diversify our sources of hydrocarbons away from the Middle East. Even a cursory survey of alternative sources of natural gas leads one to consider Russia.

First, a few facts. Today, measured in barrels of oil equivalent, Russia is the largest producer of energy in the world. It also has more natural gas than any other country in the world -- roughly 1,700 trillion cubic feet (proven recoverable). This gas is heavily concentrated on the North coast of Russia on the Yamal peninsula. And it is stranded. That is, there are no pipelines to get it to the market. These circumstances, however, make it an ideal site to anchor several so-called trains to produce liquefied natural gas (LNG) for ship transport to North America.

Today, independent companies are producing gas in the Yamal peninsula for less than \$1 per thousand cubic feet (mcf) and there is solid evidence that it could be liquefied, shipped and delivered to North America for at least one-third less than the current price of over \$6/mcf.

Some will say -- in the wake of the Yukos affair -- that the risk of politically motivated interference in Russia is too great for investments of the scale required. It takes little thought, however, to distinguish between an isolated confrontation driven by personal differences -- as the Yukos affair is -- and one driven by the huge Russian strategic interest in penetrating the U.S. gas market.

In sum, it is entirely in American and Russian interest to encourage and facilitate a growing trade in LNG. Especially when one considers the alternative of remaining reliant on oil and gas from the Persian Gulf.

Among the serious problems facing the new administration surely the long-term threat to our economy of \$45/bbl oil and \$6/mcf natural gas must be near the top. This threat is accentuated by the threat of disruption of deliveries from the Persian Gulf. It is becoming clear, however, that the means to achieving near-term energy security and ultimate independence from foreign oil are at hand. Courage and leadership are all that it takes to get us there.

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