

# HOME SWEET HOME

## ENERGY INDEPENDENCE?

By Troy Anderson

**I**n 2011, Valero Energy Corporation purchased just a quarter of the crude oil it processed at its refineries from North American suppliers. Today, the company acquires nearly half of its oil from North American sources.

“We have been able to exclude a lot of overseas crude oil that we would have imported in the past, especially to our Gulf refineries,” says Bill Day, vice president of communications at the San Antonio-based company, which owns 16 petroleum refineries. “This is because of the rapid production of new sources of crude oil here in the United States and Canada. That’s going to continue to grow, because refining companies like Valero are expanding.”



In response to the national energy boom, the Fortune 500 company is spending \$800 million to expand the capacity of its refineries in Houston, Corpus Christi, and the Texas Panhandle.

“We are building new units so that we can process even more North American crude oil,” Day says. “There is a lot more drilling going on here in North America because of advances in technology. Horizontal drilling and hydraulic fracturing have made it possible to extract large amounts of oil from underground areas. Everybody knew the oil was there, but there was no way to get to it, especially in a cost-effective way.”

### AN AMERICAN ENERGY REVIVAL

The expansion plans at Valero come amid what American Petroleum Institute President and Chief Executive Officer Jack N. Gerard calls an “American energy revival”—one that could help the United States become “energy independent” within a decade. It also has potentially impressive economic ramifications for the country.

“It would be an enormous boost to the Texas economy,” says Bill Hammond, president of the Texas Association of Business. “It would create tens of thousands of jobs and increase state revenues for Texas massively. Texas would probably be in a position to reduce some of the taxes we have now.

“The ripple effect of oil and gas activity is huge too. Real estate values would increase, and all the businesses that service the oil fields and related sectors would see a major increase in their revenues.”

In API’s latest *State of American Energy* report, Gerard wrote that America is on the “cusp of energy self-sufficiency and security” and that it has the potential to be an “energy superpower that is not only energy self-sufficient, but also a net exporter of refined petroleum products to markets outside the United States.”

“In fact, the United States is already the global leader in oil and natural gas production and together with Canadian energy supplies could produce more than 100 percent of its liquid fuel needs by 2024,” Gerard noted. “But now we are at a critical point, one that will define our path forward.”

In the last two years, total oil production in the United States has risen by more than 30 percent, from 6.5 million to 8.45 million barrels a day, according to the API report.

In Texas, oil production hit a 34-year high in February. Oil drillers pumped nearly 3 million barrels of crude oil

a day in February—the highest daily amount pumped in Texas since January 1981, American Enterprise Institute scholar Mark J. Perry noted in a recent report. Oil production in Texas has more than doubled since 2011. The state now produces more than 36 percent of all oil in the United States.

## **NEW TECHNOLOGY: INCREASING DOMESTIC OIL ACCESS, PLUMMETING OIL IMPORTS**

This is largely the result of “revolutionary drilling technologies” that have allowed drillers to access “vast oceans” of Texas shale oil in the Eagle Ford Shale and Permian Basin oil fields, Perry wrote. These oil fields are now producing crude oil at a rate of more than 1 million barrels per day, “joining an elite group of only ten super-giant oil fields globally that have ever produced that amount of oil at their peak,” wrote Perry, who is also an economics professor at the University of Michigan.

At the same time, the amount of oil America imports has dropped substantially. In 2005, the United States imported 60 percent of its oil. In 2012, the percentage fell to 40 percent. Today, the United States has an estimated 233 billion barrels of technically recoverable oil and 2.335 trillion cubic feet of technically recoverable gas, according to the API.

Proved oil reserves increased by 15 percent in 2012 to 33 billion barrels, the largest increase in oil reserves since 1970, when 10 billion barrels of Alaskan oil reserves were added to the United States total, according to the U.S. Energy Information Administration. Proved oil reserves in 2012 increased for the fourth year in a row and were the highest since 1976. Natural gas proved reserves decreased by 8 percent in 2012, to 323 trillion cubic feet.

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“Today, thanks to the innovation and entrepreneurial spirit of America’s oil and natural gas industry, this nation has the potential to shed the yoke of foreign energy dependence,” Gerard said during his “State of American Energy” address. “Implementing smart, pro-growth energy policies will help to ensure that future Americans only know their country as an energy leader.

“Our underlying message is equally simple. Energy is fundamental to our society, and thanks to American innovation and entrepreneurial spirit, our nation stands among the world’s leaders in energy production and is poised to be the leader if we get American energy policy right.”

## **CAN THE UNITED STATES ACHIEVE ENERGY INDEPENDENCE?**

The debate over the future of America’s energy policy and whether the United States could ever be energy independent has its origins in the 1970s oil crisis. In 1973, President Nixon promised Americans energy independence shortly after Arab oil exporters started an embargo—quadrupling oil prices—in retaliation for the United States’ support of Israel during the Yom Kippur War. The fiasco contributed to the 1973 economic recession. The disruption in global oil supplies continued through the end of the 1970s, when the shah of Iran was toppled in the Iranian Revolution.

The spike in gas prices came as a shock to Americans, who had become

used to abundant supplies of inexpensive American oil. In response, the United States implemented measures to prevent further disruptions in the oil supply, including the creation of the Strategic Petroleum Reserve, increased energy efficiency, and the promotion of alternative fuels.

Yet dependence on imports continued to increase through the 1970s, ’80s and ’90s. When Nixon made his speech in 1973, the United States imported 35 percent of its oil. By 2005, that percentage had risen to 60 percent. During the same period, United States oil production dropped by more than a third.

This trend began to turn around with the discovery of natural gas reserves and tight oil in the United States. Thanks to technological breakthroughs, domestic oil production boomed from 1998 to 2003. Since 2008, United States crude oil production has jumped by 50 percent, reducing our dependence on foreign oil.

Today, energy independence is a hot topic of political discussion.

In 2011, the oil and natural gas industry accounted for more than \$1 trillion of America’s GDP and was responsible for supporting 9.8 million U.S. jobs across a variety of professions, according to the API report. A recent report by Citigroup Global Markets found that the cumulative impact of new production and lower consumption could increase the GDP by 2 to 3 percent (between \$370 billion and \$624 billion) and create between 2.7 and 3.6 million new jobs by 2020.

“Major news sources such as *The Wall Street Journal*, *Business Insider*, and *The Globe and Mail* have proclaimed the birth of ‘Saudi America,’ and the beginning of a new era where America is ‘energy independent,’” wrote the authors of a recent Fuel Freedom Foundation report titled “Is Energy Independence Really Possible in the United States?” They go on to note that “‘energy independence,’ however, is a fickle term that can have multiple meanings.”

As usually defined, “energy independence” refers to the goal of reducing U.S. imports of oil and other foreign sources of energy. Proponents of energy independence often argue that this reduction would leave America unaffected by global



energy-supply disruptions and lessen the nation's reliance on politically unstable countries for its energy.

"No country will ever be completely independent of foreign oil," says Jacqueline Weaver, the A.A. White Professor of Law at the University of Houston. "That's an important concept, because if the Strait of Hormuz closes—if they ever bomb it or something terrible happens—the international price of oil will zoom. We may not be importing any oil out of the Middle East at that time, but consumers in the United States will be as tremendously affected by the high prices as anyone else."

### **THE ENERGY BOOM: HERE TO STAY, OR FLY-BY-NIGHT?**

This policy debate has a number of dimensions. One of the most significant questions is how long the energy boom can last.

Tad Patzek, the chairman of the Department of Petroleum and Geosystems

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Engineering at the University of Texas at Austin, says he doubts the production boom in the Eagle Ford, Permian Basin, and Bakken Shale will last as long as many believe.

"You have to continually drill in order to keep production flat, or you have to drill even faster to increase production, which is what has been happening in the last three years," Patzek says. "There's only so much you

can do with the number of drilling rigs and the amount of sand and water we can use to keep that production level up. These wells decline at 60 to 70 percent in the first year. In comparison, most wells decline by 5 to 10 percent in the first year." However, Patzek says, much of the public is unaware of this fact.

"The boom in Texas is very real, and there are people who are becoming rich in Midland, Houston, Dallas and around San Antonio," Patzek says. "But all of this is achieved with an incredible rate of drilling and expenditure of resources. So the question is at what point that rate of using resources will saturate—and I'm not so sure that we aren't close to the saturation point, which means the boom won't continue. When the boom does not expand, it usually shrinks. The boom cannot last, as with all booms."

James Fallon, the director of consulting at IHS Energy—a research, analytics, and consulting firm in Houston—says he's familiar with the skepticism but has a more optimistic viewpoint.

"There is consensus building that this is not a short-lived phenomenon," Fallon says. "My personal sense is that in five years we won't be standing around saying, 'What happened to the tight oil revival?' If you look at the tight oil revival in terms of the quality and size of the resource base and the pace of drilling technological innovation, the resurgence in U.S. energy production has staying power, and it has the potential to impact the economy for 20 years or more."

A recent IHS report found that unconventional oil and natural gas contributed \$284 billion to the GDP

in 2012, a figure expected to double to \$533 billion by 2025. The authors projected that the number of jobs supported by the energy boom would rise from 2.1 million in 2012 to 3.9 million in 2025. Government revenues will exceed \$1.6 trillion from 2012 to 2025. Meanwhile, savings from lower natural gas prices will add more than \$2,700 in disposable income per household in 2020, rising to \$3,500 by 2025.

Patzek also argues that the energy boom is connected to the nation's rising federal deficit. Federal Reserve Chairman Janet Yellen recently told the Joint Economic Committee of Congress that the deficit is expected to "rise to unsustainable levels." The total debt of the federal government at the end of fiscal year 2013, including both the debt held by the public and the intragovernmental debt, was \$17 trillion. The Congressional Budget Office estimates that by 2024 the total debt of the federal government will be \$27 trillion—of which \$21 trillion will be debt held by the public.

"We need to wake up," Patzek says. "We're trying to convince the world that we're self-sufficient in energy, which we are not and never will be. First, we need to honestly reassess where we are, how long we can carry on like this, and what needs to be done with our natural resources and our economy so we are not financed by our growing national debt. It will break by the end of 2016."

However, a recent API poll found strong majorities of American voters support more domestic oil and natural gas development. In the April poll, 91 percent of registered voters agreed that increased production of domestic oil and natural gas resources could lead to more jobs in the United States, along with 87 percent who believe this would help stimulate the economy.

## THE POLITICAL LANDSCAPE

At the same time, the Obama administration has come under criticism for attempting to stymie oil and natural gas production with executive and regulatory roadblocks. Fuel and petrochemical manufacturers have urged the administration to lift the ban on developing federal lands, both on- and offshore.

In his recent State of the Union address, Obama said the nation is "closer to energy independence than we've been in decades."

"One of the reasons why is natural gas—if extracted safely, it's the bridge fuel that can power our economy with less of the carbon pollution that causes climate change," Obama said. "Businesses plan

to invest almost \$100 billion in new factories that use natural gas. I'll cut red tape to help states get those factories built, and this Congress can help by putting people to work building fueling stations that shift more cars and trucks from foreign oil to American natural gas. My administration will keep working with the industry to sustain

production and job growth while strengthening protection of our air, our water, and our communities. And while we're at it, I'll use my authority to protect more of our pristine federal lands for future generations."

One of the most heated parts of this debate involves the Keystone XL pipeline. The oil pipeline system runs from Alberta, Canada, to refineries in Steele City, Nebraska; Patoka, Illinois; and the Gulf Coast of Texas. Three phases of the project are in operation, and the fourth is awaiting federal approval.

"It needs to be completed so that Texas businesses can fully benefit from a source of petroleum to convert to gasoline coming from the north to the refiners on the coast," Hammond says. "The administration keeps low-playing it and allegedly has put the decision off until November after the election. I don't know what they will do after that. It's pretty much a no-brainer that they should approve it. The tar sands [the fields of Alberta, Canada] will be exploited—either

shipped to China or shipped to Texas. We prefer they come to Texas."

Environmental groups have opposed the Keystone pipeline plan. They favor redirecting the \$70–100 billion investment in tar sands infrastructure to sustainable energy alternatives such as electric vehicles, plug-in hybrids, and solar and wind energy. Some of these groups, including the Sierra Club, have also expressed concerns about the alleged "toxicity of the chemicals that are being injected underground and through our drinking water aquifers."

"The Keystone pipeline is not going to make or break the U.S. refinery industry and our ability to export oil," Weaver says. "It won't have that huge of an effect on the international market. The international market for oil is huge. The fight over the Keystone pipeline is really about climate change and greenhouse gases. A lot of Canadians don't want the pipeline running through their land, either. It's not just some citizens in the United States who oppose it."

But Rayola Dougher, an API senior economic advisor, says the pipeline is vital for the Texas energy industry and economy.

"Our refineries are losing the source of supply they had before," Dougher says. "They are getting less from Mexico than they had in the past, and a lot less from Venezuela. This would replace a lot of the lost crude oil in the marketplace. Also, if we can produce more from this hemisphere, we can put downward pressure on world oil prices while we create jobs, while we grow government revenues and all the other good things that come from this economic growth and trade." **N**

*An award-winning journalist at the Los Angeles Daily News, the Press-Enterprise and other newspapers for 20 years, Troy Anderson writes for Reuters, Newsmax, Christianity Today, Bankrate Insurance and many other magazines and online publications. He lives in southern California. For more information, visit [www.troyandersonwriter.com](http://www.troyandersonwriter.com).*