

THINKING BEYOND OPEC

Frederick Cedoz

Today, Americans are more aware than ever of energy issues. At the same time, American energy consumers are more vulnerable than ever to price volatility brought about by demography, geology and geopolitics. The costs of gasoline for our cars and SUVs, the diesel fuel that allows our truck drivers to move goods from ports to our doorsteps, and the home heating fuels that allow us to sleep comfortably on cold winter nights, have all seen dramatic increases in recent years.

So far, however, the debate over true “energy security” in the United States has been superficial at best. Railing against the dangers of imported oil may be a useful campaign tactic for politicians, but it has engendered little by way of real policy alternatives. It likewise has neglected a major strategic development—the effective demise of the Organization of Petroleum Exporting Countries (OPEC), the powerful price-fixing cartel that has steered the global oil market for much of the past half-century.

These changes beg a rethink of U.S. policy. They also underscore the pressing need for a real energy security strategy, one focused upon greater hydrocarbon production at home, new and safer suppliers abroad, and investments in the development of innovative energy technologies.

The perfect energy storm

The global energy scene is changing dramatically. For decades, world energy markets have been able to withstand a multitude of uncertainties.



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But never in recent times have so many factors weighed on the ability of producers to get oil to market, as well as the consumer's access to hydrocarbons and refined products, as in the last several years. These factors, and undoubtedly many others, began coming together in a "perfect energy storm" in early to mid-2003—just as the U.S. economy began to recover from the terror attacks of September 11th.

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One set of factors deals with demand. There was a time when an increase in demand could be met domestically by opening the chokes on the wells over the prolific fields of Texas, Oklahoma and Louisiana. Subsequently, when U.S. conventional oil production peaked in 1970,¹ American policymakers and the general public took solace in the fact that the Saudis could produce more from their massive oil fields. But today, things are different. Increased demand no longer refers solely to an increase in U.S. demand. Even though the U.S. still consumes some 23 percent of world oil production (roughly 20 million barrels per day), the most dramatic increase in demand is coming from emerging economies in Asia—most notably China and India. According to the U.S. Department of Energy's Energy Information Administration (EIA), worldwide oil demand grew by more than 2.7 million barrels daily in 2004. Of that, 1.9 million were attributable to growing Asian

economies, with China accounting for more than 1 million barrels a day in demand growth.²

Another deals with supply. Finding and bringing new sources of crude oil to market often takes years or even decades. That length of time has increased in recent years, as the world's major oil producers have had to look in ever more remote locations for the crude to replace declining production from established fields. Energy investment banker Matthew Simmons has illustrated just how difficult it is to find giant and supergiant fields (those capable of producing 100,000 and 500,000 barrels a day, respectively), and that the chances for such great new finds in Saudi Arabia "must now be deemed remote."³

The supply-side problem does not stop there. Once crude is brought to world markets, it has to be refined. Increasing domestic demand for gasoline and other refined products is causing U.S. refineries to operate at maximum output. This has created a great degree of stress on the supply chain, reducing time available for routine maintenance, seasonal blending switchovers and the occasional unforeseen shutdowns (such as those that occurred in the wake of hurricanes Katrina and Rita).

The final variable is geopolitical risk. The impact of geopolitics on the oil markets has steadily increased over the last two decades, and particularly since September 11th. With the advent of the Global War on Terror, the political instability endemic to the majority of OPEC producers has taken on increased importance. Attacks on Saudi oil infrastructure, once just a remote possibility, now seem probable. The impact of this calculus is already being felt; political consensus among the United States and its allies is that it is just a

matter of time before a terrorist event removes significant oil supplies from the market.

Iraq is also an issue. The oil situation in the former Ba'athist state, which many policy planners hoped would provide the economic spark with which to rebuild the country after decades of mismanagement, seems to be worse than first thought. Iraq is actually producing less oil today (1.9 million barrels daily) than at the end of major combat operations in 2003—a decline attributable to repeated terrorists bombings of pipelines and other key points of the country's oil infrastructure.⁴ And while hope remains that the insurgency will end and the country will become stable, democratic and economically prosperous, early indicators regarding the country's existing oil reservoirs are not cheery.

Geopolitical risk is not confined to the Persian Gulf, however. Russia, once thought to be an emerging swing producer (possibly joining Saudi Arabia as one of very few countries with excess production capacity), has turned out to be just as unpredictable as many third world oil producers. The de facto nationalization of the Yukos oil conglomerate—and the attendant political instability that has ensued in the country's energy sector—has transformed investing in the Russian oil industry from a potential bonanza into a game of roulette.

All of this, combined with nationalist chest pounding from Venezuela's Hugo Chávez, persistent theft, corruption and supply disruptions in Nigeria and even threats of oil worker strikes in prosperous Norway, have generated a "geopolitical risk premium" of between \$10 and \$15 dollars a barrel.

OPEC, RIP

Not all that long ago, the answer to such problems would have come from OPEC. Historically, the public statements that invariably followed the behind-the-scenes arm-twisting within the world's most powerful cartel were treated as gospel by global markets, and oil commodity futures prices reacted accordingly. For as long as anyone can remember, OPEC has been the glove outlining the invisible hand allegedly controlling the international oil market. And for just as long, consumers have benefited from the comfort of this controlling presence.

Today, however, the situation is quite different. Despite the cartel's best efforts, mounting evidence points to the fact that OPEC has become increasingly ineffective in reining in high oil prices. And with the disappearance of the preferred "price band" for OPEC crude (\$28-\$32 per barrel), some wonder whether the cartel still has any interest at all in bringing prices down.

This impotence derives from a confluence of factors. With estimates for crude oil demand steadily being revised upward, market fundamentals are working against the cartel. And with most of the additional supply to meet this demand projected to come from non-OPEC producers, the cartel is facing a dramatic diminution in influence. At the same time, political instability in OPEC's primary region, the Persian Gulf, is working against investor confidence.

Also at issue is the fact that the price of oil's impact on the world economy is smaller today than it was at the time of the oil shocks of the late 1970s. Even though analysts and pundits like to talk sensationally about "record-high oil prices," the U.S. gets more than double the GDP out of a

barrel of oil now than it did in the mid-1970s. As a consequence, oil's impact on the world economy as a whole is less now than it was at the height of OPEC's power.

Momentum also is having a tremendous impact on oil prices. While there are virtually no fundamental fiscal underpinnings for oil prices soaring above \$50 a barrel, it is unlikely that any cartel could prevent prices from skyrocketing purely for psychological reasons.

Finally, there is the matter of organizational cohesion. In the past couple of years, there has been much internal debate among OPEC members on increasing production. Saudi Arabia, Nigeria and some other producers have been advocating for greater production, while the increasingly anti-American regimes in Iran and Venezuela want to hold the line. The result has been energy paralysis.

All of this begs the question: if OPEC can no longer bring stability to the world oil market and deliver its product at "reasonable prices," why does it still exist? And if it can no longer reliably set prices and calm markets, shouldn't we look to create some other mechanism that can?

A hemispheric approach to energy security

In fact, we do not have to look very far. You might not know it, but Canada and Mexico are already the top two suppliers of oil to the United States, respectively.⁵ When combined with domestic production, imports from these two continental neighbors supply more than 50 percent of total U.S. daily oil consumption. More promising still, Canada recently vaulted to the number-two spot among the world's proven reserve holders (behind Saudi Arabia) with

its classification of 176 billion barrels of economically recoverable oil from massive oil sands deposits, located primarily in northern Alberta.

Regardless of America's perception of Canada—and, indeed, sometimes even Canada's perception of itself—our northern neighbor is officially an energy superpower. The U.S. currently imports roughly 2 million barrels per day of Canadian crude.⁶ Of that volume, approximately 800,000 barrels come from oil sands deposits. And with oil sands production projected to increase from 1.2 million barrels daily to as much as 4 million by 2015, we will be able to count on increased supplies even amid mounting interest in Canadian oil from countries such as China. In the next decade, Canada's total daily oil production will reach close to 5 million barrels a day,⁷ over half of which (more than 2.5 million barrels daily) will likely flow to the U.S.

This oil trade would be more than simply an expansion of the largest commercial trading relationship in the world. Along with additional supplies of Canadian crude will come the need for American and Canadian jobs to produce the oil, and—just as important—expand the infrastructure to get that crude to market. Each barrel of oil we buy from Canada is a barrel whose profit doesn't end up in the hands of those who may wish us harm. And every job building a pipeline or expanding a refinery in the U.S. puts food on the table of Americans and tax revenue in our national treasury.

Mexico, on the other hand, has an uphill climb with respect to expanding its oil output, but the tools are all there. The Mexican government has allowed the nationalist sentiment that goes along with being

a major oil producer to impede its ability to reliably expand production to meet domestic demand, let alone produce additional crude for export. That said, the geology of the under-explored Mexican portions of the Gulf of Mexico is likely to be as prolific as the American waters of the Gulf have proven to be.

Expanded trade, properly managed, means expanded opportunities for Mexicans in the same way it means jobs and energy security for Americans. As such, the U.S. government should find ways to encourage those in the Mexican government who have expressed a willingness to reform PeMEX, the state-owned oil company that controls all domestic hydrocarbon production in Mexico. Allowing foreign companies to come in and operate fields in Mexico is not a diminution of a national asset. If anything, it bolsters that asset by applying the best technology along with the brightest geoscientists to produce more energy from Mexican territory. This means more tax revenue for the Mexican treasury and more high-paying jobs for Mexicans in the oil and gas industry. For its part, the Mexican government will need to meet foreign oil companies halfway, with assurances that their investments will not be nationalized.

Once these pillars are put into place, this strategy could be expanded to include Latin America and even West Africa. The United States has much to gain from such an expansion of energy-based trade. Our relationships with countries in Central and South America and West Africa have all but been abandoned in recent years. This is undoubtedly a dangerous development; left to their own devices, historical allies and trading partners in our own hemisphere will

look to secure their economic futures by increasing trade with other global powers, like China, or fall prey to the destabilizing “blame America” nationalism that has bankrupted a once-vibrant Venezuela.

In essence, an expanded energy trade among the nations of North and South America and West Africa is the pivot for hemispheric economic development, energy security and combating the spread of global terror organizations to our own borders. An integrated hemispheric energy production and distribution market from Argentina to Alberta and from Ecuador to Nigeria could also form the basis for a new oil pricing and regulatory system that could supplant OPEC and provide a rational market basis to energy pricing.

The reasons for erecting such a construct are compelling. The “cheap oil” of the last four decades has come with a steep price tag of a different sort, one that does not register at the pump. But when you take into account the embargoes, hostage takings, suicide bombings, coups, wars, and defense expenditures that are part and parcel of obtaining energy from the Middle East, it becomes a much safer bet to get energy from the Western hemisphere, where the costs are more straightforward.

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Yesterday's unconventionals... today's conventionals

America also can learn a thing or two from our neighbors to the north to help boost domestic production. Canadians have proven that, with patience, the brightest minds and a little bit of money can tackle the toughest energy challenges. Production from the Canadian oil sands began decades ago, but it only began to ramp up to levels that have made Canada an energy superpower once technology caught up. There were many lean years for those oil sands pioneers, particularly in the 1990s when world oil prices plunged to \$12 a barrel. But with world oil demand surging ahead of projected increases in conventional oil supply, Canada has become a model for using technology to turn yesterday's unconventional deposits into the commercially viable conventional crude of today and tomorrow.

The only real way to a secure energy future for the United States is through diversification—both of our sources of imported crude oil and the types of energy we use.

For the United States, the Canadian lesson should be instructive. Americans have grown to believe that dependence on unstable foreign oil suppliers is necessary because we have no more oil to produce domestically. This is misleading; while it may be true that easy-to-produce conventional fields in California, Texas and Oklahoma are in irreversible decline, we have yet to tap the trillions of

barrels of kerogen⁸ trapped in shale deposits in the Inner Mountain West (Colorado, Utah, Wyoming, Montana and the Dakotas).

As with the Canadian oil sands, oil companies and private citizens have known about the existence of oil trapped in shale in this country for decades. Commercial production of oil (kerogen) from shale has never advanced because it has always been cheaper to produce conventional domestic supplies and to import oil from abroad. But now, with conventional U.S. production in decline, with massive political opposition to the prospect of developing hydrocarbon basins like Alaska's Arctic National Wildlife Refuge (ANWR), and with seemingly perpetual geopolitical instability in major oil producing regions abroad, a reexamination of generating oil from domestic shale deposits has become a necessity.

Conservative projections of the oil recoverable from domestic shale deposits in the Green River formation of Colorado, Utah and Wyoming alone stand at 130 billion barrels.⁹ Similar estimates indicate that there are over 2 trillion barrels of oil trapped in shale in place in the continental U.S.¹⁰ By way of comparison, the total proven reserves of Saudi Arabia (which are only proven to the extent that the leadership of Saudi Aramco tells us they are there) are 263 billion barrels. And as technology makes the production of oil from shale deposits less expensive and worldwide demand for oil drives commodity prices higher, it is likely that commercial production of oil from shale could be profitable with per-barrel prices in the mid \$30s.

Another unconventional source of crude oil lies in America's vast coal reserves. The process of heating coal and extracting a synthetic crude oil from the process goes back

to pre-World War II Germany. In the early 1920s, Professor Franz Fischer and Dr. Hans Tropsch, researchers at the Kaiser Wilhelm Institute in Mülheim, discovered the method for converting coal into liquid petroleum products like diesel fuel. Simply put, coal is gasified or heated with steam to produce a synthetic gas (syngas) consisting of carbon dioxide and hydrogen that is then introduced to a reaction agent like cobalt or iron; this converts the gas into a synthetic crude oil which can then be cracked into various products like diesel fuel.¹¹ Subsequently, during the Second World War, Germany, which has almost no commercial oil deposits but boasts sizeable coal reserves, used the Fischer-Tropsch process to turn its coal into synthetic petroleum to fuel tanks and fighter planes as a way of circumventing an international embargo on oil supplies.

In this regard, the U.S. can take a page from the German playbook. Coal has long been a cornerstone of America's energy portfolio. It is as abundant in the United States as oil is in the Middle East. The U.S. Department of Energy estimates America's coal reserves at 275 billion tons—roughly one-quarter of the world total.¹² Moreover, the infrastructure to produce it is already in place and the methods for conveying it to market have been around for more than a century.

Until recently, however, the costs associated with coal-to-liquid (CTL) technology have conspired to keep a major coal energy initiative off the drawing board. But today's market conditions have changed all that. Most estimates agree that CTL processes can produce economically competitive products so long as the cost of crude oil remains above \$30 a barrel.¹³ Even factoring in the costs of designing and building suf-

ficient CTL plants (projected at over \$1 billion to produce 50,000 barrels of synthetic crude oil per day), at current market prices harnessing coal to meet our energy needs would begin to be economically profitable after just four years.

The lessons are clear. Turning our own domestic unconventional reserves into the conventional reserves of tomorrow shows us part of the path to greater energy independence and real energy security.

In his day, President Kennedy provided a unifying spark with his challenge of landing on the moon; the technology and results soon followed. Unfortunately, when it comes to energy, our elected officials have yet to take concrete action to animate such a strategy.

The drive for diversification

The foregoing examples help to illustrate the point that the only real way to a secure energy future for the United States is through diversification—both of our sources of imported crude oil and the types of energy we use. Increased imports from Canada alone will not solve our problems. Conservation alone will not provide enough energy to meet the rising demand of an ever-expanding population. By itself, production from ANWR, or domestic unconventional oil from shale deposits or synthetic crude oil from coal, will not give us greater energy security. But taken together, they can help us find our way out of the political mess

engendered by our appetite for imports from unstable producers.

Underpinning all of these efforts, however, must be a sense of national purpose and unity. In his day, President Kennedy provided that unifying spark with his challenge of landing on the moon; the technology and results soon followed. Unfortunately, when it comes to energy, our elected officials have yet to take concrete action to animate such a strategy.

If diversification of energy sources is the key to a real energy security strategy, our policy planners also should encourage the development and commercial production of the next generation of transportation fuels through a modern-day Manhattan Project for energy. Today, our economic growth and national security are so inexorably linked to stable supplies of relatively inexpensive energy that the growing geopolitical instability in major oil-producing regions should provide the catalyst for us to free ourselves from the political whims of hostile suppliers.

Reaching for the stars

Today the U.S. stands at an energy crossroads. We have the opportunity to deal OPEC a crippling, and possibly fatal, blow by implementing a real energy security strategy—one that will make us less susceptible to wild commodity pricing swings and allow us to change the rules of the oil dependency game, lessening our demand for oil imports and becoming selective as to our imported energy partners.

These goals are not unrealistic. Nor are they unachievable. It is long past time for us to start.



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