

# r evolution



New energy solutions are on the horizon,  
brought to you by the pioneers of energy –  
America's oil and natural gas industry.

The U.S. oil and natural gas industry, with well over a century of experience providing reliable energy supplies to American consumers, has a vital role to play in leading our nation on the path to a sustainable and secure energy future. An effective comprehensive energy plan should recognize that oil and natural gas will remain an important and significant source of energy for the nation for decades to come.

## **There is no more business as usual.**

There are no silver bullets or magic formulas to solve our nation's energy challenges overnight. We need balanced, workable policies to encourage the long-range investments required to deliver energy to meet tomorrow's needs.

Now more than ever our nation needs to move away from the piecemeal energy politics that have failed so badly over the past decades and get to work on an integrated set of solutions that include improving energy efficiency and developing all forms of domestic energy, including oil and natural gas, and maintaining the maximum effort to protect our environment.

The oil and natural gas industry will continue to invest in the research and development, the exploration and production and the infrastructure needed to meet today's – and tomorrow's – energy needs. It is time for a comprehensive energy policy shaped by reason, common sense and experience – an approach based on state-of-the-art technology and competition in the marketplace that will benefit, not disadvantage, American consumers and businesses.



Our nation cannot afford to neglect our energy challenges. Nor can we solve our financial problems by making our energy problems worse. We cannot strengthen the economy if we weaken our energy security.

## **The time to act is now – use America’s oil and gas resources to put more Americans to work.**

Energy is the backbone of the U.S. and global economy. The U.S. is the world’s largest energy consumer and one of the world’s largest producers of virtually all energy forms.

America’s oil and natural gas companies recognize that securing America’s energy future calls for a multi-faceted approach that will lead us to the fuels of tomorrow and we are working hard to develop those next-generation fuels.

But we have to begin with an adequate supply of oil and natural gas to take us to the new energy paradigm.

It is not an “either-or” proposition. Even with significant gains in renewable energy production, fossil fuels like oil and natural gas will continue to meet more than half of our nation’s energy needs for decades to come. In 2008, wind and solar energy combined provided just two percent of the U.S. electricity supply, according to federal government statistics.

Just to keep up with growth in global energy demand, producers

will need to invest more than \$1 trillion annually from 2009 to 2030, according to the International Energy Agency.

It is time for the United States, the world’s third largest oil producer and second largest natural gas producer, to get to work tapping the billions of barrels that had been placed off-limits by Congress for decades.

The U.S. oil and natural gas industry is a pillar of this nation’s economy. It employs nearly two million people directly and supports another four million jobs, many of which are high-paying and many are “green-collar” jobs in wind power, solar, geothermal and other renewable energy areas.

The oil and natural gas industry also provides billions of dollars from taxes and royalty payments that go to federal, state and local governments. And it supplies oil, natural gas, refined products and chemicals needed to keep America going and working. It is an industry that has the potential to provide trillions of dollars more to boost the nation’s economy and create tens of thousands of new jobs if granted greater access to federal lands.



The oil and natural gas industry is hard at work meeting today's energy needs and developing next-generation forms of energy and has invested more money on emerging energy technologies than the federal government and other industries combined. More than one-fifth of all the U.S. investments made in renewable energy from 2000 to 2008 have been made by the oil and natural gas industry.

## **The United States needs to invest in a wide range of energy sources, including oil and natural gas.**



We need the best, most versatile technologies to meet our future energy requirements, including new forms of energy that will change our energy landscape.

U.S. oil and natural gas companies are pioneers in developing alternatives and expanding America's use of virtually every form of energy – from geothermal to wind, from solar to biofuels, from hydrogen power to the lithium ion battery for next-generation cars.

We are a major provider of the green jobs that are in the news today. The oil and natural gas industry also provides the feedstock that enables alternative and low-carbon energy to thrive.

Natural gas is the raw material used to produce the basic materials for manufacturing alternative energy components, such as windmill pylons, solar arrays, and thin-film technology used in lightweight plastics that improve vehicle energy efficiency. It is used to produce solar films to generate emissions-free electricity. And it is the primary component of the fertilizer used to grow crops that become biofuels. In fact, the oil and gas industry plays a key role in the advancements in energy efficiency and alternative energy.

An October 2008 study undertaken for API by T<sup>2</sup> & Associates and the Center for Energy Economics (CEE) at the University of Texas found that the industry invested an estimated \$121.3 billion between 2000 and 2007 in emerging energy technologies, including renewables, frontier hydrocarbons such as shale and oil sands, and end-use technologies, such as fuel cells. This investment represents 65 percent of the total \$188 billion spent by all of industry and the federal government combined on these emerging energy technologies during this time period.

Energy efficiency is a core value and should play a crucial role in our nation's energy and climate change policy. It is the most promising, immediately available "new energy" source. America is vastly more energy-efficient today than a generation ago. The U.S. oil and natural gas industry is doing its part to continue that progress. In one year alone, the energy savings from improving refinery energy efficiency was equivalent to taking 528,000 cars off the road.

## **Energy efficiency is a daily practice of America's oil and natural gas industry.**

America's oil and natural gas companies are investing in efficiency improvements and alternatives and are advising companies in other industrial sectors how to use energy more efficiently.

Through such technologies as combined heat and power – using excess heat from refinery processes to produce additional energy – refiners are becoming more energy efficient, reducing both energy use and emissions. Between 1980 and 2005, oil and natural gas industry co-generation capacity grew over nine-fold, and in 2005 the industry produced more electricity than 17 medium-sized coal-fired power plants.



The development of our vast domestic oil and natural gas resources is vital to bolstering our nation's economic recovery and national security. It also will be an important bridge to our energy future.

## **Put America's resources to work for the American people.**



Increasing access to domestic resources will mean more jobs, more revenues to help cash-strapped local, state and federal governments and greater energy security. With our economy in trouble, we need to take action now.

Federal lands hold enough natural gas to meet the needs of 60 million households for 160 years (60 million households in the United States are fueled by natural gas). They also hold recoverable oil to produce gasoline for more than 65 million cars and fuel oil for 3.2 million households for 60 years.

Tapping the oil and natural gas resources that had been kept off-limits by Congress for decades could generate more than \$1.7 trillion in government revenue, create thousands of new jobs and enhance the nation's energy security.

According to an ICF International study, developing the offshore areas that had been subject to moratoria until Congress allowed the ban to expire in 2008, as well as the resources in Alaska's Arctic National Wildlife Refuge and a small portion of currently unavailable federal lands in the Rockies, would lift U.S. crude oil production by as much as 2 million barrels per day in 2030, offsetting nearly a fifth of the nation's imports and keeping more economic activity at home. Natural gas production could increase by 5.34 billion cubic feet per day, or the equivalent of 61 percent of the expected natural gas imports in 2030.

Our nation needs policies that encourage greater development of domestic oil and natural gas resources. Arbitrary limits only limit our energy future.

## **The majority of Americans support access to America's resources.**

The American people have spoken: exit polls in the 2008 presidential election showed that two-thirds of voters supported offshore drilling in areas where it was banned. And a poll conducted in February 2009 by Harris Interactive for the American Petroleum Institute found that 61 percent of Americans who voted in the 2008 presidential election still supported increased access to offshore oil and natural gas resources even after a sharp fall in fuel prices.

President Obama and senior Administration officials have said they recognize the importance of domestic oil and natural gas in our nation's energy future. Now our nation needs policies that encourage greater development of these resources.

Congress and the Administration should not place obstacles to the development of these resources. All areas of the Outer Continental Shelf off the lower 48 states should be available for leasing and development of oil and natural gas resources since these areas can be developed in an environmentally safe manner with minimal impact on coastal communities.

By putting arbitrary limits on how far offshore companies can explore for oil and natural gas, Congress would block development of many of our nation's most promising oil and natural gas prospects. For example, it is estimated that more than 90 percent of the oil and natural gas resources in the Pacific are within 50 miles of the shore where it is generally cheaper and easier to produce. Restrictions on the majority of areas in the Eastern Gulf of Mexico, where an estimated 3.7 billion barrels of oil and 21.5 trillion cubic feet of natural gas remain off limits, should also be lifted.



Production of oil and natural gas on federal lands is one of the largest sources of income to the federal government and has brought billions of dollars of revenue into federal and state treasuries.

## America's oil and natural gas industry supports millions of jobs.

The United States is the third largest oil producer in the world and the second largest natural gas producer, even though for nearly three decades 85 percent of the Outer Continental Shelf (OCS) was off limits to exploration and production.

Wisely producing domestic oil and natural gas can strengthen America's energy security (keeping U.S. dollars at home), create and preserve well-paying jobs, bolster the competitiveness of U.S. companies and bring the benefit of billions of dollars to government treasuries to help pay for vital programs.

- ▶ Oil and natural gas leasing and development on federal lands and in OCS waters have generated nearly \$95 billion from 1998 to 2008 through bonus bids, royalties and lease rental payments. The U.S. government collected and distributed nearly \$22 billion to state, American Indian and federal accounts from onshore and offshore oil and natural gas production in 2008 alone.

- ▶ In 2008, the industry paid an estimated total of \$10 billion in bonus bids to lease tracts for offshore exploration in the Gulf of Mexico and Alaska. In March 2008, the U.S. government received \$3.7 billion from company bids in a single Gulf of Mexico lease sale.
- ▶ Beginning in 2008, states that allow development in federal waters off their coasts receive additional revenues from oil and natural gas operations. The Gulf of Mexico Energy Security Act of 2006 authorizes sharing of 37.5 percent of revenue collected by the MMS, from certain Gulf leases issued – including bonus bids, rentals and production royalties – between Alabama, Louisiana, Mississippi and Texas. The first lease sale under this provision netted over \$24 million in immediate revenue for the four states.
- ▶ The U.S. oil and natural gas industry directly employs 1.8 million Americans, with another four million jobs indirectly tied to the industry. Exploration and production wages in 2006 were more than double the national average.



The oil and natural gas industry is at the forefront of breakthrough technology that will help deliver the energy that Americans need today and tomorrow, while also reducing the environmental impact.

## Tapping into technology and America's energy future.



Keeping pace with growing energy demand in an environmentally-responsible way will require innovation, ingenuity and significant investments as much of the oil and natural gas resources are in areas that present significant geological challenges, in smaller pockets and in deeper waters far out at sea.

Discoveries miles beneath the Gulf of Mexico of billions of barrels of new oil and natural gas resources have been great news for America's energy future. Tapping such "ultra deepwater" reservoirs was technically impossible just a few years ago. It's testament to the billions of dollars oil and natural gas companies invest each year, to the advanced technology and the know-how and ingenuity of the people of the industry that make such discoveries possible.

Advanced methods such as 3D seismic surveys, 4D time-lapse visualization, remote sensing, and other exploration technology have revolutionized the exploration process for oil and natural gas, improving the industry's ability to locate potential oil and natural gas reserves with greater accuracy and reducing the environmental footprint.

Directional and horizontal drilling techniques enable producers to reach reservoirs that are located miles away from the drilling rig, a capability that is particularly useful for offshore development. Horizontal drilling may also allow a producer to reach more of the reservoir so that more resources can be recovered from a single well.

Advanced technology has also opened up untraditional oil and natural gas resources such as tight gas, heavy oil and oil sands, previously considered inaccessible or too costly to recover.

More energy-efficient drilling and production methods cut emissions of air pollutants and greenhouse gases, practically eliminate spills from offshore platforms, and translate into enhanced worker safety and better protection of groundwater resources.

America's oil and natural gas industry stands ready to make the multi-billion dollar investments needed to tap the huge resources closed to development – if federal policies would allow it.

Tremendous capital investments will be needed to meet the nation's growing energy needs. Imposing additional taxes on the oil and natural gas industry, especially at a time of low energy prices, is contrary to the goal of providing stable and cost-effective energy supplies to the American consumer.

## The energy Americans consume today comes from industry investments made years or even decades ago.

The oil and natural gas industry operates in a high-risk, high-cost environment that requires massive capital investments and long lead times. Planning and investment cannot be turned on and off like a spigot, without potentially incurring huge costs and delaying urgently needed projects.

Our industry is not immune to the economic downturn. Oil prices have plummeted since July 2008, reflecting a dramatic drop in global oil demand, the first annual demand decline in nearly three decades. Some companies have had to reduce their investments; others have not. Time will tell the full impact of the crisis but ours is a cyclical industry.

We have gotten through economic crises before and we will get through this one while also providing American consumers with the fuel they need to live, work and play.

Since the year 2000, the U.S. oil and natural gas industry invested more than \$1.2 trillion in capital projects to meet growing demand for oil and natural gas. In addition, investments either planned or currently under serious consideration would boost domestic refining capacity by 800,000 barrels per day by 2011, the equivalent of building four new, medium-sized refineries. However, with the worldwide economic downturn, along with much lower oil and gas prices and tight credit markets, some producers have cut their 2009 capital budget plans.

Because the industry must plan and operate under these long lead times, it must also minimize risk and manage cash flow over the course of its long-term investments, and tax policies must not ignore these sensitivities. Imposing additional taxes on the U.S. oil and natural gas industry is contrary to the goal of providing stable and cost-effective supplies of energy for American consumers and discourages the tremendous capital investments needed to meet the nation's growing energy needs.



We all have a role to play in addressing the risk of global climate change, and that includes America's oil and natural gas companies. The industry has invested \$175 billion since 1990 toward improving the environmental performance of its products, facilities and operations – \$582 for every man, woman and child in the United States.

## **Global climate policy has to be approached from the proper perspective.**

Global climate change is extraordinarily complex and challenging because the main source of greenhouse gas emissions is the energy that heats our homes, powers our factories and offices, and gets Americans to school and work.

It is crucial that our nation have a climate policy framework that not only leads us in the right direction, but enables us to move forward with workable policies and practical, equitable solutions.

Policymakers need to analyze carefully the impact of any climate policy on ordinary Americans, especially at this time of economic uncertainty.



To be workable, climate change policy should have some essential components, as follows:

- ▶ Be environmentally effective;
- ▶ Be transparent and understandable to consumers;
- ▶ Identify and prioritize the most cost-efficient ways to reduce emissions;
- ▶ Avoid government selection of market “winners” and “losers;”
- ▶ Provide access to all domestic energy sources, particularly natural gas, which has the lowest emissions per Btu;
- ▶ Keep U.S. energy production competitive in the global marketplace to avoid “outsourcing” business jobs and emissions overseas; and
- ▶ Avoid severe damage to the U.S. economy.

The U.S. oil and natural gas industry is spending billions of dollars developing new advanced energy technologies to reduce greenhouse gas emissions. Between 2000 and 2008, the industry invested more than \$58 billion in new low and zero emissions technologies. This represents 44 percent of the \$133 billion spent by all U.S. industries and the government combined.

## **We're working hard to reduce greenhouse gas emissions.**

These large investments are critical to provide the low-carbon energy we will need years from now. Oil and natural gas companies are at the forefront of:

- ▶ Developing advanced energy technologies and new uses of clean-burning natural gas;
- ▶ Researching, developing and marketing energy alternatives, including solar, geothermal, biofuels, fuel cells, hydrogen power and wind energy;
- ▶ Developing “carbon capture and storage” technology, or CCS, to reduce carbon dioxide (CO<sub>2</sub>) emissions by storing them underground. In certain cases, injecting these gases for storage can also increase oil recovery. An oil company operates the largest CCS facility in North America.



In order for CCS to advance much more needs to be done. A legal and regulatory framework for long-term CO<sub>2</sub> storage is still lacking. The use of CCS would facilitate the continued use of our nation's vast plentiful coal and frontier hydrocarbon resources in an environmentally-friendly way.

To find out more about how the U.S. oil and natural gas industry leads the way in the energy evolution, contact us today.



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