



the state of  
**American  
Energy**



2011

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### About the American Petroleum Institute (API):

API represents more than 450 oil and natural gas companies, leaders of a technology-driven industry that supplies most of America's energy, supports more than 9.2 million U.S. jobs and 7.5 percent of the U.S. economy, and, since 2000, has invested nearly \$2 trillion in U.S. capital projects to advance all forms of energy, including alternatives, while reducing the industry's environmental footprint.





## Message from the President and CEO

*The State of American Energy* represents the oil and natural gas industry's perspectives on the vital issues surrounding energy and environmental policy at a critical time to our nation's economy.

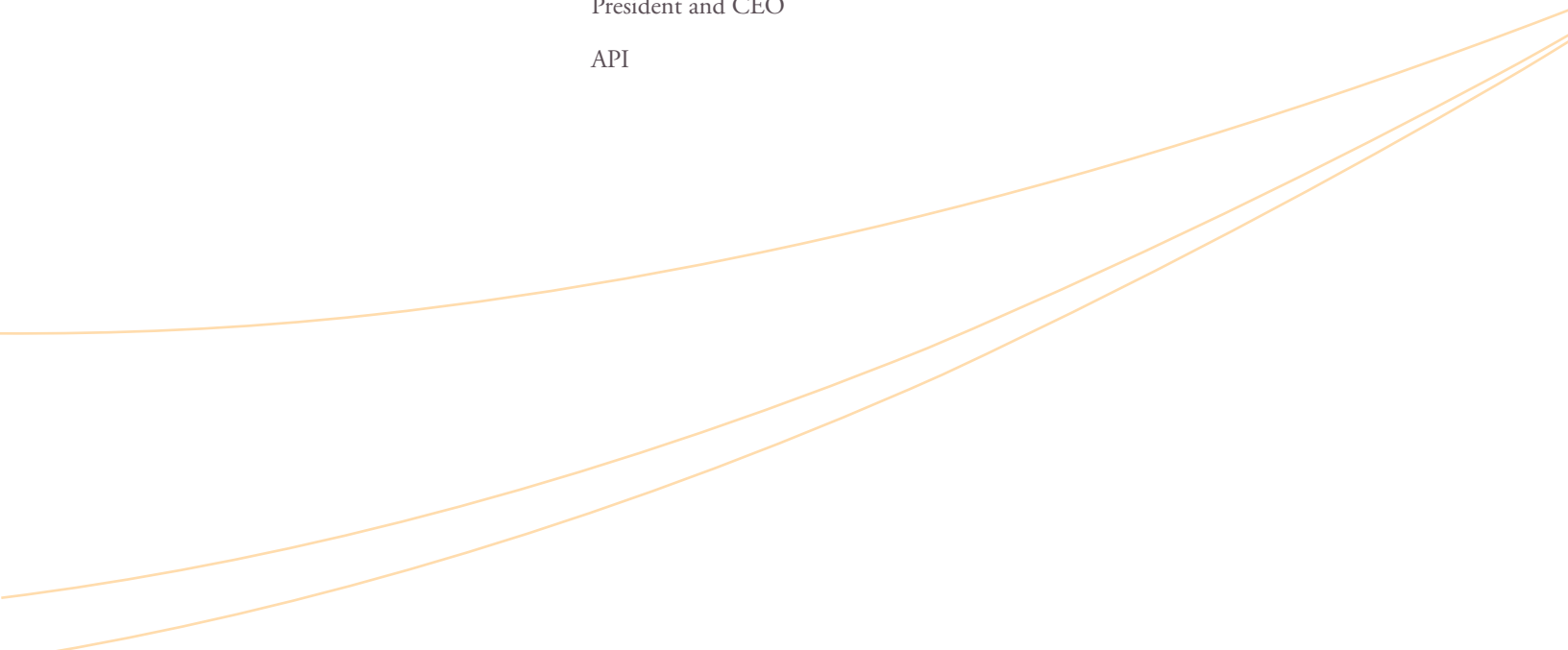
Through this report, we examine ways in which the oil and natural gas industry is contributing to U.S. economic growth, job creation and energy security—and areas where we will contribute further. We also provide recommendations on how industry and policymakers can work together to address our energy and economic challenges through a combination of industry commitments and investments, as well as sound legislative and regulatory policies.

API and our member companies remain committed to working with all stakeholders in pursuing and implementing a thoughtful energy agenda. We look forward to a productive and successful year.

Sincerely,

A handwritten signature in black ink that reads "Jack Gerard". The signature is fluid and cursive, with a long horizontal stroke at the end.

Jack Gerard  
President and CEO  
API





# The State of American Energy

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The oil and natural gas industry is vital to the nation's economy, supporting more than \$1 trillion in annual contributions to the U.S. economy and 9.2 million American jobs, and powering economic growth by delivering affordable, reliable energy to American businesses and families alike. Our industry can play an even greater role in economic growth and job creation through the careful development of more of America's oil and natural gas resources. We are committed to working with policymakers to support decisions that encourage the safe and reliable production of domestic energy resources.

### 16 Meeting the Challenges

Our nation needs energy policies that protect the environment and provide for growing the U.S. economy, creating jobs and enhancing energy security. Oil and natural gas companies are at the forefront of developing advanced energy technologies, increasing energy efficiency and diversifying our energy resources—including alternatives and renewables. We are committed to effective partnerships with key stakeholders to establish sound energy policies and a sustainable future.

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## Overview

# Our Role in Economic Growth, Job Creation and Providing for the Future

The new year can herald a new focus on energy policy—and our energy future. The oil and natural gas industry is committed to providing the safe, reliable and affordable energy the United States needs to grow the economy, create jobs and enhance our energy security.

Sensible energy policy is a goal both political parties support, and we remain committed to working with all policymakers to identify solutions that will advance our country's economic interests and sustain our way of life.

America's oil and natural gas companies will continue to play a crucial role in the U.S. economy through tremendous contributions in three key areas: ▶

## Jake B., 5th Grader

One of the 25 million students who ride a diesel-powered bus to school every day.

Source: *Did You Know?*, American School Bus Council, November 2010.



## growing the economy

- ▶ The industry supports more than **\$1 trillion** in annual contributions to the U.S. economy, or **7.5 percent of Gross Domestic Product<sup>1</sup> (GDP)**;
- ▶ The industry has invested **\$1.66 trillion<sup>2</sup>** in U.S. capital projects in the last decade;
- ▶ The industry paid **\$95.6 billion<sup>3</sup>** in 2008 income taxes alone;
- ▶ The industry paid more than **\$178 billion<sup>4</sup>** to the U.S. government in rent, royalty and bonus payments from 1982 through 2009; and
- ▶ Increased access to U.S. oil and natural gas resources currently off-limits could generate an additional **\$1.7 trillion<sup>5</sup>** in government revenue over the life of the resources.

## creating jobs

- ▶ The oil and natural gas industry supports more than **9.2 million U.S. jobs<sup>6</sup>**;
- ▶ Developing U.S. oil and natural gas resources currently off-limits in the Outer Continental Shelf (OCS), the Arctic National Wildlife Refuge (ANWR) and the Rockies could create **160,000 new jobs<sup>7</sup>** by 2030;
- ▶ Expanding Marcellus Shale natural gas development could add **280,000 jobs<sup>8</sup>** over the next decade;
- ▶ Greater Canadian oil sands production could create more than **340,000 new jobs<sup>9</sup>** in the United States alone; and
- ▶ Many other opportunities exist to create jobs through increased energy production in the United States.

## providing for the future

- ▶ The United States will require more energy of all types, including oil and natural gas, to meet future energy demands—a challenge and opportunity that will be met through continued industry investments in technology and innovation;
- ▶ The industry has invested **\$194 billion<sup>10</sup>** since 1990 toward improving the environmental performance of its products, facilities and operations; and
- ▶ The industry has invested **\$58.4 billion<sup>11</sup>** in low- and zero-carbon emissions technologies from 2000 to 2008—more than either the federal government or all other U.S.-based private industries combined.

Our nation's economic and energy security depends on our industry's ability to provide the energy we need. We encourage policymakers to recognize the significant role of oil and natural gas in meeting our energy needs and the industry's role as an engine of economic growth and job creation for our country. We call on policymakers to encourage domestic energy growth, which, in turn, will result in increased government revenues—and avoid punitive taxes and overreaching regulations that could harm economic growth and energy security.

On the following pages, we examine areas where the oil and natural gas industry is part of the solution to our energy and economic challenges, and provide recommendations on how we can meet our energy goals through a combination of industry commitments, investments and effective policies.

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“Our industry contributes more than \$1 trillion to the U.S. economy and provides most of the energy that heats our homes, fuels factories and offices, and gets people to home and work. Policy decisions seeking to burden this critical industry with punitive taxes and overly restrictive rules do nothing to boost the economy or enhance energy security. Instead, they cost jobs, damage the economy and compromise our national security.”

— Jack Gerard, October 29, 2010



**Bill H., *Farmer***

One of 2.2 million U.S. farmers who depend on oil and natural gas for fertilizers and fuel.

Source: 2007 *Census of Agriculture*, United States Department of Agriculture, issued February 2009.





## Energy and the Economy

# Energy and the Economy

Given worldwide economic and population growth, U.S. and global energy demand are rising significantly. This is encouraging news, since growing demand leads to additional economic growth and a better quality of life for billions of people around the world.

An International Energy Agency (IEA) report on energy and poverty demonstrates this point and stresses just how critical access to modern energy services is to economic growth and social development. The report says that energy access “is essential for the provision of clean water, sanitation and healthcare—and provides great benefits to development through the provision of reliable and efficient lighting, heating, cooking, mechanical power, transport and telecommunication services.”

Countries around the world are looking for affordable and reliable energy to power their economies well into the future. The International Energy Outlook (IEO) 2010 projects that world energy consumption will grow nearly 50 percent between 2007 and 2035.

The United States will need energy from all commercial energy sources, including fossil fuels and renewable and alternative energy supplies, to meet our increased demand. We will also need a greater commitment to increased energy efficiency and conservation. Based on government projections, however, oil and natural gas will continue to provide more than half of total U.S. and global energy needs in 2035—and for the foreseeable future.

Thankfully, America has vast domestic energy resources—enough oil and natural gas on federal lands alone to power 65 million cars for 60 years and heat 60 million households for 160 years.<sup>12</sup>

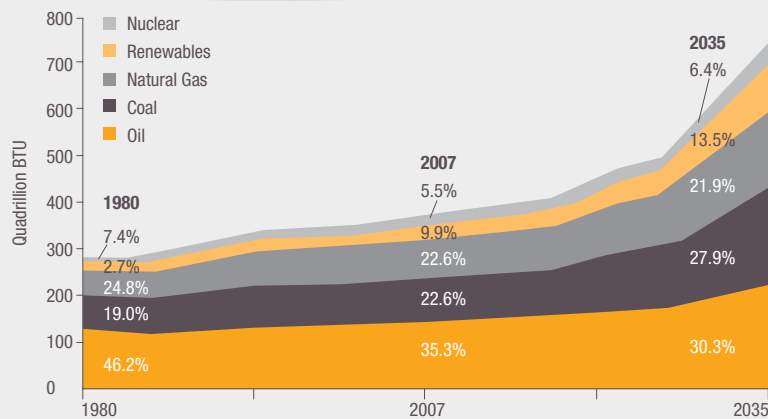
Allowing access to oil and natural gas resources currently off-limits would increase U.S. crude oil production by as much as two million barrels per day in 2030, offsetting nearly a fifth of the nation’s imports.<sup>13</sup>

Providing these resources safely to consumers is a core value of our industry, and each day we deliver millions of gallons of oil and billions of cubic feet of natural gas to fuel the American economy and way of life. Oil and natural gas exploration and production have been conducted in the United States for more than 150 years; the industry has a long history of demonstrated safety performance and technological advancement.

New technologies are continuously being developed that will allow us to efficiently and safely recover more oil and natural gas, making our energy resources go farther and last longer. Developing these resources is essential to economic growth and generating revenue for federal, state and local governments.

## Future Global Energy Demand

(The world will require 49 percent more energy in 2035 than in 2007.)



Source: EIA International Energy Outlook 2010.

Allowing access to oil and natural gas resources currently off-limits could generate an additional \$1.7 trillion in government revenue over the life of the resources.

It is clear that the economic growth opportunities associated with oil and natural gas development are significant; yet the opportunity cost of failing to develop this energy is not always well understood.

Too often policymakers have sought to raise revenue by taxing the oil and natural gas industry, but a new study from Wood Mackenzie shows the danger in that approach.

Wood Mackenzie compared the impacts of two scenarios: the first would raise government revenues from fees and payments associated with increased access to areas that are currently off-limits to development, and the second would raise government revenues from an additional \$5 billion per year in taxes on the industry. The results show that not all revenue is created equal.

Comparing the total government revenue impact from the two scenarios (access versus taxes, 2011 to 2025) shows increased access generates an estimated \$149 billion in additional government revenue. Under the higher taxation scenario, net revenues are estimated to decrease by \$128 billion. The negative economic consequences of higher taxes will, in the long run, more than offset any short-term tax revenue gains.

More importantly, as millions of Americans struggle to find jobs, total additional direct, indirect and induced jobs in 2025 could exceed 400,000 in the increased access scenario. The higher tax scenario would result in a loss of jobs, estimated at almost 170,000 in the peak job loss year of 2014.

## developing america's energy resources

Given the critical role of oil and natural gas in driving economic growth here at home and around the world, we need policies that encourage new domestic oil and natural gas production. While it is true that our nation will require energy from abroad to meet growing demand in the future, domestic oil and natural gas is vital to creating jobs, generating government revenue and providing reliable supplies to American consumers.

The oil and natural gas industry's current impact on the U.S. economy is significant, supporting more than \$1 trillion in contributions to the U.S. economy annually, or 7.5 percent of GDP, and supporting more than 9.2 million U.S. jobs.

Economic contributions from the oil and natural gas industry include:

- In 2008, the U.S. Interior Department (DOI) distributed a record \$23.4

billion to the federal government, states and Native American tribes from on- and offshore energy production. Nearly \$22 billion came from oil and natural gas production;<sup>14</sup>

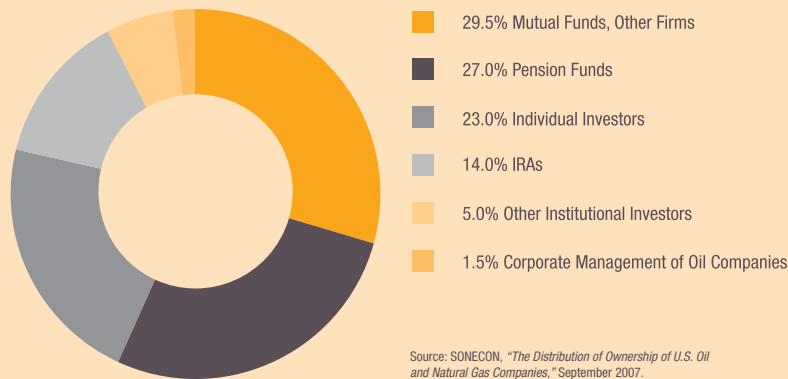
- Oil and natural gas companies paid \$95.6 billion in 2008 income taxes and \$1 trillion<sup>15</sup> in total income taxes from 1980 through 2008;
- Oil and natural gas companies paid more than \$178 billion<sup>16</sup> to the government in rent, royalty and bonus payments from 1982 through 2009;
- The industry paid \$30 billion<sup>17</sup> in land use fees to federal, state and local governments in 2008 and 2009, over \$5 billion<sup>18</sup> more than the 2009 budgeted discretionary spending for the Department of Energy (DOE);
- The oil and natural gas industry provides the U.S. Treasury, on average, with well over \$20 million<sup>19</sup> each day; and
- The industry has invested nearly \$2 trillion in U.S. capital projects in the last decade.

The Economic Impacts of the Oil and Natural Gas Industry on the U.S. Economy in 2007 by Industry

Industry	Employment	Labor Income (\$ millions)	Value Added (\$ millions)
Direct Impact of the Oil and Natural Gas Industry	2,123,291	199,344	456,971
Indirect and Induced Impacts on Other Industries	7,114,090	358,916	580,089
Services	3,399,474	149,462	181,720
Wholesale and Retail Trade	1,174,762	49,711	80,915
Finance, Insurance, Real Estate, Rental and Leasing	828,904	47,487	73,322
Manufacturing	680,834	49,936	73,322
Transportation and Warehousing	276,492	13,892	18,746
Construction	220,923	11,185	13,722
Information	165,859	15,206	29,324
Agriculture	122,542	2,193	5,197
Utilities	26,272	4,309	14,652
Mining	10,898	1,037	2,068
Other	207,130	14,499	16,122
Total Impact	9,237,381	558,260	1,037,060
As a % of U.S. Total	5.2%	6.3%	7.5%

Source: PricewaterhouseCoopers, "The Economic Impacts of the Oil and Natural Gas Industry on the U.S. Economy," September 2009.

## Who Owns "Big Oil?" (Holdings of Oil Stocks, 2007)



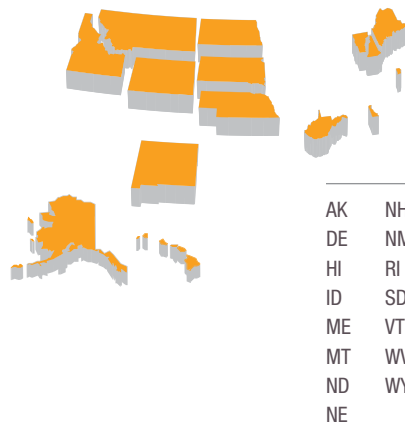
These taxes, royalties, rental payments and other revenues fund community needs, including roads, schools and parks. Furthermore, millions of Americans benefit from the strong economic performance of American oil and natural gas companies, from ownership in the companies through pension plans, mutual funds, IRAs and 401k plans.

Thousands of U.S. businesses large and small depend on oil and natural gas operations. The industry supports businesses well outside the Gulf region—vendors that provide services to Gulf operations are located as far away as Pennsylvania and Illinois.

As one of the largest employers in the country, a strong American oil and natural gas industry is a key driver of job creation throughout the U.S. economy.

To put this in perspective:

The number of people directly employed by the oil and natural gas industry—**2.1 million**—is larger than the **populations of 15 states.**<sup>20</sup> And a Gallup poll from last year found that energy-producing states are among the best in job creation.<sup>21</sup>



U.S. Census Bureau, "Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2009 (NST-EST2009-01)."

For example, North Dakota has been breaking oil production records and sits atop Gallup's Job Creation Index. The Index also shows that "the energy-producing states of Louisiana, Oklahoma and Texas are in the top 10 state job markets for the first half of 2010, as they were in 2008 and 2009." Alaska, another state where energy development is crucial, made the list in addition to Pennsylvania and West Virginia—two states that saw 57,000 new jobs last year from Marcellus Shale development.<sup>22</sup>

Developing domestic oil and natural gas resources will help meet growing demand, create jobs, provide revenue to federal and state governments, and enhance the nation's energy security. Our industry remains committed to reliably providing the energy our nation needs in a safe, environmentally sound manner.

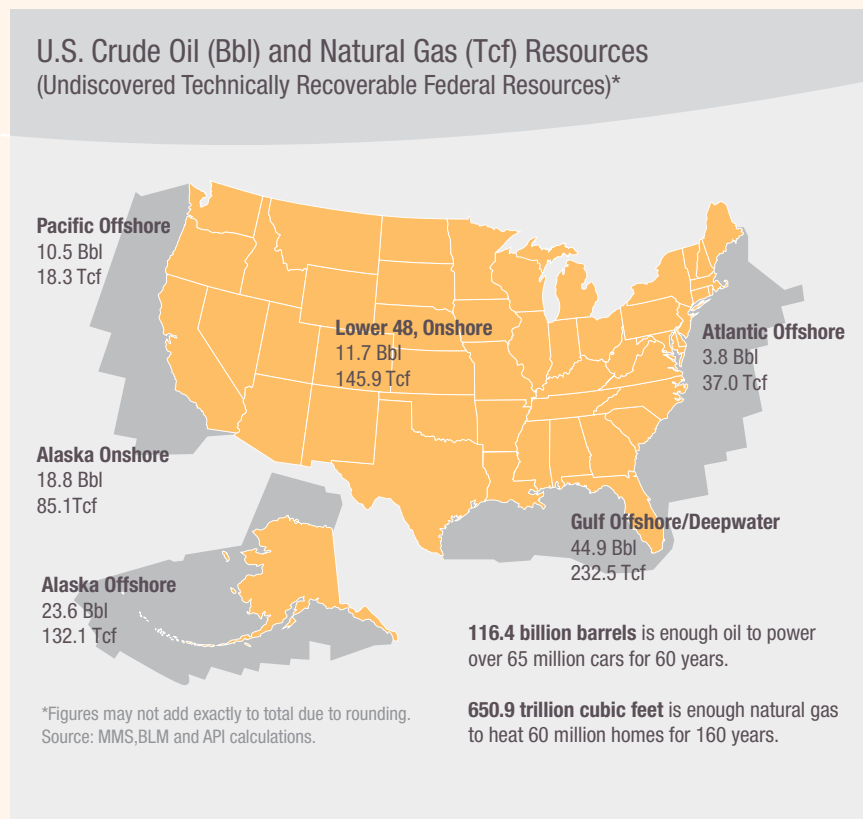
With approximately 30 percent of the nation's total domestic oil production and 13 percent of domestic natural gas production coming from the Gulf of Mexico,<sup>23</sup> offshore resources are essential to our nation's energy portfolio. Additionally, deepwater areas of the Gulf will continue to play a major role in our nation's energy future.

Looking ahead:

- The eastern Gulf of Mexico alone could hold **3.8 billion barrels** of oil and **21.5 trillion cubic feet** of natural gas.<sup>24</sup>
- Opening the Atlantic coastline could make available another **3.8 billion barrels** of oil and **37 trillion cubic feet** of natural gas.<sup>25</sup>
- The U.S. Geological Survey (USGS) estimates that the National Petroleum Reserve in Alaska and adjacent state waters hold **896 million barrels** of undiscovered oil and about **53 trillion cubic feet** of undiscovered natural gas.
- **10.5 billion barrels** of oil are estimated to exist along the Pacific coast.<sup>26</sup>

And these estimates are most likely conservative given the industry's proven ability to advance technologies that over time enable us to produce much more than originally projected.

Similar to offshore development, production of resources from federal lands onshore is essential to providing the oil and natural gas necessary to meet our growing energy demand. North Dakota's Bakken Shale deposit is one of the fastest-growing oil-producing areas in the United States with **80 million barrels** produced in 2009.<sup>27</sup> If the government opened up access to non-park federal land in both Alaska and a portion of the Rocky Mountain States, the United States could produce an additional **1.125 million barrels** of oil and **2.4 billion cubic feet** of natural gas per day in 2030.<sup>28</sup>



“With oil use projected to grow in the coming decades, America definitely needs its offshore resources on the Outer Continental Shelf...the government needs to redouble its efforts to expand oil and gas development as well as alternative energy sources if this country is to ensure that it has adequate energy supplies. This would stimulate the economy, provide well-paying jobs and reduce dependence on imported fuel.”

— J. Allen Wampler, Former Assistant Secretary for Fossil Fuels,  
U.S. Department of Energy, May 8, 2010

## U.S. Shale Plays



Source: EIA based on data from various published studies.

“We’ve got, I think, broad agreement that we’ve got terrific natural gas resources in this country. Are we doing everything we can to develop those?”

— President Barack Obama, November 4, 2010

According to an MIT study, clean-burning natural gas is predicted to double its share of the energy market, from 20 percent to 40 percent, by 2040.<sup>29</sup> In recent years, in fact, America has been dubbed the Saudi Arabia of natural gas.

This same MIT study says the United States has a significant natural gas resource base (including shale gas), thought to exceed **2,000 trillion cubic feet**—enough to meet **100 percent** of current domestic demand for nearly a century. Developing this domestic natural gas will mean billions of dollars in government revenue and reductions in greenhouse gas emissions.

According to a Deutsche Bank Climate Change Advisors report,<sup>30</sup> natural gas used for electricity production has significant cost advantages for

consumers versus alternatives, and will produce up to **60 percent** fewer greenhouse gas emissions than a conventional coal-fired plant.

New combinations and refinements in technologies for natural gas discovery and development have created an opportunity to access this domestic, clean-burning energy source for our nation—and further enhance our economic and energy security.



**Tanhee G., Chemist**  
One of 9.2 million Americans whose job is supported by the oil and natural gas industry.

Source: *The Economic Impacts of the Oil and Natural Gas Industry on the U.S. Economy*, PricewaterhouseCoopers LLP, September 2009.

The Marcellus Shale Assessment Unit. The area assessed is generally to the east of the DSS AU. The MAU includes the Millboro Shale in Southwestern Virginia and adjacent Virginia.



Sources: Marcellus Shale as data from de Wit and others, 1993.

**Marcellus Shale natural gas production alone could add \$6 billion in new tax revenues to local, state and federal governments over the next decade.<sup>31</sup>**

Hydraulic fracturing—a 60-year-old technology for extracting oil and natural gas from deep underground shale formations—is enabling access to massive new supplies. This process, combined with horizontal drilling, has led to new finds and improved our ability to access more of our natural gas resources that will help generate electricity, heat homes and power vehicles for generations to come.

Our industry has a long history of working with federal, state and local regulators to address environmental protection. API has developed standards and best practice documents for natural gas drilling to ensure safe and environmentally responsible operations—and we are continuously making improvements. These robust documents cover all aspects of operations, including hydraulic fracturing, well materials and construction, safe disposition of fluids, water testing, and chemical recordkeeping and reporting.

In addition to natural gas from shale formations, the DOE conservatively estimates that oil shale reserves in

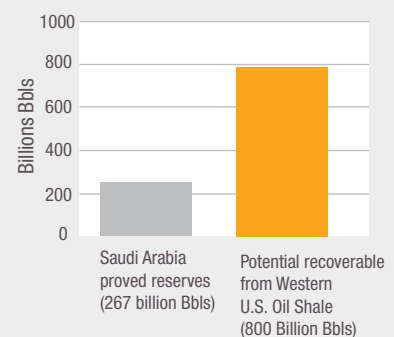
Colorado, Utah and Wyoming contain **800 billion barrels<sup>32</sup>** of recoverable oil—more than three times the proven reserves of Saudi Arabia.

**Increased oil shale production could add as many as 100,000 new jobs from a 2 million-barrel-per-day oil shale industry.<sup>33</sup> The DOE estimates that, in addition to tax revenues, federal and state governments could receive royalties and lease payments topping \$2 billion a year.**

These domestic on- and offshore oil and natural gas resources are vital to our nation, but they are not the only nearby resources that can provide the energy and jobs our nation needs. With vast reserves second only to Saudi Arabia, Canada’s abundant and reliable oil sands are crucial to improving U.S. energy security and meeting energy demand.

Canada is our nation’s top supplier of imported oil and offers a close, reliable, safe and readily available supply of secure energy that can be transported into the United States via pipeline. There are economic and national security benefits to importing oil from a friendly, nearby neighbor like Canada.

### Oil Reserves of Saudi Arabia vs. Western U.S. Oil Shale



According to a Canadian Energy Research Institute (CERI) study, greater production of Canada's oil sands is expected to stimulate economic activity in both countries, creating more than **340,000 new jobs** in the United States alone. As production and investment rise, the demand for U.S. goods and services also increases—adding an estimated **\$34 billion** to the U.S. GDP in 2015 and **\$42.2 billion** in 2025.<sup>34</sup>

**By 2025, Canadian oil sands production is expected to rise from about 1.4 million barrels per day to about 3.5 million barrels per day—and the economic impact of this development is a boon for the U.S. economy.**<sup>35</sup>

From an environmental impacts perspective, a Cambridge Energy Research Associates (CERA) study finds that life cycle greenhouse gas emissions (GHG) from oil sands are not much different than other heavy crudes already refined in the United States.<sup>36</sup> Since 1990, GHG emissions associated with every barrel of oil sands crude produced have been reduced by 39 percent,<sup>37</sup> according to the Canadian government. Furthermore, transporting oil sands crudes to the United States via pipeline generates fewer emissions than shipping oil from overseas by tanker.

## creating jobs

Increased domestic oil and natural gas development means billions of dollars in revenues and U.S. economic growth—and growing the U.S. economy leads to the creation of American jobs.

In addition to the **9.2 million U.S. jobs** supported by our industry, allowing access to oil and natural gas resources currently off-limits could create an additional **160,000 jobs** by 2030.

This doesn't take into account the hundreds of thousands of jobs that could be created from increased development of natural gas from shale formations or oil sands:

**Marcellus Shale natural gas production could create 280,000 new American jobs over the next decade. And according to CERI, greater production of Canada's oil sands could create more than 340,000 new jobs in the United States.**

Affordable and reliable domestic energy is critical for our nation and supports U.S. business activity. The industry employs **2.1 million**

**U.S. workers** exploring, producing, refining, transporting and marketing oil and natural gas—and supports an additional **7.1 million jobs**<sup>38</sup> through the purchases of other goods and services that support the industry's operations. Equipment suppliers, construction companies, management specialists and food service businesses are all tied to the industry. These businesses, in turn, purchase other goods and services that support other jobs throughout the nation.

Finally, industry jobs are highly desirable: in 2008 and 2009, oil and natural gas industry salaries in the exploration and production sectors were more than double the national average for all U.S. jobs.<sup>39</sup>

The oil and natural gas industry can enhance America's energy security and help solve our economic problems by increasing production of our nation's vast oil and natural gas resources. More access to oil and natural gas will mean more energy for America, more well-paying jobs, and trillions of dollars of much-needed revenue that will help federal, state and local governments pay for critical services.







**Meeting the Challenges**

# Meeting the Challenges

API and our member companies are committed to working with policy-makers to pursue a thoughtful, commonsense energy agenda—one that promotes U.S. economic growth, job creation and safe, reliable, affordable energy for the future.

**We will do our part, and we are hopeful that our nation's leaders will work together with all key stakeholders to develop solutions to our economic, energy and environmental challenges.**

## what the industry is doing

The U.S. oil and natural gas industry has always had a strong safety performance record, and we continue to improve upon it.

Dating back to 1924, API established a process for the development of standards and best practices focusing on the safety of our workers.

Following the Gulf oil spill, our industry demonstrated its commitment to ensuring the safety of our operations and committed an unprecedented level of response to help stop the leak, clean up the oil and restore communities. We have taken considerable steps to significantly improve safety and to advance spill response capabilities. We have created industry-wide task forces to identify and learn from any gaps in operations or practices, and recommendations

from these task forces have already helped improve the industry's safety performance.

The industry follows and constantly improves best practices for safe operations, including training, operational procedures, equipment improvements, industry standards and technology. We will continue working with the Department of the Interior and Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) in their efforts to move forward with energy development in the Gulf.

In addition to offshore safety, API and U.S. refiners have continued our work on raising refining safety through new and improved industry standards, increased training and drills, and improved audit programs. We've also reviewed and clarified procedures for refinery start-ups, operations and maintenance.

Further, we have created a series of refinery personnel certification exams to improve operations, repair and maintenance; reduce the potential for inspection delays from regulatory requirements; and provide a continued high level of safety through the use of inspectors specialized in process equipment. The program promotes continuously improved performance and establishes a uniform national program that assists state and local governments in regulations.

We have redoubled our commitment to safety and response practices. We owe it to our employees and to the nation that has placed its trust in us to responsibly develop oil and natural gas.

Worker safety is a core value in the oil and natural gas industry—and process safety management is essential to the protection of employees, contractors and the communities in which our companies operate.

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**“The conclusion that this is an unregulated industry is not correct. It is a very highly regulated industry. That doesn't mean there isn't enough room for improvement.”**

– Interior Secretary Ken Salazar on oil and natural gas regulation,  
May 18, 2010

In addition, API's WorkSafe program ensures worker and contractor training with regard to industry safety standards. This program offers a standardized examination covering the latest industry safety practices and training on key safety issues found at job sites.

Through API's efforts and initiatives, we are investing the necessary resources to train our workforce on safe equipment operation as well as proper inspection and maintenance procedures. In conjunction with key stakeholders and other experts, we have developed and maintained more than 500 safe operating and equipment standards and work practices. The oil and natural gas industry is working with stakeholders and government at all levels to continuously improve process and worker safety.

API and our members have also partnered with labor unions to create the Oil and Natural Gas Industry Labor-Management Committee, which works to promote industry job retention and growth.

In the communities where we operate and live, the protection of our environment—and of America's energy future—remains paramount when exploring for natural resources.

We need to enhance development of **advanced energy technologies** to remain on the cutting edge of exploring for, finding and producing energy resources. As an industry and as a nation, we need a greater commitment to increased **energy efficiency**. And we need to **diversify our energy resources**, drawing upon the full range of energy sources, including alternatives and renewables.

### **Bobby S., Geologist**

One of 9.2 million Americans whose job is supported by the oil and natural gas industry.

Source: *The Economic Impacts of the Oil and Natural Gas Industry on the U.S. Economy*, PricewaterhouseCoopers LLP, September 2009.

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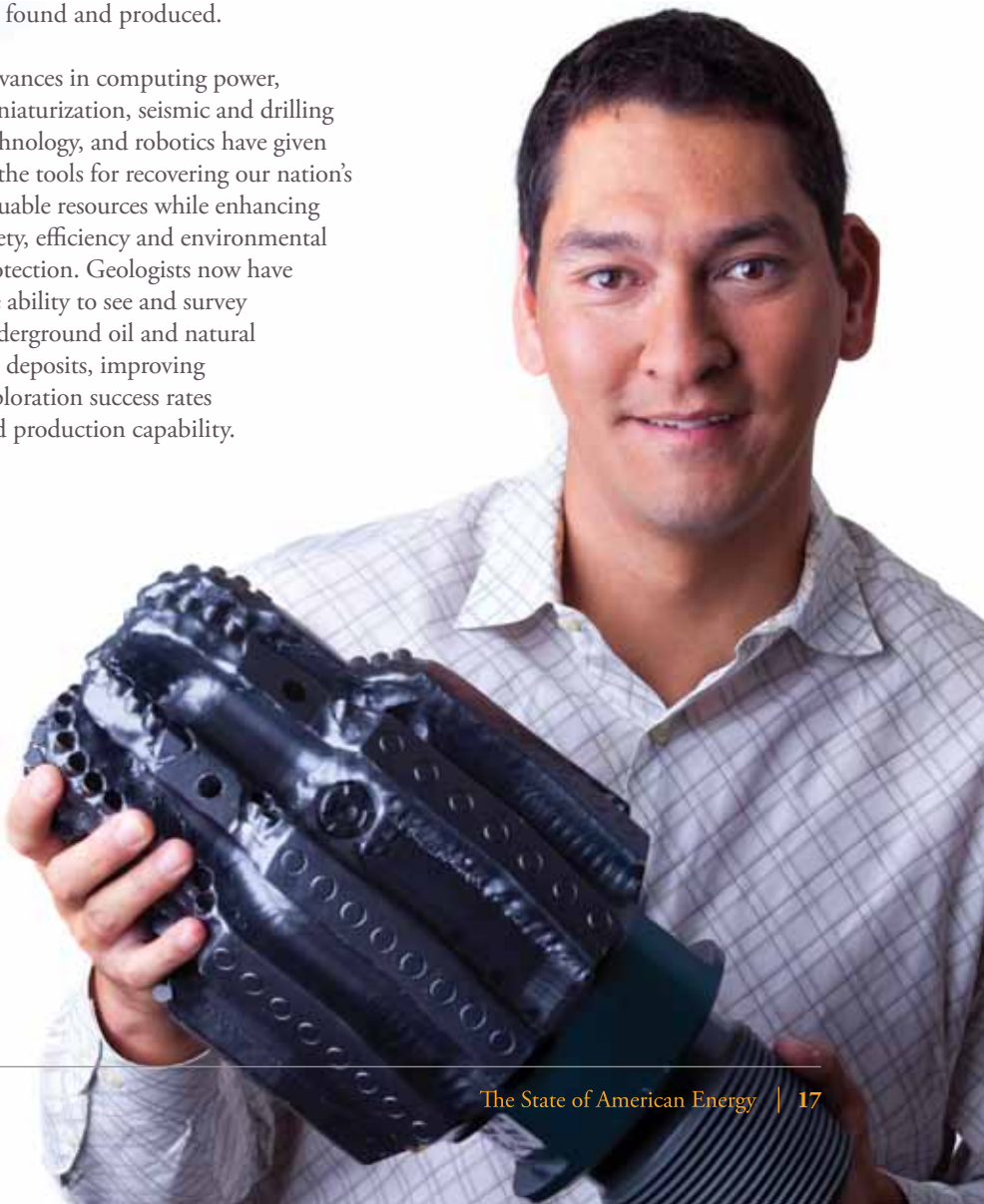
**“A pillar of the domestic workforce is skilled industrial labor. The (Oil and Natural Gas Industry Labor-Management) committee will support policies that protect and promote job security and growth...”**

— Mark H. Ayers, President,  
AFL-CIO Building and Construction Trades Department, June 19, 2009

## Developing Advanced Technologies

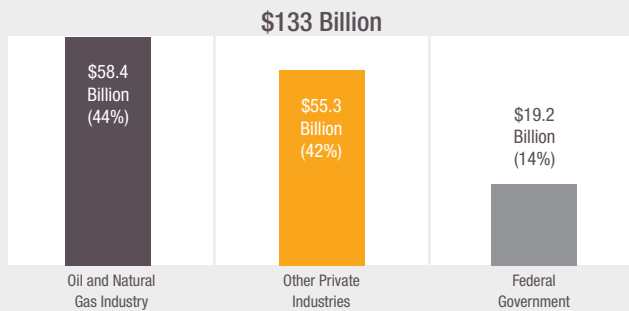
The oil and natural gas industry is focused on developing and delivering reliable and affordable energy supplies to American consumers and businesses. The technology used in oil and natural gas development has dramatically transformed how energy resources are found and produced.

Advances in computing power, miniaturization, seismic and drilling technology, and robotics have given us the tools for recovering our nation's valuable resources while enhancing safety, efficiency and environmental protection. Geologists now have the ability to see and survey underground oil and natural gas deposits, improving exploration success rates and production capability.



## Carbon Mitigation Investment by Investor Group

(2000-2008)



Source: T2 & Associates and CEE, June 2009.

To date, our companies have invested hundreds of billions of dollars in the technology that enables America's oil and natural gas companies to access more resources more efficiently, with significantly less impact on the environment.

Our industry is a leader in technology and innovation; oil and natural gas companies are at the forefront of:

- Employing technologies such as cogeneration—the re-use of excess heat from refinery processes to produce additional energy—to become more efficient, reducing both energy use and emissions;
- Developing carbon capture and storage technology, or CCS, to reduce carbon dioxide (CO<sub>2</sub>) emissions by storing them underground, a process also used to assist in the recovery of oil and natural gas;
- Utilizing advanced drilling technologies such as 4-D visualization (using seismic imaging) and directional drilling to more accurately “see” underground and pinpoint energy resources; and
- Researching, developing and marketing alternative energies, including solar, geothermal, biofuels, fuel cells, hydrogen power and wind energy.

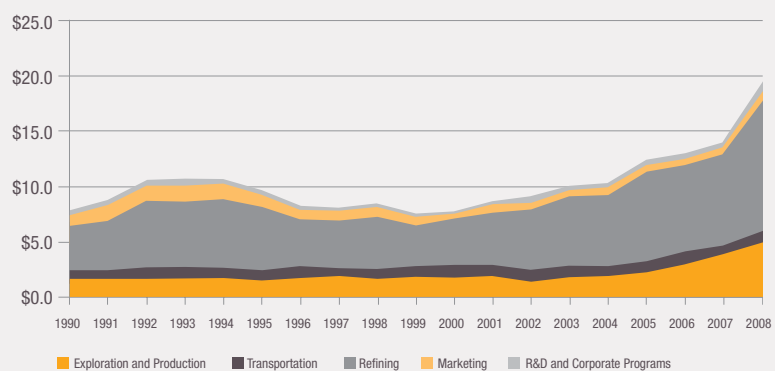
The industry has invested:

- **\$194 billion** since 1990 toward improving the environmental performance of its products, facilities and operations; and
- **\$58.4 billion** in low- and zero-carbon emissions technologies from 2000 to 2008—more than either the federal government or all other U.S.-based private industries combined.

These investments have already reaped significant rewards: a study found that GHG emissions from the U.S. oil and natural gas industry were reduced from baseline projections by more than **48 million metric tons** of carbon dioxide equivalent from 2007 to 2008, a reduction comparable to taking **9.7 million cars** off the roads.<sup>40</sup>

## U.S. Environmental Expenditures since 1990

(by sector\*)



\*Remediation & Spills expenditures are included in the sector numbers and are reported data only. The remaining sector expenditures are estimated for the entire industry.  
Source: API Statistics, Environmental Expenditures by Oil and Gas Industry, February 2010.

## Diversifying our Energy Resources

While providing the oil and natural gas needed to fuel our economy now and in the future, companies are also pioneers in developing and expanding the use of alternative and renewable forms of energy—from geothermal to wind, from solar to biofuels, from hydrogen power to the lithium ion battery for next-generation cars.

One study found that U.S.-based oil and natural gas company investments in renewable energy accounted for nearly one-fourth of the money invested in renewables by all U.S.-based private industry and the federal government over the past nine years. More than **\$6.7 billion** went toward the development of energy sources such as wind, biofuels and solar power.<sup>41</sup>

The oil and natural gas industry also accounts for **73 percent** of all the North American investments made in fuel substitution technologies since 2000—more than **\$21 billion** developing substitute fuels, such as liquefied natural gas and reducing fugitive methane emissions.

Further, the nation's air quality has improved markedly over the past several decades. It would take 100 of today's cars to equal the air emissions from just one car from the 1970s, thanks to improvements in both advanced automobile technology and the introduction of cleaner burning gasoline, and major changes in diesel fuel.<sup>42</sup>

“...the industry has increased refinery efficiency and reduced emissions through the use of combined heat and power technology...this reflects our ongoing commitment to improving environmental performance even as we produce more energy, more efficiently to power our economy and improve our lives.”

— Jack Gerard, October 22, 2010

In June 2006, industry refiners began reducing the amount of sulfur in diesel fuel to make Ultra-Low Sulfur Diesel (ULSD), which has supplanted traditional diesel fuel formulations during a transition period determined by the Environmental Protection Agency (EPA).

- According to a study on heavy-duty diesel engines used in large trucks and buses, the fuel/engine combination is reducing most pollutants from tailpipes by more than **90 percent**. The fine particulate matter (soot) emission has been reduced by **99 percent** from the allowable level in 2004, and is even **90 percent** lower than 2007 requirements.<sup>43</sup>
- Other air emissions are also much below the required levels. Nitrogen oxide, which can contribute to the formation of smog, is **10 percent** below the required level.

Do Kim C., *Homeowner*  
One of the 168 million Americans who keeps her home warm thanks to oil and natural gas.

Source: *Short Term Energy Outlook Table WF01*, U.S. Energy Information Administration, October 2010.



## Improving Efficiency

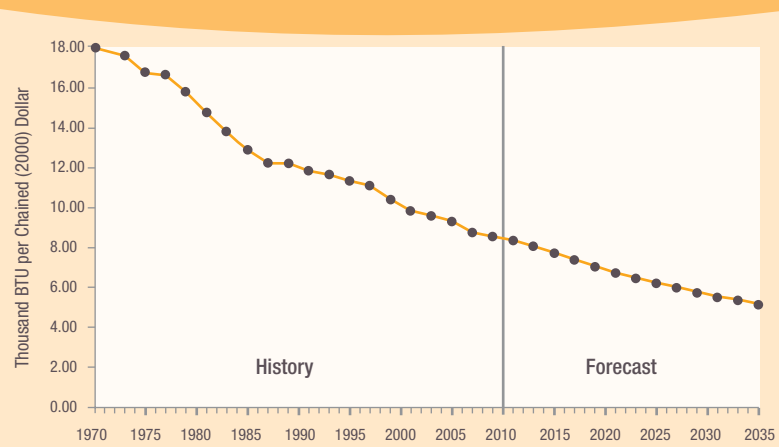
In addition to investments in renewable energy and advanced fuels, we must also recognize that the greatest “new” energy source available for use is the reduced demand brought about by greater energy efficiency and conservation. We use about half as much energy today for every dollar of GDP as we did back in 1973.<sup>44</sup>

Looking forward, our nation must take energy efficiency even more seriously, and the oil and natural gas industry is doing its part.

Through such technologies as combined heat and power, also known as cogeneration—the re-use of excess heat from refinery processes to produce additional energy—refiners are becoming more efficient, reducing both energy use and emissions.

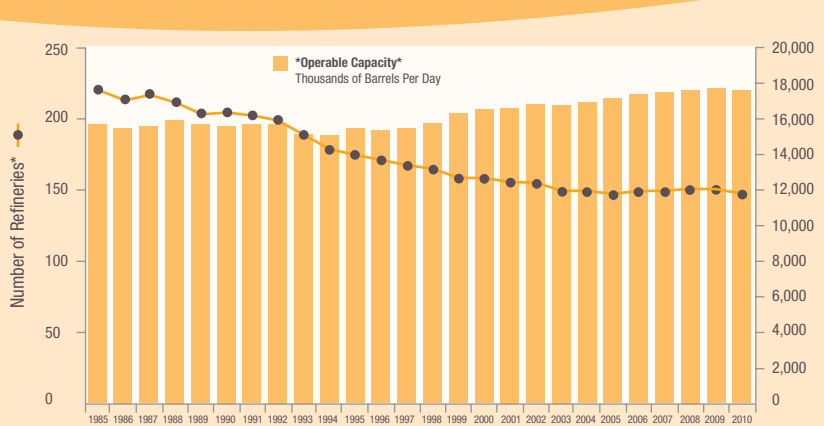
Since 1985, U.S. refining capacity has increased by **11 percent**,<sup>45</sup> and while increasing capacity, refineries also invested **\$108 billion** since 1990 to make cleaner burning fuels. Moreover, a number of refiners are expanding and upgrading equipment to handle increased processing of heavier crude oils, including oil derived from Canadian oil sands.

### Future U.S. Energy Demand per Dollar of GDP – Growing Efficiency



Source: EIA, International Energy Outlook 2010.

### Number of Refineries Declines but Capacity Expands



\*Operable as of January 1st of each year.  
Source: EIA, Petroleum Supply Annual.

## what policymakers should do

Consistent government forecasts predict that the United States will require more energy from all sources in the future; however, oil and natural gas will continue to meet the majority of our energy needs in the coming decades. First and foremost, we must responsibly explore for and produce America's own natural resources. Our economic and energy security depend upon a regulatory system that supports domestic energy production and provides certainty for U.S. investments so that jobs and revenues stay here in the United States.

While the federal government and industry have taken significant steps to improve safety and address questions raised by the incident in the Gulf, it now requires an effective partnership between government and industry to expeditiously approve pending plans and permits in the Gulf of Mexico and Alaska. We must also take the additional steps necessary to move forward with production of our oil and natural gas resources, including: completing the necessary environmental analyses and recommencing offshore leasing. Responsible development of our domestic energy resources today will ensure we will be able to meet tomorrow's energy needs.

Policymakers should encourage investment and allow the responsible development of our nation's vast domestic energy resources, which will create well-paying jobs and spur economic growth. The administration's announcement reversing its decision to open new areas and maintain existing areas for offshore oil and natural gas exploration was disappointing. It will cost jobs, stifle economic growth and undermine our energy security. We are committed to working with policymakers to refocus our nation's energy agenda. We need to get back on track and support domestic production of the energy America needs.

### Develop America's Energy Resources

Congress and the administration should support increased development of North America's oil and natural gas resources, including federal lands both on- and offshore, vast shale gas resources and Canadian oil sands. Specifically, policymakers should:

#### Offshore Drilling

- Re-examine and reconsider limits to offshore exploration and production in the eastern Gulf of Mexico, and in the Atlantic and Pacific;
- Expeditiously process and approve drilling plans and permits for pending and future lease areas;
- Ensure that there are adequate numbers of trained personnel and sufficient resources in place to enforce drilling rules and regulations;
- Support exploration in Alaska;
- Support and encourage Atlantic seismic studies to obtain a more accurate picture of oil and natural gas reserves, leading to future exploration and development;
- Move forward with the permitting plans and lease sale for offshore Virginia; and
- Maintain the flexibility necessary for well design and equipment standards. Safety and engineering experts must consider the unique characteristics of each individual well site and are in the best position to determine technology needs and situation specifics.

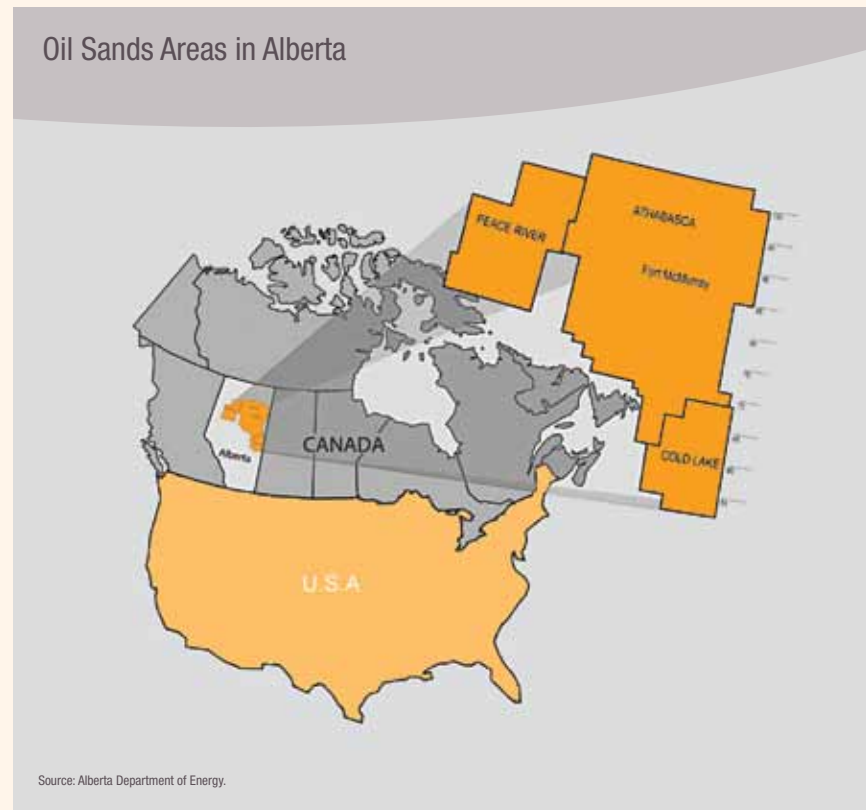


## Natural Gas

- Recognize the environmental, economic and efficiency benefits of natural gas;
- Policymakers should foster a level playing field that ensures all energy options are free to compete in an open market, rather than approaches that foreclose options through an arbitrary selection of winners and losers.
- Allow states to continue their effective regulation of hydraulic fracturing;
- Congress should await completion of EPA's hydraulic fracturing study before considering whether additional regulations are necessary.
- Support hydraulic fracturing, which has been safely used in one million wells over the past 60 years, has a proven track record and provides for tremendous economic potential of new natural gas finds;
- Avoid unnecessary legislation or onerous regulations that could have dire economic consequences: killing jobs, impeding natural gas development and threatening our economy.

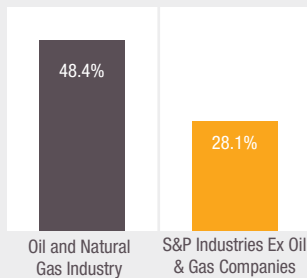
## Canadian Oil Sands

- Promote and advance supportive policies and a regulatory environment that will accommodate growth for and free trade of Canadian oil sands and related products; and
- Support the approval of key pipeline and refining infrastructure projects that will help create jobs in both the United States and Canada.





## Income Tax Expense as Share of Net Income Before Income Taxes (2009)



Source: Compustat North America Database (January 2010 update).

## Avoid Punitive New Energy Taxes

With policies that create and sustain a level playing field for all energy options, the oil and natural gas industry will create new jobs and help fuel the nation's economy. Conversely, adding billions of dollars in new and punitive taxes on our industry will have a devastating impact on American jobs and economic growth.

The oil and natural gas industry pays more than its fair share in taxes. Over the last five years, industry earnings have been in line with U.S. manufacturing industries—averaging just 7 cents for every dollar of sales—and oil and natural gas companies pay **an effective tax rate of 48.4 percent** compared to 28.1 percent for all other S&P Industrial companies.<sup>46</sup>

Yet, there are nearly annual calls for billions of dollars of increased taxes on the oil and natural gas industry. The continued threat of new taxes and fees each year creates an uncertain business environment for U.S. companies.

- According to studies by Wood Mackenzie and Louisiana State University economist Dr. Joseph Mason, some of the tax proposals could:

- Reduce domestic production by as much as **600,000 barrels of oil equivalent** per day;
- Put an estimated **\$15 billion** in capital at risk in 2011 alone and almost **\$130 billion** over the next 10 years;
- Put **165,000 jobs**<sup>47</sup> at risk in 2020; and
- Reduce wages by **\$68 billion** nationwide.<sup>48</sup>

This is no surprise: historically, higher taxes have resulted in less domestic energy, and restrained supplies often lead to higher energy costs for consumers. In today's economy, that could not only stifle recovery and growth, but also result in fewer jobs and leave Americans more dependent on foreign energy sources. Americans overwhelmingly oppose raising taxes on America's oil and natural gas industry, and most agree higher taxes could threaten jobs. In a recent Harris Interactive poll of 1,000 U.S. voters, **60 percent** opposed an increase in taxes on the industry, with **40 percent** strongly opposing such a move.

In addition, with 15 million Americans unemployed and millions more underemployed, **54 percent** of voters fear that raising industry taxes could destroy jobs across the country.<sup>49</sup> Americans understand that raising taxes on an industry that provides most of their energy and supports more than **9.2 million jobs** is not good for

them, their local community or the national economy.

Raising energy taxes could eliminate American jobs and hurt businesses, discourage investment in energy production, compromise energy security and decrease U.S. competitiveness abroad. Adding research and development incentives for renewable and alternative energy is a good idea, but not at the expense of oil and natural gas companies via higher taxes.

Policymakers should pursue tax policies that encourage U.S. businesses to grow and invest, creating new jobs here at home and making U.S. companies more competitive around the world. This agenda should support investments in new energy projects, as well as:

- Support oil companies' ability to expense Intangible Drilling Costs;
- Continue to make the Section 199 manufacturing deduction and the Dual Capacity Tax Credit available to all businesses, including oil and natural gas companies;
- Support a viable oil spill liability trust fund. Unreasonable increases in liability limits would threaten the viability of offshore operations, significantly reduce U.S. production, put **145,000 jobs at risk** and threaten our energy security;<sup>50</sup> and
- Encourage energy policies that create and protect U.S. jobs and energy security.

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“...current tax preferences for oil and gas procedures are hardly subsidies. They are instead methods that allow private companies to keep more of the money they earn while providing low-cost energy to the American consumer...(tax penalties on the oil and natural gas industry) is not punishing fossil fuel producers as much as American consumers.”

— Mackubin Thomas Owens, Professor of National Security Affairs, Naval War College; Editor, *Orbis*, February 16, 2010

## Smart Energy Policy = Sound Economic Principles

Because of the interconnectedness of energy to all aspects of our economy, energy policy and regulatory decisions have an enormous potential impact on Americans and their ability to find jobs and purchase goods.

Burdensome and unnecessary proposals could erode industry environmental and efficiency gains and have unintended consequences for the U.S. economy, including sharply raising energy costs, reducing household buying power and resulting in the destruction of millions of American jobs.

Yet the EPA is moving forward with a number of proposed regulations that could impact our ability to deliver energy resources, cost millions of jobs, hurt consumers and put U.S. businesses at a competitive disadvantage globally.

### **national ambient air quality standards (naaqs)/higher ozone standards**

Ground-level ozone is one of six pollutants regulated by National Ambient Air Quality Standards (NAAQS)—standards set by EPA to monitor and regulate air pollutants considered harmful to public health. NAAQS are reviewed on a five-year cycle; nevertheless, EPA is pushing forward with a planned final rule only three years after its previous review, despite the fact that no new data exist on which to base new standards.

Despite a recent six-month postponement, EPA has indicated it will tighten ozone standards so close to current background levels that not even pristine areas like Yellowstone National Park could comply with the proposed air quality standards.

More stringent standards would be costly, unattainable and unnecessary—and impose a severe burden on American manufacturers, the U.S. economy, and American jobs and consumers. A Manufacturers Alliance/MAPI study finds that the proposal could result in the loss of **7.3 million U.S. jobs** by 2020; add **\$1 trillion** in new regulatory costs per year between 2020 and 2030; and sharply reduce the nation's productivity. GDP could be reduced by **\$676.8 billion**—or 3.6 percent—in 2020.<sup>51</sup>

**EPA should withdraw its rule-making and allow the normal five-year review of the ozone standard to continue.**

### **gasoline-ethanol blends (E15)**

The oil and natural gas industry supports the responsible development of ethanol and other alternative fuels that can contribute as economic, reliable and affordable energy options in the marketplace. However, EPA's recent approval of a waiver that allows for 15 percent ethanol blends in gasoline (E15), up from 10 percent for 2007 and newer vehicles only, is premature, lacks statutory authority and puts consumers at risk.

Ongoing testing by our industry, automakers and the DOE to determine whether E15 is safe is not yet complete. Results so far have revealed potential safety and performance problems that could affect consumers and the investments they've made in their automobiles.<sup>52</sup> Thus, the partial waiver could threaten vehicle performance and the environment, void warranties, confuse consumers—and possibly create a public backlash against renewable fuels.

**EPA should extend its review six months or more to allow scientific testing to be completed. Approving the use of E15 without adequate and complete testing puts American consumers at risk.**

### **greenhouse gas emissions regulation (ghg)**

As of this writing, EPA rules regulating GHG emissions under the Clean Air Act are scheduled to go into effect on Jan. 2, 2011. These rules could impose a significant burden on the U.S. economy, requiring substantial investments and diverting capital that might otherwise create jobs and assist our economic recovery. More than six million businesses could be required to obtain permits to expand or merely continue operating. State agencies charged with issuing permits could be swamped, leading to long delays in business growth and job creation.

**API believes any climate policy must be established by Congress and should incorporate the principles of a fair, efficient and market-based strategy that minimizes the burden on consumers and jobs.**



## Conclusion

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## Policy Choices Needed to Ensure Future Energy Security

Our leaders must pursue a thoughtful, commonsense energy agenda that promotes U.S. job creation, economic growth and energy security—and avoids harmful taxes or regulations. We encourage policymakers to:

- ▶ Increase energy production by supporting policies that promote all energy sources;
- ▶ Pursue policies that encourage investment in new energy projects and provide market-based solutions to meet energy demand;
- ▶ Reject new energy taxes and turn aside unnecessary regulations on oil and natural gas development; and
- ▶ Abandon efforts by the EPA to regulate greenhouse gases under the Clean Air Act; instead, allow Congress to establish and incorporate principles of a fair, efficient and market-based climate strategy that minimizes the burden on consumers and jobs.

Oil and natural gas have been and will continue to be engines of economic development around the world. For at least the next several decades, we will continue to rely on oil and natural gas to meet growing energy demand, even as we improve energy efficiency, and as renewables and alternatives play an increasingly important role in a changing energy landscape.

A vital link exists between the oil and natural gas industry and the U.S. economy. The industry supports more than **9.2 million U.S. jobs** and more than **\$1 trillion in economic contributions**. Developing U.S. oil and natural gas resources currently off-limits could create hundreds of thousands of new jobs and generate more than **\$1.7 trillion** in new government revenue.

Given this energy reality, in the months and years ahead, the nation has important decisions to make about its energy future. What we need today—and tomorrow—are policy choices that increase, not decrease, energy production.

Choosing to decrease domestic production—including higher energy taxes and unnecessary regulations—only contributes to volatile prices, slower economic growth and American job losses. We need commonsense policies and regulations administered efficiently, and sound and fair tax policies that allow American companies to compete on an even footing around the world.

We need increased access to where oil and natural gas are found, while protecting national parks and fragile ecosystems. Government policies should harmonize our energy and environmental goals, encouraging responsible development that creates jobs and helps drive our economy.

Our nation's history is replete with short-term "fixes" and searches for "silver bullets" to solve our energy challenges. Price controls, limitations on oil and natural gas development, picking winners and losers among fuels, and increasing taxes have all been tried by government—but we have failed to develop a comprehensive national energy policy to benefit American consumers and businesses.

We should learn from the past—and take some positive steps to ensure we meet America's energy needs in the decades ahead. As a society, we cannot remain passive to energy, the environment or economic growth. Each will fall short of its fullest promise, absent constructive industry-government partnerships committed to providing our nation with a workable energy security policy.

We need a public policy framework to ensure future energy security for our nation. We need policymakers who understand the energy realities and the energy challenges we face. We need to get it right on energy. Too much is at stake for our nation to do otherwise.

## We essentially have two choices:

### ► Choice #1

Encourage more domestic oil and natural gas production to help meet future demand, putting more Americans to work and delivering substantial government revenue to benefit all Americans; or

### Choice #2

Accept policies that discourage development at home, forcing us to import more energy. That means spending more overseas for oil and natural gas, weakening U.S. energy security, reducing U.S. jobs and diminishing U.S. economic growth.



Melva T., *Lease Records*

One of 9.2 million Americans whose job is supported by the oil and natural gas industry.

Source: *The Economic Impacts of the Oil and Natural Gas Industry on the U.S. Economy*, PricewaterhouseCoopers LLP, September 2009.

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