Recommendations for a Balanced Energy Policy:

A Briefing Book Presented to the 112th Congress

CONSUMERENERGYALLIANCE

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Who is Consumer Energy Alliance?

Consumer Energy Alliance (CEA) is an independent, nonprofit, nonpartisan organization whose mission is to expand the dialogue between the energy and consuming sectors and to advance a better understanding of energy security. CEA advocates for the thoughtful development and utilization of energy resources in order to help create a balanced energy policy and maintain stable prices for consumers. As of January 1, 2011 CEA has 154 affiliated members – from airlines to trucking to manufacturing to energy producers – and nearly 300,000 individual consumer advocates. CEA appreciates the support it receives from its affiliate members and is proud to represent them.

CONSUMERS/BUSINESS/AGRICULTURE/INDUSTRY/END-USERS

Agriculture-Energy Alliance
Air Conditioning Contractors of America
Air Transport Association
Alternative Energy Builders
American Bus Association
American Chemistry Council
American Forest & Paper Association
American Highway Users Alliance
American Iron & Steel Institute
American Trucking Associations
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Dow Chemical Company
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Energy People Connect
Ernst & Young
The Fertilizer Institute
Florida Chamber of Commerce
Florida Family Association, Inc.
Florida Fertilizer and Agrichemical Association
Florida Minerals and Chemistry Council
Florida Restaurant and Lodging Association
Florida Taxpayers Union
Florida Transportation Builders Association
GCI – Industrial Telecom Group
Greater Houston Partnership
Grocery Manufacturers Association
Gulf County Economic Development Council
The Hispanic Institute
Houston Restaurant Association
Houston Technology Center
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Mosaic
Mowell Financial Group, Inc.
National Association of Convenience Stores
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National Association of Neighborhoods
National Association of Truck Stop Operators
National Energy Education Development Project
National Small Business Association
Nucor Steel

On Deck Seafood
PCS Phosphate
The Peace & Prosperity Project
Plumbing-Heating-Cooling Contractors—National Association
Ports-to-Plains Trade Corridor Coalition
Research Partnership to Secure Energy for America
Resource Development Council
Ring Power Corporation
Rivere Seafoods
Robinson Fans
Santa Barbara County Energy Coalition
60 Plus Association
Southeastern Fisheries
Steel Manufacturers Association
Texas Prosperity Project
Townsend Marine
U.S. Chamber of Commerce
Union Contractors and Subcontractors Association, Inc.
United Motorcoach Association
University of Texas, Center for Energy Economics
Virginia Manufacturers Association
W. W. Gay Mechanical Contractor, Inc.
Ward Packaging and Associates
Wisconsin Manufacturers and Commerce

ENERGY PROVIDERS & SUPPLIERS

Alyeska Pipeline Service Company
American Association of Petroleum Geologists
American Exploration & Production Council
American Gas Association
American Petroleum Institute
American Public Gas Association
American Public Power Association
Apache Corporation
Association of Oil Pipe Lines
Barney's Pumps, Inc.
BP
CCC Group, Inc.
The Center for North American Energy Security
Chevron
Choice! Energy
Comanco
ConocoPhillips
Delta American Fuels
Devon Energy Corporation
Dynamic Industries, Inc.
El Paso Energy Corporation
Environmentally Conscious Consumers for Oil Shale
Environmentally Friendly Drilling Project
Exelon Corporation
ExxonMobil
Florida Handling Systems
Florida Petroleum Council
Foresight Wind
Gas Technology Institute
Green Earth Fuels
Greenline Industries
Gulf Coast Clean Energy Application Center
Halliburton
HD Supply
Hess Corporation
Houston BioDiesel
Houston Clean Energy Park
HT/DcR Engineering, Inc.
Independent Petroleum Association of America
Interstate Oil & Gas Compact Commission
Lakeridge Energy Corporation
Marathon Corporation
Material Transfer Industries, LLC
Metal Treating Institute
Moretrench
MS Industrial Corporation
National Ocean Industries Association
National Petrochemical and Refiners Association
Natural Gas Supply Association
New England Fuel Institute
Nuclear Energy For Texans
Nuclear Energy Institute
Ocean Energy Institute
Peabody
Petrohawk
Sasol
Shell Oil
Smith Brothers Oil
Society for Mining, Metallurgy & Exploration
Statoil
Tampa Tanks, Inc.
Texas Alliance of Energy Producers
Trans Pacific Oil Corporation
U.S. Oil & Gas Association

Introduction

When Consumer Energy Alliance (CEA) released its *Recommendations for a Balanced Energy Policy: A Briefing Book Presented to the Administration and the 111th Congress* in 2009, U.S. energy policy stood at a perilous junction. At the time, price volatility and high energy costs contributed to the destabilization of the economy as Americans grappled with record high oil prices. In the report, CEA called on the Congress and Administration to adopt sensible polices that would promote development of all domestic energy sources with the ultimate goal of diversifying U.S. energy supply, creating jobs and stabilizing energy prices for consumers.

Unfortunately, the 111th Congress and the Obama Administration did not take the necessary steps to implement a balanced energy policy. Rather, development of vital U.S. energy sources has been restricted through moratoria, bans and an unclear regulatory environment. American consumers have time and again demanded that the federal government implement a responsible energy policy – a path forward that utilizes domestic resources and innovation to create jobs, revenue and a stable energy future while protecting the environment. Once again, CEA and its affiliates urge the 112th Congress and the Administration to institute a balanced, diversified, "all-of-the- above" energy policy.

CEA understands the various hurdles present in promoting a comprehensive energy policy. This past year, the tragic *Deepwater Horizon* incident forced policymakers, regulators and industry to reexamine the safety of offshore exploration and production. Although uncertainty about the exact causes remains, both industry and federal regulators have taken great strides to implement new safety measures to prevent another blowout. Further, industry has allocated additional resources to be able to respond to any future incident. The abundant oil and natural gas resources off American coasts hold tremendous potential for energy supply stability as well as job creation and royalty revenues for federal, state and local governments.

Questions have also arisen about the safety of onshore energy: unconventional fuel sources such as shale gas, oil shale and oil sands, as well as nuclear energy, have generated concerns of environmental degradation and public health and safety. Fortunately, advanced technologies and best practices permit energy producers to develop these resources with minimal disruption to the surrounding environment and full protection of public health.

CEA asks the new Congress to thoughtfully weigh all of the facts and economic considerations surrounding energy and environmental issues in order to develop a balanced energy policy that reduces U.S. vulnerability to foreign supply shocks while boosting economic growth. The energy industry – including traditional energy producers, clean-energy technology innovators and alternative fuels producers – has the capacity to generate millions of high-paying jobs for Americans. Moreover, domestic energy production supports millions of additional jobs in other industries that cumulatively add billions to the gross national product. Finally, in an era of fiscal restraint and budget deficits, royalty revenues from energy production can provide relief to governments struggling to close budget gaps. As the economy slowly rebounds from recession, the 112th Congress must act to ensure American consumers benefit from the security of a robust national energy policy.

In particular, CEA recommends that the 112th Congress pursue policies that achieve these objectives:

- Permit access to energy development on the Outer Continental Shelf;
- Press the Administration to remove barriers to onshore and offshore access;
- Ensure the Administration adopts and implements regulations that are equitable, scientifically based and properly reflect the concerns of the legislature and the general public;

- Provide incentives for the creation and expansion of high-quality, affordable alternative and renewable fuel sources;
- Increase financial guarantees for new nuclear facilities;
- Promote technological advances in the exploration and production of traditional and unconventional energy resources to ensure further gains in environmental stewardship;
- Ensure public lands are utilized in a manner consistent with public desire;
- Support the maintenance and expansion of the infrastructure necessary to transport energy to consumers now and in the future;
- Expand research and development programs for new energy sources as well as energy-efficient technologies and practices; and
- Promote a comprehensive program aimed at maintaining U.S. intellectual competitiveness through supported education of skilled scientists, engineers and trade professionals.

CEA believes these objectives in concert with private-sector collaboration will enhance U.S. economic and energy security and provide affordable energy for struggling American consumers. The lack of a balanced energy policy jeopardizes the nation's energy and economic future; Congress must prioritize U.S. energy policy in the 112th session for the sake of all Americans.

Executive Summary

The 112th Congress must grapple with the long-standing challenge of formulating a national energy policy that will guide development of alternative fuels while being realistic about the fact that the United States will be dependent on traditional fuel sources for the foreseeable future. And, Congress must do all of this while balancing the country's economic needs and the planet's environmental needs. No single source of energy, whether oil, gas, biofuels or nuclear, can be developed overnight. More realistically, the process of developing new energy sources and a reliable infrastructure for their delivery can take years, if not decades.

The following document will highlight what Consumer Energy Alliance believes are the most important areas for policymakers to consider including:

- Allowing expanded access to domestic energy resources including onshore and offshore oil and natural gas and unconventional resources;
- Supporting vital energy infrastructure maintenance and expansion projects;
- Creating incentives for alternative energy expansion including wind, solar and biofuels;
- Promoting and encouraging energy efficiency and sustainability practices; and
- Expanding energy education.

CEA urges the current Administration and the 112th Congress to work together in a collaborative manner, so that pragmatism and the greater good trump politics and party agendas. The path to achieve this is clear: build a comprehensive energy policy that promotes access to all sources of energy available to the United States now while having the long-term vision and discipline to develop the technologies and infrastructure needed in the future. However, the journey will not be easy. Sound policy will form a foundation that may not pay off while the 112th Congress is still in session, but it will benefit all Americans in the future.

When it comes to energy, America needs it all, and CEA hopes that the 112th Congress considers every opportunity to meet this need.

Offshore Oil & Natural Gas Resources

The events surrounding the *Deepwater Horizon* incident in 2010 have drastically changed the regulatory landscape for offshore oil and natural gas development. Within weeks of the tragedy, the Administration implemented a temporary moratorium on all deepwater drilling on the Outer Continental Shelf (OCS) and allowed for very limited permitting for shallow-water drilling.

Although the temporary moratorium was eventually lifted and industry and government regulators have both taken significant strides to improve operations and safety standards, access to a large portion of oil and gas resources off the nation's coasts is still at risk because of continued regulatory uncertainty. Ultimately, an uncertain regulatory environment limits further investment in offshore operations and jeopardizes the thousands of jobs tied to the offshore industry.

Of particular note, the Department of the Interior (DOI) announced in December that leasing in the Eastern Gulf of Mexico, the Atlantic and Pacific will not be part of the next Five Year OCS program, even though those areas had originally been included in the draft 2012-2017 program released in March 2010. As such, shifting policies and unclear regulations have created a confusing and unpredictable situation for producers who are now hesitant to invest in offshore operations, as well as hard-working Americans whose livelihoods depend on offshore energy activities.

Abundant Resources:

The government estimates that all of the offshore waters around the United States contain an estimated 86 billion barrels of undiscovered, technically recoverable oil and 420 trillion cubic feet of undiscovered, technically recoverable natural gas.[1]

Since U.S. offshore oil and gas development began in 1954, the OCS has produced nearly 17 billion barrels of oil from almost 150 million leased acres, making it one of the most productive oil and gas regions in the world.[2] Today, the OCS accounts for about 13 percent of America's domestic natural gas production and about 33 percent of America's domestic oil production.[3] As the charts below illustrate, OCS production accounts for a significant portion of U.S. domestic crude production and consumption.

U.S. Offshore Crude Oil Production, 2005-2009 (millions of barrels per day)

Year	Federal Offshore	State Offshore
2005	1.355	0.358
2006	1.371	0.331
2007	1.344	0.312
2008	1.218	0.280
2009	1.584	0.269

*Energy Information Administration

U.S. Petroleum Consumption, 2005-2009 (millions of barrels per day)

Year	Gasoline	All Petroleum Products
2005	9.16	20.80
2006	9.25	20.69
2007	9.29	20.68
2008	8.97	19.48
2009	8.98	18.68

*Energy Information Administration

[1] Congressional Research Service, "U.S. Offshore Oil and Gas Resources: Prospects and Processes," April 26, 2010.
[2] Bureau of Ocean Energy Management, Regulation and Enforcement, "Federal OCS Oil & Gas Production as a Percentage of Total U.S. Production: 1954 – 2006," 2008.
[3] Energy Information Administration, "Oil: Crude and Petroleum Products Explained," 2010.

The United States will continue to consume high volumes of oil and natural gas, and OCS production should play a crucial role in meeting demand and reducing dependence on foreign resources. If these resources do not come from domestic production, increased imports will be needed to meet demand, further eroding U.S. energy security.

Economic Security:

In addition to meeting growing energy demand, offshore oil and gas development has the ability to create hundreds of thousands of domestic jobs across all sectors of the economy. Currently, the oil and natural gas industry directly provides employment for more than 1.8 million people in the United States, but the industry supports 9.2 million American jobs – including 170,000 in the Gulf of Mexico related to the offshore development business.[4] Further, jobs in manufacturing, agriculture, chemical processing, retail, transportation, technology and millions more rely on oil and gas production to meet basic needs or as a feedstock. Without oil and natural gas, our lives as we know them would not be the same. In addition to the nearly 9 million barrels of gasoline Americans consume every day, petroleum and natural gas are needed to produce essential products such as plastic, fertilizer, basic chemicals and medicine.

As demonstrated above, offshore oil and gas resources hold tremendous potential. Therefore, Consumer Energy Alliance recommends the following policy options to ensure thoughtful, responsible access to our nation's oil and gas resources:

- Remove limitations on offshore oil and natural gas development and increase offshore drilling opportunities;
- Ensure regulatory agencies receive sufficient resources to conduct environmental surveys, regulatory oversight and leasing & permitting activities;
- Conduct regional, basin-oriented seismic resource evaluations and market assessments to identify opportunities for increasing offshore oil and natural gas supplies; and
- Enact federal legislation allowing states and coastal communities to receive an appropriate share of the royalty revenues generated by production in their adjacent waters.

[4] American Petroleum Institute, http://www.api.org/Newsroom/upload/Erik_Milito_Testimony_Energy_Mineral_Resources_Subcommittee_20100614_final_final_oral.pdf. June 2010.

Arctic Resources

While most Americans do not consider the United States an Arctic country, the U.S. is one of the five nations (the others being Canada, Greenland/Denmark, Norway and Russia) bordering the Arctic Ocean. The Arctic region is defined as the area north of the Arctic Circle, which spans the globe at 66.56° (66°34') north latitude. Geologists estimate that the Arctic could contain approximately 22 percent of the world's undiscovered conventional oil and natural gas resources. Of that, the U.S. Geological Survey reports that Alaska holds enough oil and natural gas to maintain production for several years to come.[1] The Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) estimates that the waters off Alaska's coasts hold about 27 billion barrels of oil and 132 trillion cubic feet of natural gas. In fact, the Chukchi Sea, off Alaska's northwest coast, offers more resources than any other undeveloped U.S. energy basin and may be one of the largest untapped oil and gas sources in the entire world.

Economic Sovereignty in the Arctic:

Despite the promise of oil and natural gas resources in the Arctic, there remain sovereign, environmental and legal issues that could inhibit energy production in the region. In particular, overlapping boundary claims among Denmark, Canada, Norway, Russia and the United States have the potential to delay resource development. Several of these competing claims derive from the fact that the 1982 United Nations Convention on the Law of the Sea (UNCLOS) allows nations to claim economic sovereignty for as much as 350 nautical miles (403 U.S. statutory miles) beyond the point where the sea depth is more than 8,200 feet. Due to the extensive Arctic continental margins, nations are able to make competing claims for most Arctic waters. In fact, Canada, Greenland and Russia have all made claims that half of the Arctic is theirs.[2] Although, the United States has not signed UNCLOS, it treats most parts of the convention as customary international law.

Arctic Circle

*Magellan Geographix

[1] U.S. Geological Survey, http://pubs.usgs.gov/fs/2008/3049/.
[2] Philip Budzik, "Arctic Oil and Natural Gas Potential," U.S. Energy Information Administration, October 2009.

Challenges to Alaska's Rich Arctic Oil and Natural Gas Resources:

As part of the Arctic region, Alaska holds immense offshore oil and natural gas resources with the potential to create substantial economic opportunities, jobs and domestic energy for the entire nation. A recent study estimated that activity in the Alaska offshore could produce an average of 35,000 jobs in Alaska on an annual basis with a payroll totaling more than $72 billion as well as create tens of thousands of jobs across the nation.[4] Additionally, if the Alaska Outer Continental Shelf (OCS) resources can be developed, it will extend the life of the Trans-Alaska Pipeline and provide the capital and capacity needed to make an Alaska gas pipeline a reality. Unfortunately, development of these rich natural resources has been stymied by continued delays in permitting and legal battles.

Since OCS leasing off Alaska began in the 1970s, 670 leases have been awarded to companies interested in exploring for oil and gas off Alaskan coasts.[5] Despite years of applications for permits, community consultation, environmental studies and analysis, and nearly $3 billion in bonus payments to the federal government and investment in technology, equipment and personnel, not one new well has been drilled in the Alaska OCS in the past five years.[6] In fact, these leases were sold only after an exhaustive environmental analysis. With a near 30-year history of drilling in the Arctic and Alaska that has made no discernable impact to the environment, the region's vast oil and gas resources can be developed responsibly.

While the federal government has an obligation to process the permits and allow companies to move forward with potential development after an offshore lease is awarded, the current regulatory system has become so overly complex that it has failed to issue all of the necessary permits required for Alaska offshore operations.

Moreover, lawsuits filed against the government on various technicalities regarding offshore exploration have kept offshore development, jobs and economic opportunity bottled-up in courts, preventing operations from moving forward. Given the unique environmental conditions of Arctic oil and gas production, the United States must develop and implement a stringent, consistent regulatory system specific to Arctic development. The current practice of regulating in response to legal challenges creates uncertainty for producers while failing to establish scientifically driven protections for the environment.

Considering the abundance of oil and natural gas resources in the Arctic and Alaska, Consumer Energy Alliance advocates that Congress:

- Insist that the Administration produce a robust and timely Five Year Program for OCS Development that includes Alaska;
- Recognize advancements in technology and make permitting for exploration and development consistent and reliable;
- Grant Alaska citizens and local communities the same monetary benefits of offshore oil and gas production that the citizens of the Gulf Coast enjoy; and
- Examine policies that would confer greater certainty regarding economic sovereignty in the Arctic region.

[4] Northern Economics & Institute of Social and Economic Research, University of Alaska, Anchorage, "Economic Analysis of Future Offshore Oil and Gas Development: Beaufort Sea, Chukchi Sea, and North Aleutian Basis," March 2009.
[5] Bureau of Ocean Energy Management, Regulation and Enforcement, "Alaska OCS Region: Detailed Leasing Activities," January 2011.
[6] Robert Peterson, Jim Craig, Kirk Sherwood and Lynn Aleshire, "Alaska's Arctic Offshore Activity," http://www.searchanddiscovery.com/documents/2010/70086peterson/ndx_peterson.pdf. Accessed January 2011.

Public Lands Access

Public lands hold great benefits for all Americans – from energy resources and a wide variety of recreational activities to ensuring the well-being of wildlife values and local communities.

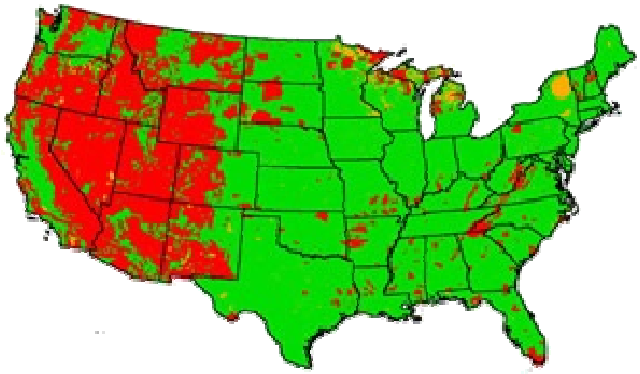
The United States has been shaped by the rich traditions and values associated with the proper stewardship of its land, including recognizing the agricultural, recreational, residential and commercial use of this vital resource. In fact, federal law clearly states that these resources are to be used for a multitude of purposes, including the right of all Americans to access and enjoy the land.

Federal lands contain abundant natural resources, including, and not limited to, oil, natural gas, minerals, coal, renewable energy and forests that can be responsibly developed to meet our expanding needs. According to the Bureau of Land Management (BLM), federal lands contain an estimated 30.5 billion barrels of oil and 231 trillion cubic feet of natural gas that is closed to production. Due to these limitations, oil and gas production on federal onshore lands only represents 5 and 11 percent of total domestic production, respectively.[1]

Unfortunately, though, the future of public lands remains in jeopardy due to increasing and more stringent restrictions associated with federal environmental and land use policies, regulations and laws. The federal government is now exploring various measures that would severely limit and even restrict access to public lands while prohibiting energy production and development on millions of acres of federal land.

Some examples include: the federal government's recent consideration of dozens of National Monument designations; proposals to designate new wilderness areas; and the designation of wild and scenic rivers that do not meet the true intent behind the law. Quite simply, the cumulative effect of these actions along with existing regulations and statutes would significantly limit our ability to take full advantage of public lands.

U.S. Federal and State Lands



*U.S. Geological Survey

[1] Bureau of Land Management, "Energy Facts: Onshore Federal Lands," 2005.

In fact, local communities, towns and hard-working families whose lives have been built upon the opportunity to access federal lands and waters – such as personal watercraft and snowmobile activities at Yellowstone to natural resource development in the Rocky Mountain States – would likely be harmed by restrictive land use management decisions that deny access to the land and their ability to make an honest living.

Given the value of our public lands, Consumer Energy Alliance advocates that Congress work with the Administration to:

- Take more action to restore traditional and lawful access to our public lands;
- Engage local citizens most directly affected by land use decisions and seek out their input, participation and support prior to any final decision making. This process should be deliberative and comprehensive while taking into account the environmental and economic assessments associated with any designation or land use management decision; and
- Prove good-faith consultation with key stakeholders groups and individuals who have either participated in the process or expressed interest in it while ensuring these same parties have been fully informed of the likely decision and impact.

Shale Gas Resources

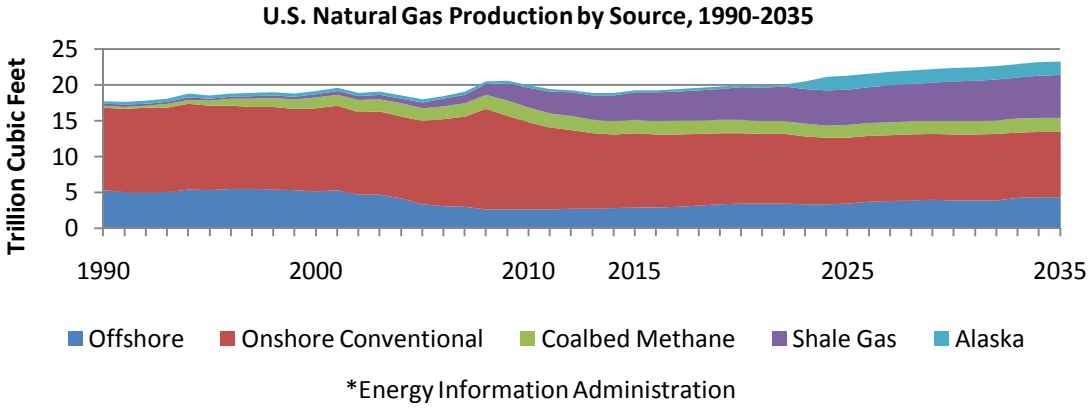
The innovation of hydraulic fracturing and horizontal drilling has dramatically expanded and deepened the geology and geography of the U.S. natural gas supply by developing unconventional natural gas deposits – a transformation that impacts the future of our nation's energy security, environment and economic growth. Shale gas formations, especially the Marcellus, Haynesville, Barnett and Fayetteville, can provide the United States with approximately 90 years worth of natural gas as well as create hundreds of thousands of jobs and billions in revenue.[1]

Though hydraulic fracturing occurs thousands of feet below the water table, fears about the possible hazards of increased drilling have led to intense public scrutiny and concerns about the safety of drinking water. In particular, the Environmental Protection Agency (EPA) has launched a study designed to investigate the relationship between hydraulic fracturing and drinking water.

Prior to the dramatic expansion of shale gas production, many perceived that onshore natural gas reserves in the United States were nearly tapped out. Now, the current mean estimate of recoverable shale gas is 650 trillion cubic feet (TcF) with low and high projections of 450 TcF and 870 TcF.[2] As the graph below illustrates, the expansion in U.S. natural gas production will be driven mostly by a four-fold increase in shale gas, which will offset a 31 percent decline in lower-48 conventional onshore production.[3]

Tapping into these vast resources requires horizontal drilling and hydraulic fracturing. Hydraulic fracturing – in use since the 1940s – pumps high volumes of a water, sand and additive mixture into shale formations thousands of feet below the earth's surface and aquifers in order to create fractures that allow trapped gas to be released. These various additives to the water-sand mixture permit the fracture to remain open and release trapped gas.

Despite the safety record of the technology, critics of hydraulic fracturing argue that the composition of chemicals in fracturing fluids has the potential to contaminate groundwater. Although no record of contamination as a result of hydraulic fracturing has been certified, the Department of the Interior, Environment and Related Agencies Appropriations Act of 2010 (Public Law 111-88) directed the EPA to carry



*Energy Information Administration

[1] Groundwater Protection Council, "Modern Shale Gas: Development in the United States." Prepared for the Department of Energy, 2009.
[2] Massachusetts Institute of Technology, "The Future of Natural Gas: An Interdisciplinary MIT Study," 2010.
[3] Energy Information Administration, *Annual Energy Outlook 2010.*

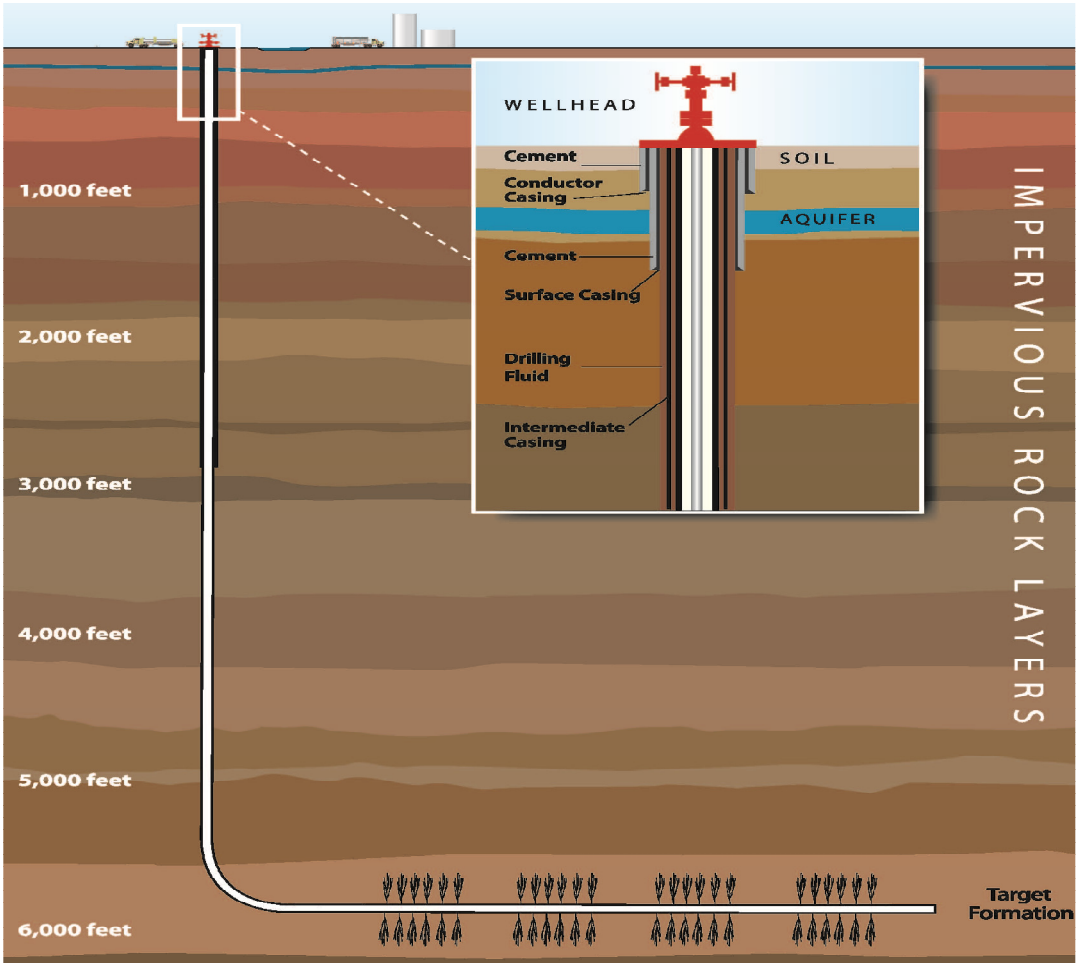
out a study on the relationship between hydraulic fracturing and drinking water. The study will not be completed until at least 2012, but already an attempt to federalize regulation of the practice under the Safe Drinking Water Act has been introduced in Congress.

CEA has continually echoed its belief that hydraulic fracturing should be regulated and held to the highest standards so that Americans can rely on safe, reliable drinking water. State regulators have enforced strict safety standards and helped the industry maintain a strong safety record. Due to specialized knowledge of the local geology, history and economy, state regulators possess the expertise necessary to oversee production whereas federal regulators may not be equally adept. As such, CEA supports continued oversight of natural gas development by state and regional authorities.

Given these imperatives, CEA recommends that Congress:

- Ensure the EPA study proceeds in an independent, scientific manner;
- Support continued state regulation of hydraulic fracturing and natural gas development as the proper authority to oversee these operations; and
- Recognize the vast economic and energy security potential that expanded shale gas development will have for U.S. consumers, manufacturers and utilities, while including its development in a comprehensive, balanced energy policy.

Groundwater Protection through Proper Well Construction

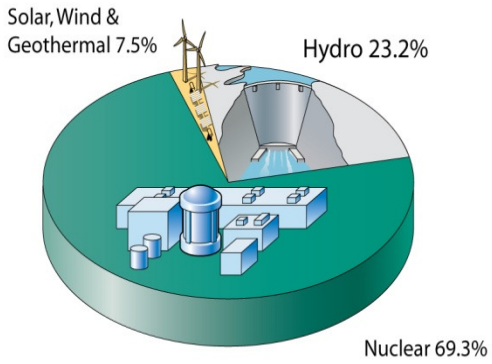


*American Petroleum Institute

Nuclear Power

Nuclear energy currently supplies 20.2 percent of the electricity in the United States from 104 commercial nuclear reactors that operate in 31 states.[1] This carbon-free source of energy is a safe, reliable and affordable source of electricity for consumers, and therefore, it must continue to play an important role in the U.S. energy mix.

Sources of Emission-Free Electricity: 2009



*Nuclear Energy Institute

Fortunately, the public perception of the safety and value of nuclear power is beginning to align with reality: in a 2009 survey, seven out of ten people favored the use of nuclear energy to produce electricity and 62 percent supported building new plants.[2] The nuclear industry maintains one of the strongest safety records including high standards for environmental protection and security of the facility. Furthermore, commercial nuclear facilities operate in an increasingly efficient manner helping to lower the cost of electricity for consumers.

Despite this, no new nuclear plant has been built in the United States since 1978, and the last new reactor to come online was in 1996. Only one unit in the United States is under construction – Watts Bar 2 in Tennessee – whereas sixty-four others are under construction globally, twenty-six in China alone.[3]

The Energy Information Administration (EIA) projects that U.S. electricity demand will grow by 21 percent by 2030, notwithstanding increased measures to conserve use. To meet this demand, the nuclear industry is working to expand its capacity, and the U.S. Nuclear Regulatory Commission (NRC) is currently reviewing plans from twelve companies that are seeking to construct 22 new plants.

However, the obstacles to construction of new plants are substantial: cost estimates for a new nuclear plant range from as low as $4 to $6 billion to as high as $10 to $14 billion, an extremely high price tag for most of the relatively small U.S. electric companies. To minimize the financial risk and support new construction, Congress included loan guarantees in the 2005 Energy Policy Act that authorized $18.5 billion for new nuclear facilities. Furthermore, the Obama Administration included $36 billion in additional loan guarantees in its 2011 budget request to Congress.

Since the Department of Energy (DOE) organized the loan guarantee program in 2008, it has received over $122 billion in requests for loan guarantees for 14 new nuclear plants.[4] Despite this, only $8.3 billion has been awarded for construction of two new reactors in Georgia.

In addition to the economic and political challenges in building new nuclear facilities, existing plants also could be jeopardized if the federal government requires expensive retrofitting or fails to adequately account for used fuel storage. In particular, pending Environmental Protection Agency (EPA) 316b water regulations could

[1] Energy Information Administration, "Nuclear Energy Overview," December 2010.
[2] Nuclear Energy Institute, "US, International Polls Show Strong Support for Nuclear," May 2009.
[3] Nuclear Energy Institute, "Nuclear Units Under Construction Worldwide," December 2010.
[4] Energy Information Administration, "Nuclear Energy Overview," December 2010.

require existing plants to construct cooling towers, costing billions of dollars and forcing plants to go offline for months, if not altogether. Furthermore, studies have verified that adding cooling towers will not substantially aid water quality nor enhance marine habitats.

Nuclear plants and private storage facilities currently manage the nation's spent fuel in a safe, secure manner. As the federal government develops a comprehensive federal storage program, private storage systems provide a viable, interim solution while designated federal storage and recycling programs advance.

As such, Consumer Energy Alliance believes additional measures should be taken to accelerate the construction of new plants and support continuing operations. In particular, the U.S. Congress must:

- Ensure loan guarantee approvals at DOE proceed in a thorough, yet expeditious, fashion;
- Increase the volume of loan guarantees as a means to boost production of new nuclear facilities;
- Establish policies that incentivize nuclear, renewable energy and facilities that utilize energy-efficient practices; and
- Ensure the Administration, particularly the DOE, EPA and the NRC, develop and administer regulations in a transparent, equitable manner that appropriately values the importance of nuclear energy.

Nuclear Units Under Construction Globally: 2010

Country	Number of Nuclear Units
Bulgaria	2
China	26
Finland	1
India	6
Japan	2
Russia	11
Slovak Republic	2
South Korea	5
Ukraine	2
United States	1

*Nuclear Energy Institute

Oil Sands, Oil Shale & Low-Carbon Fuel Standards

Recent advances in technology have enabled the development of oil sands and oil shale that were previously thought economically unrecoverable. Now, with vast North American reserves of both, the future of U.S. energy security looks much brighter – that is, if the political environment will support these game-changing sources of energy.

Oil Sands:

North American oil sands reserves have the potential to supply billions of barrels of oil to American consumers. In particular, Canada has 173 billion barrels of economically recoverable reserves, and the United States possesses 21 billion barrels of proven oil sands reserves.[1] Unbeknownst to many Americans, Canada is the largest foreign supplier of petroleum products to the United States, accounting for 20 percent of U.S. crude imports, nearly half of which are derived from oil sands.

This strong trading partnership between friendly neighbors bolsters U.S. energy security and helps support U.S. economic development. In fact, 343,000 new American jobs could be created between 2011 and 2015 as a result of increased investment and development of the oil sands.[2] Nearly every step of oil sands development – from extraction to refining – involves American goods or services, which help boost the world's largest trading partnership.

Oil Shale:

In the United States, oil shale deposits in the Western states have been estimated to contain more than two trillion barrels of oil, and through continuing research, new technologies will permit development of these resources in an environmentally responsible manner in the very near future.[3] In the 2005 Energy Policy Act, the federal government declared the strategic importance of oil shale and other unconventional fuels and instructed the Department of the Interior (DOI) and the Department of Energy (DOE) to create and implement programs aimed at oil shale research and development.

Oil Shale Deposits:
Western United States

*Geology.com

In spite of dictates from Congress, the DOE, specifically the Office of Petroleum Reserves, has failed to implement a commercial strategic fuel development program, even though it has established a Task Force and completed significant research. By all accounts, the DOE has begun to abandon further work on the development program despite the Task Force's initial report in 2006, which concluded that 800 billion barrels of American's oil shale resources could be developed economically and average production could reach 2.5 million barrels a day within 30 years.[4]

[1] "Canada's Oil Sands," http://canadasoilsands.ca/en/overview/index.aspx. Accessed December 2010.
[2] Canadian Energy Research Institute, "The Impact of Canadian Oil Sands Development on the United States Economy," October 2009.
[3] Task Force on Strategic Unconventional Fuels, "Development of America's Strategic Unconventional Fuels Resources," September 2006.
[4] Task Force on Strategic Unconventional Fuels, "Development of America's Strategic Unconventional Fuels Resources," September 2006.

Low-Carbon Fuel Standards:

Notwithstanding the immense benefits that oil sands and oil shale reserves can provide in terms of energy security, job creation and economic growth, both the federal government and several state governments have pursued policies to limit the use of petroleum products derived from these massive North American energy reserves.

In addition to efforts to block military procurement of fuels derived from unconventional fuels and attempts to block the permitting of pipelines that will carry petroleum derived from oil sands to U.S. markets, several policymakers have proposed to implement low-carbon fuel standards (LCFS) which would restrict the development or importation of unconventional fuels.

A low-carbon fuel standard would require retailers that sell high-carbon transportation fuels (i.e., gasoline and diesel) to either substitute low-carbon fuels such as biofuels, electricity or natural gas or purchase carbon credits. The LCFS program currently being implemented in California and other proposed programs in the Northeast, Mid-Atlantic and Midwest differentiates between crude oil sources by establishing a life-cycle carbon evaluation for the fuels, which discriminates against high-carbon-intensity crudes such as Canadian oil sands and oil shale.

Although proponents claim that an LCFS is a cost-effective way to reduce carbon emissions from the transportation sector, recent studies have concluded that current LCFS programs and proposals will substantially raise transportation fuel prices without producing any reductions in greenhouse gas (GHG) emissions.

By forcing traditional fuel retailers to purchase credits or stop selling into a given market, an LCFS would severely restrict the fuels that can be sold into the market resulting in fuel shortages. A study released by Charles Rivers Associates in June 2010 shows that a nationwide LCFS could raise gasoline, diesel and home heating oil prices by as much as 170 percent over 10 years and eliminate as many as 4.3 million jobs over 10 years.[5]

Furthermore, a study released this year by Barr Engineering Company concluded that an LCFS will not actually reduce global GHG emissions and could, in fact, even raise them due to fuel shuffling.[6] Fuel shuffling arises when a state or region can no longer use fuels derived from one source and must import replacement fuels from a different sources. Because oil markets are global, these displaced fuels are simply transported to other regions– not taken out of the market.

Due to the benefits of expanded unconventional fuel development, CEA recommends Congress support unconventional fuels and:

- Prevent the enactment of a federal-, regional- or state-level low-carbon fuel standard and support GHG-reduction policies that do not discriminate against unconventional energy resources;
- Promote vigorous implementation of existing federal law to increase research and development of unconventional fuels including oil shale and oil sands;
- Advocate for legislation and regulation that will provide a framework for responsible development of unconventional fuels; and
- Enact federal legislation that will preempt any state standards that would directly or indirectly prohibit or limit the development of unconventional resources.

[5] Charles River Associates, "Economic and Energy Impacts Resulting from a National Low-Carbon Fuel Standard," Commissioned by Consumer Energy Alliance, June 2010.

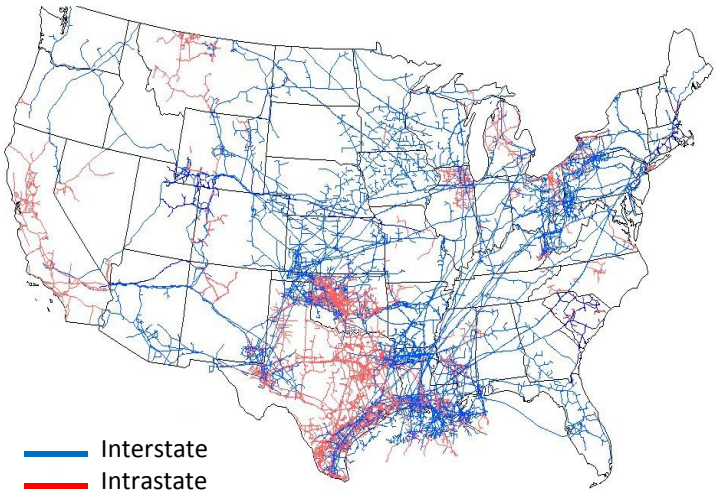
[6] Barr Engineering Company, "Low-Carbon Fuel Standard "Crude Shuffle" Greenhouse Gas Impacts Analysis," Commissioned by the National Petrochemicals and Refiners Assoc June 2010.

Pipelines

Pipelines are the safest, most reliable, economical and environmentally favorable way to transport oil and petroleum products, natural gas and chemicals throughout the United States. America depends on a network of more than 170,000 miles of liquid pipelines and 305,000 miles of natural gas transmission lines to safely and efficiently move energy to fuel the U.S. economy.[1]

America's liquid pipelines carry more than 17 percent of freight moved domestically, yet pipelines account for only two percent of the country's freight bill.[2] This critical infrastructure provides low and predictable prices for pipeline customers – where only 2.5 cents of the cost of a gallon of gasoline to an end-user can be attributed to pipeline transportation.

U.S. Natural Gas Pipeline Network



*Energy Information Administration

Pipeline operators invest millions of dollars annually to maintain their pipelines and comply with federal pipeline safety laws and regulations. From 2004-2009, large liquid pipeline operators reported spending $2.7 billion on pipeline integrity management activities and $600 million on integrity management related to pipeline-owned tankage and storage. Due to these efforts, the frequency of releases from liquid pipelines decreased 63 percent from 2001-2008 and the number of barrels released per thousand miles declined by 48 percent over that same time period.[3]

In order to prevent accidental damages to underground pipelines, policymakers must encourage stronger state pipeline damage prevention laws, as well as strengthen both state and national programs already in place. For instance, states should not be allowed to exempt their agencies and municipalities from following requirements to use the national "Call Before You Dig Number - 811" before they undertake excavation activities. These exemptions create a gap in enforcement and safety because the threat of pipeline damage from excavation is the same regardless of the entity engaged in the digging.

With pressure from refiners, truckers and consumers to keep transportation costs for fuel low, pipeline operators need to be able to rank risk and consequence when maintaining pipeline systems and apply finite resources accordingly. Imposing prescriptive federal mandates, such as expanding integrity management plan requirements beyond High Consequence Areas (population centers, navigable waterways and areas unusually sensitive to environmental damage), could imperil the appropriate risk-based focus on protecting people and the environment.

[1] Energy Information Administration.
[2] Association of Oil Pipe Lines, "About Pipelines," December 2010.
[3] Association of Oil Pipe Lines, "Pipeline Safety," December 2010.

Finally, Congress must continue to foster and maintain an environment that will attract capital for much needed energy infrastructure to meet growing future demand. New pipeline proposals, such as the Keystone XL Pipeline, will help boost North American energy security, create thousands of jobs, supply American refineries with crude oil and play a critical role in meeting future energy demand. Policymakers should resist efforts to further delay and complicate federal permitting regimes and push the Administration to grant permits for vital infrastructure projects such as the Keystone XL Pipeline.

In order to protect and grow this vital infrastructure, Consumer Energy Alliance urges Congress to pursue the following policy options:

- Support the pipeline industry's high standards for safety and maintenance and avoid duplicative, burdensome regulations that may conflict with current practices;
- Ensure the progression of additional pipeline and expanded pipeline capacity continues in order to meet rising consumer demands; and
- Maintain equitable taxation rates on the transport of fuels via pipeline with the understanding that pipelines are the safest and most affordable form of fuel transport.

Proposed Keystone XL Pipeline

*Pipelines International

Downstream & Refining

America's oil and natural gas community employs 1.9 million people directly, with millions of additional jobs indirectly supported via use and production of petrochemicals, refined products and other components and feedstocks produced by the oil and natural gas sector. The refining and petrochemical sectors represent a good portion of that workforce with nearly two million American jobs supported by these industries.[1] Today, U.S. refining capacity is at 17.6 million barrels per day, consisting of 9 million barrels of gasoline, 4 million barrels of fuel oil, 1.4 million barrels of jet fuel and 3.4 million barrels of petroleum products.[2]

Currently, the U.S. refining industry faces significant financial and market forces that jeopardize the industry's health and, more importantly, price stability for American consumers. Since refiners buy from the open oil market, they are the first group impacted by volatile crude prices. As such, the industry's profitability rate fluctuates dramatically with the rate of return on investment lagging behind other U.S. manufacturing and oil and gas sectors.

Notwithstanding these hurdles, the industry has invested significantly to ensure operations proceed in an environmentally conscious manner. For instance, refiners spent $47.7 billion between 1995 and 2004 to comply with environmental emissions regulations. In addition, the industry has increased the efficiency of its operations tremendously – allowing refiners to expand capacity by 255 million barrels a year since 2004.[3]

Although no new commercial refinery has been built in the United States in over 30 years, refiners have met shifting consumer demand despite ever-present financial and regulatory hurdles. As the economy recovers, refiners will likely struggle to meet demand, as they have in the past during times of economic prosperity and periods of high energy consumption. Consumer Energy Alliance believes in the importance of raising awareness about the need for access to affordable, reliable petroleum and petroleum products. A partial list of goods made from petroleum includes: heart valves, food preservatives, fertilizer, surf boards, panty hose, footballs, candles, shoe polish, lipstick, crayons, shaving cream and shampoo, among hundreds of other consumer products.

Consumer Energy Alliance recommends the following policy options to allow refiners to continue serving consumers effectively:

- Understand that additional regulations may hinder domestic petroleum manufacturing without producing any positive effects for the environment or public health;
- Acknowledge that petroleum will be the main source of transportation fuel for decades to come until alternative fuels are proven functionally and economically viable;
- Ensure equitable credit access and avoid additional taxation on refiners as a means to stabilize current production levels and increase future capacity; and
- Incentivize the expansion of the U.S. petrochemical industry as a means to create high-paying American jobs and ensure America's competitiveness in this global industry.

[1] Bureau of Labor Statistics.
[2] National Petrochemical and Refiners Association, "Today's Petrochemical and Refining Industry: A Foundation of the American Economy," 2010.
[3] National Petrochemical and Refiners Association, "Today's Petrochemical and Refining Industry: A Foundation of the American Economy," 2010.

With an appropriate mix of federal incentives and decreased production costs, wind is now a viable source of power generation that has the capacity to complement existing conventional and renewable electricity generation. As the graph below illustrates, the U.S. wind industry installed nearly 10,000 megawatts of new generating capacity in 2009, breaking all previous records.

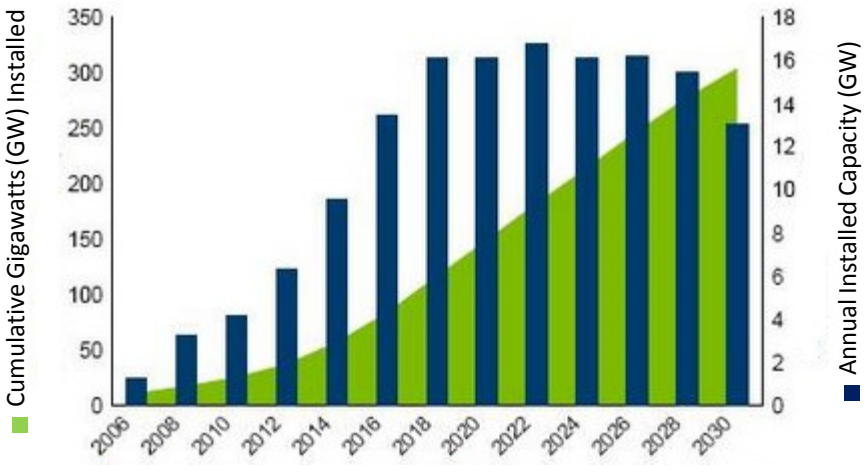
In the very near future, overall U.S. wind production may be augmented by growing offshore wind operations. Though U.S. offshore wind development remains in its infancy, the possibility for its expansion is enormous. With current technology, offshore wind turbines can be anchored in water at depths fewer than 60 meters. In particular, shallow waters along the Eastern Gulf of Mexico and in the Atlantic are ideal for expanded offshore wind. Additional seismic testing of these areas and increased onshore transmission capabilities will facilitate increased offshore wind generation and help provide clean power to these densely populated coastal regions.

Despite the potential for greater onshore and offshore wind generation, the pace of expansion slowed in 2010 due to increasing uncertainty about long-term incentives. In 2010, the 111th Congress authorized a one-year extension of a 30 percent investment tax credit for renewable energy projects – initially included under the American Recovery and Reinvestment Act. Although these incentives have been temporarily expanded, Congress should examine ways to boost the long-term incentives for the U.S. wind industry and embrace efforts to support offshore wind development.

To support further growth and development of wind energy resources, Consumer Energy Alliance recommends that Congress:

- Provide a longer-term certainty of the onshore and offshore legislative and regulatory structure, particularly long-term financial incentives;
- Support accelerated permitting for offshore wind projects and the onshore transmission terminals that will allow electricity to get to market; and
- Ensure that seismic testing proceeds in areas of the Atlantic and Gulf of Mexico that can be potential areas for wind turbine farms.

Annual and Cumulative Wind Installations Projected by 2030



*American Wind Energy Association

Renewable & Alternative Fuels

Renewable Fuels:

Nationally, ethanol and biodiesel production have exploded in recent years – in 2009 alone, ethanol production in the United States increased 14 percent to an estimated 10.6 billion gallons.[1] Furthermore, domestic production of biodiesel has increased significantly over the past few years, decreasing the dependence on European imports.

The growth of the biofuels industry has had a tremendous impact on the rural economy – adding $47.6 billion to the nation's GDP and supporting the creation of 238,541 jobs in all sectors of the economy in 2007.[2]

In December 2007, Congress passed the Energy Independence and Security Act (EISA) of 2007 (Public Law 110-140), dramatically increasing the renewable fuels standard first enacted in 2005 from 7.5 billion gallons to 36 billion gallons of renewable fuel by 2022.[3] In order to implement this expanded mandate, the Environmental Protection Agency (EPA) finalized the Renewable Fuels Standard 2 (RFS 2) regulations in 2009.

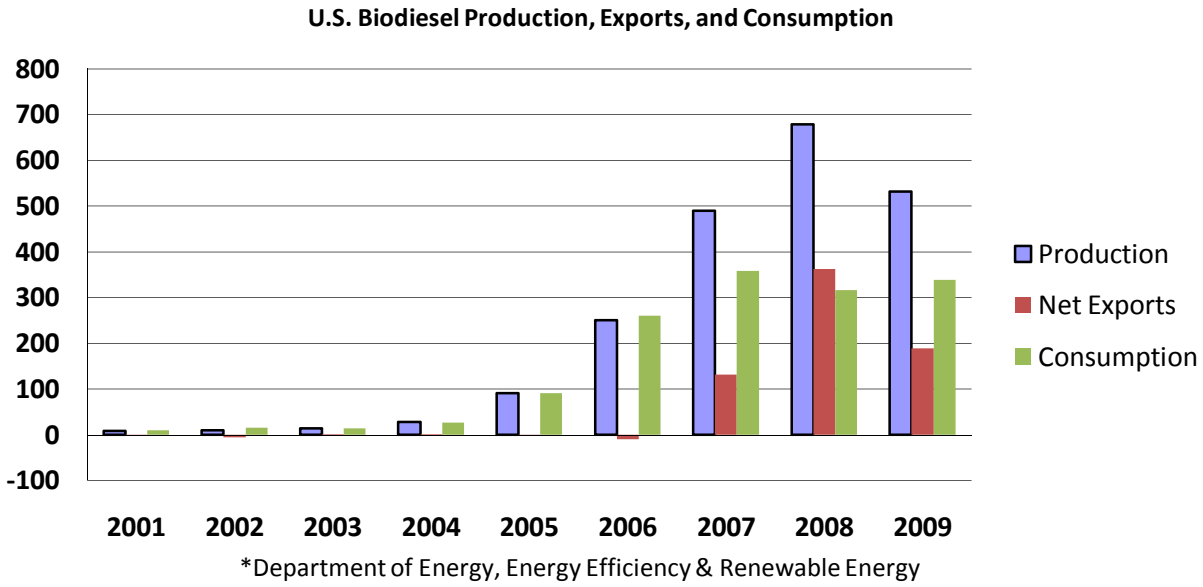
Because the renewable fuels requirements set forth in EISA will require the blending and sale of ethanol blends higher than 10 percent (E-10), policymakers, federal regulators and stakeholders have had to consider the introduction of mid-level ethanol blends into the fuel pool, raising significant logistical and regulatory issues that need to be carefully considered. In 2010, EPA partially granted a request to declare gasoline containing 15 percent (E-15) substantially similar to accepted fuels – allowing the fuel to be used in cars made since 2006 but not in cars made prior to that date. In order to sell E-15 under this split regime, fuel retailers will need to retrofit storage tanks and dispensers to segregate E-10 and E-15 fuels in order to accommodate varying model-year cars.

Moreover, several important regulatory hurdles must be overcome at both federal and state levels to facilitate the introduction of mid-level ethanol blends, including: the certification of gasoline pumps and in-ground storage tanks; the completion of EPA and Department of Transportation (DOT) testing to determine that the fuel is safe in all vehicles; and changes in state fuel regulations. In addition, Congress should address the liability concerns that will be raised in moving from an E-10 to an E-15 blend.

Issues have also arisen from the biodiesel blending requirements set forth in EISA, which mandate the use of at least one billion gallons of biodiesel beginning in 2012. Because of the high costs of biodiesel feedstocks, which have risen dramatically in recent years, many biorefiners have shut down their operations and some fuel blenders have expressed concerns about obtaining biodiesel supplies.

In addition to the ethanol and biodiesel blending requirements, EISA also mandates increasing levels of advanced biofuels – such as renewable diesel and cellulosic ethanol. In response to President George W. Bush's *Advanced Energy Initiative* of 2006, the Department of Energy (DOE) announced a $1 billion investment in the research, development and deployment of advanced biofuel technologies. Specifically, the DOE aims to leverage private-sector and interagency collaboration to advance a better understanding of the viability of first-, second- and third-generation feedstocks. Government programs such as this and other policies that provide research and development grants, loan guarantees, tax incentives and support for the construction of biorefineries and reduction of feedstock costs will be increasingly important if these technologies are going to be brought online in compliance with the EISA timeline.

[1] Renewable Fuels Association, "Contribution of the Ethanol Industry to the Economy of the United States," February 2010.
[2] American Coalition for Ethanol.
[3] Department of Energy, Energy Efficiency & Renewable Energy, "Energy Independence and Security Act (EISA)," http://www1.eere.energy.gov/femp/pdfs/eisa_femp.pdf. Accessed November 2008.
[4] Biomass Research and Development Board, "National Biofuels Action Plan," October 2008.



*Department of Energy, Energy Efficiency & Renewable Energy

Alternative Fuels:

In addition to renewable fuels, traditional sources of energy in addition to crude oil can be transformed into transportation fuels, helping diversify the supply mix. State-of-the-art technology exists for developing synthetic fuels from coal, natural gas and biomass to produce a clear, clean liquid for use primarily as diesel or jet fuel. These synthetic fuels can utilize current infrastructure, and conventional vehicle and jet engines will not require retro-fitting.

In particular, gas-to-liquids (GTL) fuel includes GTL diesel, naphtha, liquefied petroleum gas (LPG), jet fuel and chemical feedstocks. The GTL production process is based on Fischer-Tropsch (FT) technology which has been in commercial use for over fifty years. GTL facilities exist today in Qatar and Malaysia and new facilities are currently under construction in Qatar and Nigeria.

GTL is a cleaner burning fuel that could offer significant environmental benefits. In fact, GTL fuels are virtually free of sulfur and aromatic compounds, and their use in transportation could reduce emissions of particulates, nitrogen oxides, carbon monoxide and other pollutants.

By more fully utilizing our domestic energy resources and integrating alternative fuels into the supply, the United States can diversify its energy sources, reduce petroleum imports, increase U.S. energy security and create jobs.

Given the important role alternative and renewable fuels will play in the U.S. energy future, Consumer Energy Alliance recommends that Congress:

- Address the issues that have been raised concerning mid-level ethanol blends by pushing the completion of studies by EPA and DOT regarding the safety of using E-15 in all model year vehicles;
- Acknowledge the potential shortage in biodiesel supply and create greater flexibility in the RFS 2 program that would allow EPA to waive blending requirements if the volume of biodiesel needed to meet the blending requirements is not domestically produced on an annual basis;
- Ensure that state and federal governments have adequate resources to verify the quality of renewable fuels in the marketplace;
- Support policies that foster the growth of advanced biofuels such as cellulosic ethanol and renewable diesel through research and development grants, loan guarantees, tax incentives and support for the construction of biorefineries and the reduction of feedstock costs; and
- Ensure alternative fuels such as GTL receive adequate support and incentives to continue research and development for future production and use in the United States.

Solar

Though solar energy currently provides less than 0.1 percent of the electricity produced in the United States, the Department of Energy (DOE) cites a report projecting that solar power could contribute up to 10 percent of the nation's power generation by 2025.[1]

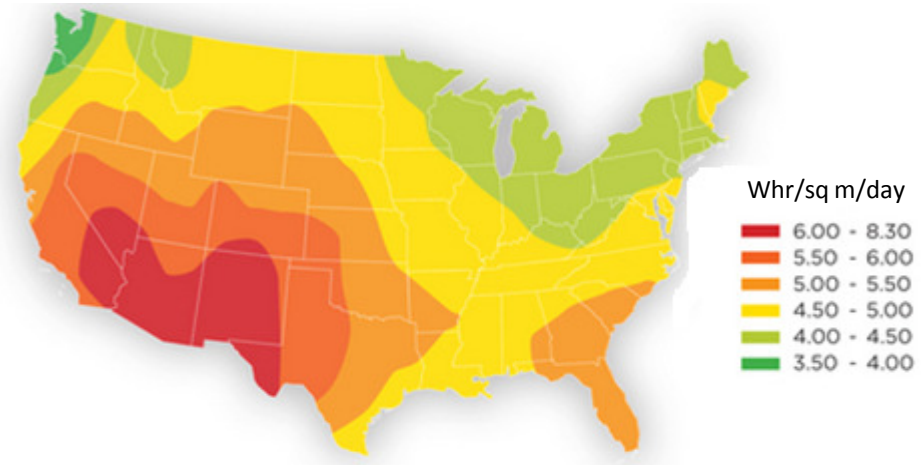
In fact, production of solar power has rapidly increased in the past eight years, with domestic sales of photovoltaic cells and modules increasing 24-fold between 1999 and 2008.[2] Concurrently, the cost per kilowatt-hour of solar photovoltaic systems has been steadily dropping, and projections estimate that solar power will reach cost parity with more traditional power sources in select U.S. markets by 2015.[3]

While the economic, policy and technological outlook for increased solar power development in the United States looks promising, there are real and significant challenges toward realizing the full potential for growth in solar power including transmission issues, continued evolution of commercial solar technology and project siting concerns.

Consumer Energy Alliance recommends the following policy options to promote further growth and development of solar energy resources:

- Create longer-term solar energy legislative and regulatory structures to stabilize the market and help generate additional financial support and structure;
- Support research and development that seeks to enhance solar power capacity, facilitate more seamless integration to connect solar power to the grid and create more user-friendly technologies;
- Facilitate additional public-private cooperation to ensure the adequate development of solar power transmission lines to meet the expanding energy needs of all regions; and
- Streamline the permitting processes to encourage the creation of new solar energy production facilities.

U.S. Solar Resource Potential



*Department of Energy, National Renewable Energy Laboratory

[1] Department of Energy, Energy Efficiency & Renewable Energy, "Study: Solar Power Could Provide 10% of U.S. Electricity by 2025." Accessed November 2008.
[2] Bureau of Labor and Statistics.
[3] Department of Energy, Energy Efficiency & Renewable Energy, "Study: Solar Power Could Provide 10% of U.S. Electricity by 2025." Accessed November 2008.

Carbon Capture and Storage

Carbon capture and storage (CCS) represents one of the most advanced technological solutions currently in development to mitigate carbon dioxide (CO_2) emissions, which is a primary greenhouse gas (GHG). CCS is the process of capturing carbon dioxide from power plants and other industrial facilities, transporting it to suitable locations, injecting it under deep underground geological formations and monitoring its behavior.

In the United States, technical, financial and political hurdles have stymied the pace of its development and deployment to date. However, with proper federal initiatives and private-sector collaboration, CCS can play an integral role in reducing U.S. carbon emissions, particularly from coal-fired power facilities and energy-intensive industrial plants.

Due in part to the lack of commercially deployable technology and a comprehensive federal and state policy framework, a viable CCS system has not been implemented at a large-scale facility in the United States. However, the federal government and private sector are advancing proactive solutions toward bringing CCS into the mainstream.

In February 2010, President Obama established the Interagency Task Force on Carbon Capture and Storage to evaluate how to overcome chronic barriers to CCS. In August 2010, the Task Force concluded that greater regulatory and legal clarity as well as project funding and other assistance for technology development would help the expansion of CCS. Already, the Department of Energy's (DOE) support will help up to ten integrated CCS demonstration projects become operational by 2016.[1] Expanding targeted federal support will boost the number and effectiveness of CCS operations.
In the private sector, efforts such as Shell's collaboration with Chevron and Marathon in Alberta, Canada, demonstrate the capacity and innovation of private-sector CCS initiatives. Quest, the Shell-Chevron-Marathon venture, will capture and store carbon produced during crude bitumen refining at the Shell Scotford Upgrader oil sands facility. Shell projects this CCS to be operational in 2015 with the capacity to permanently store over one million tons of CO_2 annually under impermeable geological formations.[2]

With the growing emphasis on the need to mitigate carbon emissions, CCS should be supported as part of a balanced energy policy. The obstacles to full commercial utilization remain very high, but Consumer Energy Alliance believes Congress can take active measures to facilitate the deployment and efficacy of CCS including:

- Support for private-public collaboration on technology development, CSS deployment and sequestration monitoring;
- Establish a clear, long-term legal and regulatory framework conducive to developing a business case scenario for Carbon Capture and Storage; and
- Institute standards and methods to govern the accounting of greenhouse gases stored in CCS projects.

[1] Report of the Interagency Task Force on Carbon Capture and Storage, August 2010.
[2] http://www-static.shell.com/static/investor/downloads/news_and_library/quest_ccs_project_overview.pdf. Accessed December 2010.

Energy Efficiency, Conservation & Sustainability

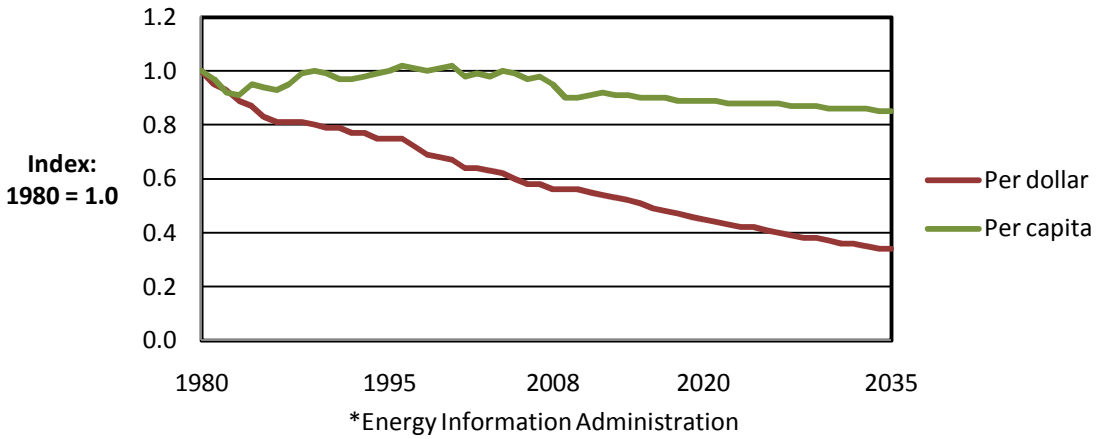
As America looks to stabilize energy prices and enhance its energy security, implementing sustainable practices can be an important tool to meet the expanding needs of society. Sustainable practices extend beyond environmental stewardship. In fact, the private and public sectors have demonstrated that energy efficiency and conservation practices produce significant cost savings for consumers and make American businesses more competitive globally. In the next two decades, U.S. energy consumption is anticipated to rise by 14 percent while global demand will increase by 49 percent.[1] As supplies tighten and global demand rises, the United States must embrace an "all-of-the-above" plan, including utilizing sustainable practices to ensure efficient use of energy and other natural resources.

In spite of projected higher demand due to population increases, the Energy Information Administration (EIA) estimates that per capita use of energy as well as energy use per dollar of GDP will decline dramatically. With advances in energy-efficient technology, structural efficiency improvements and changes in consumer behavior, per capita energy use will decline by 0.3 percent per year to 293 million Btu in 2035, as demonstrated in the graph below. In comparison, the 2009 average – which represented the lowest per capita use since 1968 due mostly to the economic recession – was 310 million Btu per person. Increased efficiency standards for vehicles and lighting will account for the initial gains while greater use of energy-efficient appliances, building materials and efficiency measures in energy-intensive industries will create savings over the long-term.[2]

In 2010, CEA published its *Sustainability Report 2010: Private Sector Leadership in Energy Efficiency, Conservation & Sustainability* in conjunction with a Capitol Hill Sustainability Forum. The principal conclusions underscored how private sector initiatives – most with little or no government incentive – successfully and proactively saved energy, provided consumers and businesses with the tools to lower their energy costs and further protected the environment.

As the federal government continues to develop and enact policies to advance an "all-of-the-above" energy approach, it must recognize the value of energy-efficiency technologies, policies and practices

Energy Use Per Capita and Per Dollar of GDP: 1980-2035



*Energy Information Administration

[1] Energy Information Administration, *Energy Outlook 2010.*
[2] Energy Information Administration, *Energy Outlook 2010.*

through tax credits, rebates, public-private partnerships, realistic efficiency standards and targets and other incentives.

Given the environmental and financial benefits of efficient energy use, Consumer Energy Alliance recommends the federal government take the following actions to encourage greater energy efficiency, conservation and sustainability:

- Create and expand public-private partnerships to make energy efficiency and conservation more accessible and affordable for consumers;
- Increase commercial and residential efficiency standards while giving strong support through fully funded tax credits, rebate programs and additional measures;
- Ensure the private sector receives proper resources to research, develop and market products aimed at expanding sustainability;
- Support regional and state efforts that augment federal energy efficiency programs; and
- Increase resources for consumer education conservation initiatives.

Combined Heat and Power

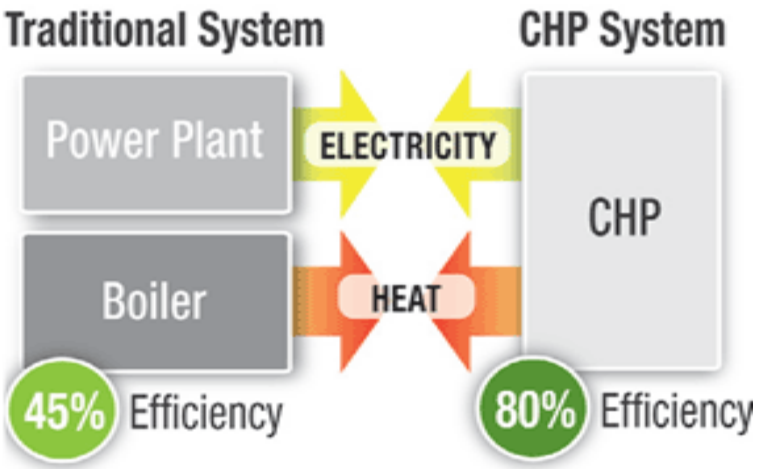
Combined heat and power systems (CHP) – sometimes called cogeneration systems – generate electricity and thermal energy in a single, integrated system. Rather than a single technology, CHP systems use a variety of fuels to provide reliable electricity, thermal power and mechanical power for factories, hospitals, commercial buildings and college campuses. Because they are utilized as on-site power sources, CHP systems may lower demand on the electrical grid, reduce reliance on traditional energy supplies, lower business costs and reduce emissions of both criteria pollutants and greenhouse gases (GHGs).

By recovering and utilizing heat that is typically wasted in traditional electricity generation, CHP systems are more energy-efficient than separate electricity generation and thermal production. CHP systems also produce energy savings by eliminating the electricity losses that normally occur in the transmission and distribution of electricity from a power plant to a user because they are located at or near the point of use.

CHP systems are currently installed at more than 3,500 commercial, industrial and institutional facilities nationwide and provide approximately 85 gigawatts (GW) of capacity – or almost nine percent of the electricity currently consumed in the United States. In 2006, CHP systems produced 506 billion kilowatt-hours of electricity – accounting for more than 12 percent of electricity generated.[1]

Although CHP systems have been utilized effectively for decades, most experts agree that it is an underutilized technology that can, if expanded, help meet future U.S. energy demands and provide significant benefits, including enhanced energy efficiency, energy security and environmental protection. According to a recent study by the Oak Ridge National Laboratory:

CHP Process Flow Diagram



*Department of Energy, Energy Efficiency & Renewable Energy

[1] Oak Ridge National Laboratory, Department of Energy, "Combined Heat and Power: Effective Energy Solutions for a Sustainable Future," December 2008.

If the United States adopted high-deployment policies to achieve 20 percent of generation capacity from CHP by 2030, it could save an estimated 5.3 quadrillion Btu (Quads) of fuel annually – the equivalent of nearly half the total energy currently consumed by U.S. households. Cumulatively through 2030, such policies could also generate $234 billion in new investments and create nearly one million new highly-skilled, technical jobs through the United States. CO_2 emissions could be reduced by more than 800 million metric tons (MMT) per year, the equivalent of taking more than half of the current passenger vehicles in the United States off the road. In this 20 percent scenario, over 60 percent of the projected increase in CO_2 emissions between now and 2030 could be avoided.[2]

However, there are substantial barriers that need to be overcome – on both federal and state levels – before CHP development can advance at such an aggressive pace, including technology limitations, regulatory ambiguity, environmental permitting challenges and interconnection hurdles.

In order to facilitate the development of CHP systems, Consumer Energy Alliance recommends that Congress support policies to:

- Provide incentives for capital investment in CHP systems and production tax credits for energy generated by CHP systems;
- Ensure low-cost financing for CHP projects through loan guarantees;
- Modify air permitting rules to accurately reflect CHP air-emission benefits and encourage greater CHP development;
- Continue efforts by the Department of Energy (DOE) and other agencies to provide education and outreach to increase public awareness of CHP opportunities and benefits; and
- Facilitate interconnection of CHP systems.

[2] Oak Ridge National Laboratory, Department of Energy, "Combined Heat and Power: Effective Energy Solutions for a Sustainable Future," December 2008.

Rare Earth Elements

As the United States seeks to diversify its energy supply by investing in clean-energy technologies to build solar cells, wind turbines, electric cars and energy-efficient lighting, it will need to ensure responsible access to rare earth elements for their production.

Rare earth elements (REEs) are metals which are critical to making components of clean-energy machinery, including wind turbines, electric vehicles, solar cells and energy-efficient lighting. The most important of these are dysprosium, neodymium, terbium, europium, yttrium and indium.[1] These materials also have important applications in producing computers, televisions, cell phones and military equipment.

Although REEs can be found in the United States, Canada and Australia, the vast majority – approximately 95 percent – of these metals are produced in China. This production disparity exists despite the fact that the U.S. Geological Survey estimates that 13 million metric tons of domestic REE reserves exist within known deposits across states.[2]

The current U.S. dependence on China for its source of REEs leaves the nation vulnerable to supply shocks, particularly as China has already cut back exports and is currently considering imposing further decreases in export quotas.[3]

If the United States wishes to implement an "all-of-the-above" energy strategy, create jobs and protect its energy security, then domestic access to REEs required for clean-energy technologies must be a national priority. With an abundance of domestic REE reserves, and the development of new technologies that enable the production of these resources in an environmentally

Rare Earth Elements in the Toyota Prius

*Green Car Advisor

[1] Department of Energy, "2010 Critical Materials Strategy Summary," December 2010.
[2] Geological Survey, "The Principal Rare Earth Elements Deposits of the United States—A Summary of Domestic Deposits and a Global Perspective," http://pubs.usgs.gov/sir/2010/5220/. Accessed January 2011.
[3] The Wall Street Journal, "China Considers Further Rare-Earth Quotas," December 29, 2010.

responsible manner, the United States stands ready to be a global leader in the types of technologies that rely upon these rare earth components.

In order to foster responsible domestic development of REEs, Consumer Energy Alliance recommends the following policies:

- Encourage private-sector involvement in REE production as a means to improve the ability to find, extract, process and use REEs more effectively and in an environmentally responsible manner;
- Ensure thoughtful domestic access to REEs in the United States to enable a stable supply and decrease U.S. dependence on Chinese imports of REEs; and
- Enact legislation and regulations that will ensure the responsible and safe development of domestic REEs.

Energy Workforce Education

Over the past 50 years, the United States has led the world in science, engineering and technology, particularly in the field of energy. Yet, current trends show a weakening in U.S. energy, petroleum, mining and mineral engineering education and research, putting the future of the U.S. energy workforce at risk. But this is not only a fossil fuel issue, as the skill sets learned at these institutions are pivotal for developing new energy sources as well as traditional sources.

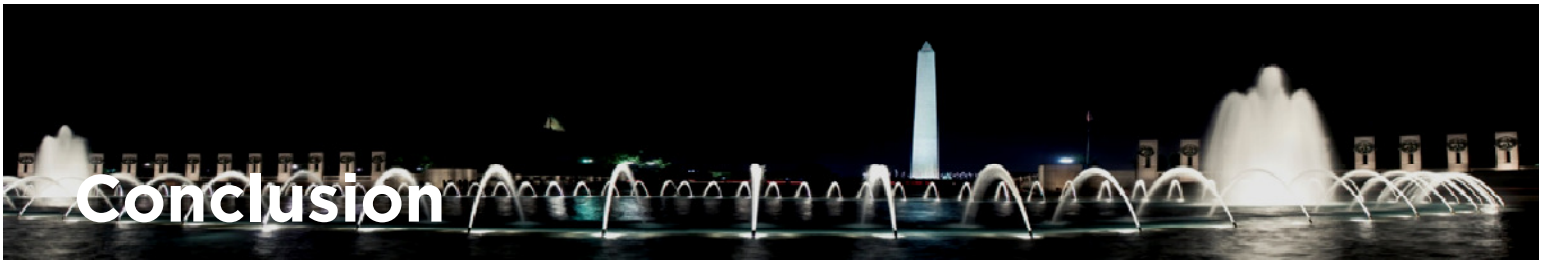
There are only 30 energy education programs in the country today – down from almost 60 in 1983.[1] The United States has seen a 90 percent drop in the number of petroleum engineering and geosciences graduates since 1982.[2] Almost half of the mining and petroleum faculty at U.S. higher learning facilities are age 50 or older, while only 12.5 percent are under age 35.[3] A decline in graduates and the aging of the faculty could result in a serious shortage of teaching and research staff as well as a lack of new talent to replace the active engineers and geologists who plan to retire in the next 10 years.

The potential loss of institutional knowledge and a lack of qualified students, faculty and energy professionals hinder the ability to develop new energy resources and technologies and to maintain the human capital necessary for economic, energy and mineral security. With the demand for energy on the rise, it is vital that we act to rebuild the nation's educational and research infrastructure.

Consumer Energy Alliance recommends the following policy options to boost energy education and workforce development in the United States:

- Provide assistance for energy-related science and technology programs and educational institutions to ensure the continued existence of graduates and research in energy, petroleum, mining and mineral engineering;
- Establish programs with specified research goals and eligibility requirements, and encourage programs in minority-serving institutions;
- Provide assistance to private-sector initiatives that work with local universities and community colleges to produce new graduates for the energy sector; and
- Direct aid to community, tribal colleges and secondary schools for non-degree programs, technical training and apprentice training for oilfield, mine, alternative energy and carbon storage training.

[1] Lloyd R. Heinze, Texas Tech University, "Education & the Big Crew Change," Presentation to SPE ATC&E, Denver, January 2004.
[2] The Talent Crisis in Upstream Oil & Gas: Strategies to Attract and Engage Generation Y," A Deloitte Research Study, 2005.
[3] Marco Einaudi, Department of Geological and Environmental Sciences, Stanford University, "Future of Economic Geology in Academia," Presentation to Geol. Soc. America Ann. Meeting, Seattle, October 1994.



Conclusion

To meet the energy challenges facing the nation and its consumers, Consumer Energy Alliance seeks a reasonable, more robust energy policy that ensures a proper balance between the use of traditional sources, the development of alternatives and improved energy efficiency and conservation.

It is time that our national energy policy allows for the responsible development of all available energy resources in order to provide long-term price stability for consumers, enhanced energy and economic security and a consistent regulatory environment for producers.

CEA is dedicated to working with the 112th Congress and the Administration, as well as consumers, small businesses, manufacturers, agricultural groups and energy producers, to improve the national dialogue and maintain an open and honest discussion about the direction of our energy policy and the implications of legislation that does not include all available resources from both traditional and non-traditional energy sectors.