

**Committee on Science, Space, & Technology  
United States House of Representatives**

**"Tapping America's Unconventional Oil Resources for Job Creation and  
Affordable Domestic Energy: Technology & Policy Pathways"**

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Thank you, Chairman Hall, Ranking Member Johnson, and members of the Committee. I am Karen Harbert, President and CEO of the Institute for 21st Century Energy (Institute), an affiliate of the U.S. Chamber of Commerce. The U.S. Chamber of Commerce is the world's largest business federation, representing the interests of more than three million businesses and organizations of every size, sector and region.

The mission of the Institute is to unify policymakers, regulators, business leaders, and the American public behind common sense energy strategy to help keep America secure, prosperous, and clean. In that regard we hope to be of service to this Committee, this Congress as a whole, and the administration.

I appreciate this opportunity to discuss an issue area that gets very little coverage in the public policy debate, the potential benefits and the existing obstacles to greater development of the nation's vast unconventional oil and natural gas resources. There has been much discussion about America's oil reserves recently, but rarely does it accurately capture the full extent of our resources. The country's unconventional oil resources are some of, if not the largest the world and one of the single greatest assets we as Americans possess.

We have hundreds of years of oil supply stored in unconventional formations in the United States. In fact, the three states of Colorado, Wyoming and Utah alone contain more oil from oil shale than all of the conventional oil contained in the Middle East. This resource is so vast that when made commercial, it has the real potential to completely alter the global oil markets and secure America's energy future at the same time. Yet it is the current policy of our government to ignore the value of these resources, sacrificing the revenue, jobs and huge security dividends Americans would realize from developing them.

## **Historical Context**

After the Arab oil embargo, the price of a barrel of oil almost doubled between 1973 and 1974. By 1980, the price of oil had increased more than tenfold since 1972. In response, the United States, along with most of the Western world, reshuffled its energy policy with a focus on weaning itself off imported oil to insulate it from another supply disruption. Efforts were made by the Department of Energy and private industry to begin a Research and Development (R&D) program to foster technology that could economically produce our unconventional oil resources, primarily focused on our vast oil shale deposits. Canada began similar programs to develop its huge supply of oil sands in Alberta.

However, between 1980 and 1986 oil prices declined by more than 60%, falling by nearly half between 1985 and 1986 alone. In the United States, this decline served as justification to stop virtually all federal R&D focused on unconventional oil. Canada however, maintained its commitment to developing unconventional resources and has seen oil production more than double between 1982 and 2008. Over that same period U.S. domestic oil production declined by 43%.

Yet in 2009, the United States began to see an increase in domestic oil production, the first year-to-year increase since 1985. Innovation in the private sector has generated this nascent renaissance. The combination of hydraulic fracturing and horizontal drilling has catalyzed an energy revolution in America, enabling the economic production of trillions of cubic feet of natural gas from shale formations around the country. More recently industry has evolved these technologies further to produce millions of barrels of oil, putting us on a path that could quite possibly make the United States the largest oil producer in the world once again. If the federal government were to allow access to the country's tremendous unconventional resources, our production levels could completely reshape the current geopolitical paradigm that has existed for more than 40 years.

These innovations originated in the oil fields of north Texas in the late 1970s, when an experienced and single-minded oilman named George Phydias Mitchell defied the conventional wisdom in the industry, the advice of his employees, and sometimes even the will of his shareholders and invested millions of dollars attempting to produce gas from the Barnett shale formation. Under his direction, Mitchell Energy pioneered the use hydraulic fracturing to unleash methane from this thin, but dense shale formation. Ultimately Devon Energy purchased Mitchell Energy in 2001 and married Mitchell's experience fracking shale formations with its experience using horizontal drilling technology to make it the pioneer of shale exploration and production.

While it was risk-taking entrepreneurs in the private sector like George Mitchell who created these innovations, the federal government has also played a role in making the technology more efficient and safer, as well as accelerating its development. In 1991, the National Energy

Technology Lab collaborated with Mitchell Energy's first horizontal well in the Barnett and brought a significant body of technological knowledge and experience to Mitchell's operation, informed by its own work in the Eastern Gas Shales Project started in 1976. The federal government lacks the mission or technical capability to develop these commercial technologies. First movers in industry tend to lack broader data and comparative experience that can be applied to use of their technology to improve efficiencies. Together though, cooperative work between the National Laboratories and the private sector has helped accelerate technological innovation. This is the same type of cooperation that Americans expect when it comes to the development of our unconventional oil assets, but are no longer receiving.

### **Federal Energy Policy Impact on Competitiveness**

Current federal policies that hamper production not only threaten our energy security, but also severely undermine our competitiveness. The International Energy Agency (IEA) projects that global energy demand could increase by nearly 50% by 2035. It also projects that fossil fuels will account for 80% of the world's energy supply, only slightly down from today's 86%. Fossil fuels, and oil specifically, will continue to fuel the world's economies, and countries that are realizing the most economic growth are thinking and acting strategically to ensure future supplies will be available to maintain economic growth and competitiveness.

International competitors are not only increasing their own production, but they are exploiting the tie between their governments and their oil companies to invest in new oil reserves in other countries. It is very difficult for a private corporation, no matter how large it may be, to compete against central governments. These other countries are taking positive steps to ensure they have the energy resources to fuel economic growth well into the future.

However, the United States is set on an opposite course. Under this administration, more than 86% of federal OCS lands and 83% of federal interior lands are completely off limits to energy exploration. In 2008, the Department of Interior's Bureau of Land Management (BLM) proposed making up to 2 million acres of public lands available for commercial oil shale leasing in Utah, Colorado, and Wyoming and 431,000 acres available for oil sands leasing in Utah. In February 2012, the BLM retreated from that proposal and significantly reduced the acreage available for industry to undertake research and development activities. Specifically, BLM reduced the acreages for oil shale activities in Colorado, Utah and Wyoming by over three-quarters, from 2 million to 461,965 acres. In addition, BLM reduced available acreage in eastern Utah for activities related to oil sands development by nearly 80%, from 431,000 to 91,045 acres.

Not only has the federal government been reducing access to the country's energy resources, but it has also been making it more difficult and expensive to produce on the areas that remain available. New and proposed regulations will add to the cost of production, making it even less attractive for industry to invest and produce oil in the U.S. The largest publicly traded oil

companies are increasingly looking overseas to the remaining areas that have not already been locked up by other countries' national oil companies.

Demand for oil will continue to increase as the global economy recovers and the developing world's thirst for energy only grows. The claim that U.S. oil production is rising is accurate but the reason is even more telling. Production of oil from federal lands is down 11% from 2011 compared to 2010 but has increased by 14% on private and state lands. The picture is equally as lopsided for production of natural gas, which is down 6% on federal lands but is up 12% on private lands. The most significant reserves are located on public lands so this trend is not sustainable over the long term. Without increased access to federal resources, we will see a return to more of our demand being met by imports.

And, of course, we are paying more for what we do import. Our net imports of petroleum and related products rose to \$331 billion in 2011, accounting for 60% of our total trade deficit and about two-thirds of the trade deficits increase from 2010.

In short, America's access to oil, our predominant source of energy, is declining at home and abroad. The same cannot be said for our global competitors, and our ability to compete, generate investment and revenue and foster economic growth is tremendously diminished as a result.

### **Market Influence on Innovation and Production**

The recent significant increase in domestic oil production has not occurred in a vacuum. It is important to note that geologists have been aware of the shale resources that have spurred increased domestic production for decades. However, it was not until sustained increases in global demand put oil prices on a relatively predictable upwards trajectory did it become economical to commercially deploy the new technology to produce shale oil resources at the levels we are now seeing.

After oil prices climbed to a record-high \$143 per barrel in July 2008, the U.S. and the world entered an economic recession that significantly curbed demand, causing oil prices to plummet 60% over the next seven months. Since then, much of the world began positive economic growth again, led by developing economies like China and India, resulting in a gradual increase in oil prices until last year. Over the past three years, we have seen oil prices triple. However, because demand was down in the U.S. and the increase was gradual, most Americans did not really notice it until recently. The recent political turmoil in North Africa and the Persian Gulf created fears of further instability and supply disruptions, and prices climbed precipitously. It is important to understand that even if the political unrest subsides and global supplies are unaffected, increased global demand has essentially recalibrated the oil market. Given today's market fundamentals, it is difficult to see prices returning to the low prices seen in 2009.

This presumption has created a level of certainty necessary for the private sector to invest billions of dollars over the past three years in oil-bearing shale formations. It also creates the

necessary certainty for the private sector to invest in our other unconventional resources like oil shale and oil sands if it were allowed access to those resources.

### **Impacts of Fuel Prices on Business & the Economy**

Fuel prices have taken an increasingly central role in the political and legislative debate over the last few months, and for good reason—it is a drag on economic growth and acts as an effective tax on American families and business. The cost of transporting goods, getting to work and even driving to the grocery store has increased 140% since January, 2009.

Every one cent increase in the price of gasoline costs Americans roughly an additional \$1 billion per annum. The average American household spent \$4,155 on gasoline in 2011, consuming 8.4% of median household income, the highest since 1981. Additionally, each \$10 increase in oil prices can knock a few tenths of a percent off any increase in GDP. The quicker the increase, the more pronounced the impact on economic growth. Because of the recent global recession, the cumulative amount of money spent on oil has become a larger share of global GDP since most other areas of economic output have remained constant or declined. In 2011 oil accounted for more than 5% of global GDP, a level not seen since 2008 when oil was selling at \$150. Based on 2012 projections from IEA, oil's share of GDP could approach 6% in 2012, the highest mark since the tumultuous 1970s.

Higher energy prices erode expendable income for America's families and marginal profits for America's businesses. At a time where we are just beginning to realize positive economic growth again, these price increases can have a profoundly negative impact. U.S. policy alone cannot recalibrate global oil markets on its own. However, U.S. policy can absolutely have a positive impact on U.S. prices just as it has had a negative impact.

As energy costs increase, businesses have less money to pay employees, new or existing. If prices remain elevated long enough, the unemployment rate can be expected to rise. This, of course, would be on top of the current prolonged high unemployment rate. As the administration and some in Congress have made calls to raise taxes on the oil and gas industry, it is also important to remember the consumer and job impacts such policies would have.

While it is factually accurate to say that there are very few mechanisms at the federal government's disposal to lower fuel prices immediately, it is not accurate that the government can do nothing to affect prices in the future. A signal to the global energy market that the U.S. is committed to accelerating the development of its vast conventional and unconventional oil resources would not go unnoticed. It is also not true that increased U.S. production could never be large enough to impact global prices and any claim to the contrary demonstrates either unawareness of the country's massive unconventional oil resources or a willful attempt to hide our potential. One need only look back to the first half 1980s to see the impact the addition of oil production from Alaska's North Slope and other areas such as the North Sea had on putting downward pressure on the world price of oil, contributing to the collapse in global price in 1986.

The acceleration of oil sands production in Alberta in the early 2000s is another, more recent example. Similarly, our unconventional resources have the potential to be the gamechanger the U.S. economy needs and upon which our future competitiveness can depend.

### **Potential Benefits of Increased Unconventional Production**

According to a recent Inventory of U.S. Energy Resources produced by the Institute for Energy Research from official U.S. government data, the country has an estimated 2.7 trillion barrels of in-place oil shale and oil sands resources, more than 80% of which is located on federal lands. At current levels of consumption, these resources would meet our demand for more than 380 years. These resources are twice the size of the entire world's proven conventional oil reserves of 1.3 trillion barrels. However, current technology would only allow for production of a fraction of the total resources. The Energy Information Administration estimates that the Green River Formation in Colorado, Utah, and Wyoming contains 800 billion barrels of recoverable oil.

A white paper released last month<sup>1</sup> by Anton Dammer and James Bunger updates previous government estimates and finds that by developing our oil shale and oil sands resources as Congress instructed in 2005, over the next 25 years we could realize a gain in oil production of 1.1 billion barrels, increase economic growth by \$153 billion, increase government revenue by \$31 billion, and avoid sending overseas \$129 billion for imported oil.

The paper noted that original government estimates that were delivered to Congress in 2007 were much higher but the current administration has been adversarial to development of these resources, eroding any progress that had been made in the previous administration. The paper recounts that a Task Force consisting of the Departments of Interior, Energy, and Defense had worked to fulfill Congress' mandate through 2008. The Task Force inventoried unconventional resources, current R&D work being conducted, and the state of current technology and recommended a strategic plan for accelerating the development of these resources. Additionally, the Department of Interior finalized a Programmatic Environmental Impact Statement (PEIS), produced a Resource Management Plan, promulgated new leasing regulations, and awarded six Research, Development, and Demonstration leases to industry. Implementation of Congress' mandate was on underway and on schedule at the end of 2008.

Since then, the current administration has essentially killed this effort against the will of Congress. The Department of Interior has withdrawn the leasing program, publicly suggested that terms of existing leases and the Resource Management Plan are under review, and chose not to defend itself in a lawsuit that has killed the leasing program. Moreover, the Unconventional Fuels Program at the Department of Energy has been de-funded and abandoned. The Department of Interior's new PEIS severely limits new acreage. These actions have spoken loud

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<sup>1</sup> A. Dammer & J. Bunger, *Economic Impacts of Failure to Implement Legislative Mandates of Section 369 of the Energy Policy Act of 2005*, March 2012.

and clear to the private sector...do not invest your capital in the development of unconventional oil production

Similar to what has happened in the production of oil and natural gas from shale formations, industry has been forced to focus on development on state and private lands. While the current hydrocarbon boom demonstrates that industry's innovation and perseverance can sometimes trump governmental obstinace, it should not have to do so. Our energy future is being compromised by the administration picking energy favorites and trumping the nation's strategic interests.

### **Technology & Policy Pathways to Expand Production**

Industry has developed many different potential methods to develop both oil sands and oil shale resources. In both cases hydrocarbons are trapped in no viscous elements. While oil sands contain producible hydrocarbons, oil shale must be chemically converted to produce hydrocarbons. Because Canada had the foresight to maintain a commitment to unconventional R&D and production, there is a tremendous body of commercial technology that supports oil sands production. As the technology has evolved, it has become more efficient and has considerably lessened its environmental impact. In fact, Albertan oil sands development has become so common-place that it no longer even merits the designation of "unconventional".

In the initial stages of oil sands production, soil was mined from the surface and then manufactured into crude oil. Recently however, there has been a major shift towards *in situ*, or "in place" production, whereby heat either through steam or other mediums is applied to the oil sands bitumen to increase its viscosity to the point that it is produced via traditional oil drilling techniques. In situ production has significantly reduced land disturbance and environmental footprint. While U.S. oil sands are chemically divergent from those in Canada, the innovation and experience in Alberta provides a tremendous starting point for production here...if and when the government was to allow access to our oil sands resources.

Lack of access and economic conditions have prevented oil shale development technology from progressing as far as that for oil sands. However, like oil sands, crude oil can be produced from oil shale through surface mining or via *in situ* methods. Because shale is solid rock, oil shale kerogen must be exposed to higher temperatures to render its hydrocarbons. Industry does believe that knowledge gained in the Albertan oil sands will directly benefit development of U.S. oil shale...if and when the government was to allow access to our oil shale resources. Unlike production of oil and natural gas from shale formations, there is relatively little oil shale to develop on state and private lands. Without access to federal oil shale resources, industry has very little incentive to invest capital into technology when it has no reason to expect that it will ever be able commercially produce oil shale deposits and recoup its R&D investment.

As such, the policy pathway to realizing even a portion of this huge asset is to allow access to our unconventional resources for production. Congress made its will known through its

overwhelmingly bipartisan support for the Energy Policy Act of 2005. This administration has ignored its mandate and refuses to move forward with production of unconventional oil on federal lands. Unless this near-sighted approach changes, our largest strategic assets will remain subterranean potential assets until this, or subsequent administrations decide to allow access to these strategic assets and secure our energy future.