Statement for the Record for the United States Senate Committee on Energy and Natural Resources

Hearing on "Opportunities and Challenges for Natural Gas"

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Lee Fuller
Vice President of Government Relations
Independent Petroleum Association of America
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This testimony is submitted to the record for the Senate Energy and Natural Resources Committee hearing examining the role of natural gas in United States' energy policy on behalf of the Independent Petroleum Association of America (IPAA).

IPAA represents thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that support their efforts, which will be significantly affected by federal action. Independent producers develop 95 percent of American oil and natural gas wells, produce 54 percent of American oil and produce 85 percent of American natural gas. The average independent has been in business for 26 years and employs 12 full-time and three part-time employees. In total, America's onshore independent oil and natural gas producers supported 2.1 million direct jobs in the United States in 2010.

American natural gas presents an opportunity for the United States to utilize a clean burning, secure and affordable fuel. Projections suggest that identified resources could provide enough natural gas to meet America's needs based on current demand for as much as 100 years. This abundance allows the opportunity for the American economy to utilize natural gas in new ways – an expansion of US chemical production, greater use of natural gas for electricity generation, natural gas vehicle development and exports of liquefied natural gas. The federal government can enhance or impede the development of American natural gas. Two areas that can have substantial impact are the regulatory framework for new production and tax policies that affect the capital essential to meeting future American natural gas demand. This testimony will address these issues.

Regulation of Hydraulic Fracturing

The notion that oil and natural gas production generally, and hydraulic fracturing in particular, are unregulated flies in the face of reality. The allegation that oil and natural gas production is unregulated ignores the long, successful history of state-based regulation of natural gas production. Drilling permitting is grounded in state regulatory systems because it involves state land use authority; the federal government has never – nor should it ever – determine the use of lands properly governed by state jurisdictions.

Hydraulic fracturing has been used as a well stimulation technology since the late 1940s for oil, natural gas, geothermal and water wells that is regulated as a part of the drilling permits issued by state regulators. Over the past decade, the combination of horizontal drilling and hydraulic fracturing has allowed industry to produce oil and natural gas from shale and tight sands that, previously, was uneconomic to produce.

Hydraulic fracturing refers to one, temporal step in the oil and natural gas production process. The term hydraulic fracturing has been misconstrued to mean anything related to oil and natural gas development. To be clear, when industry references "hydraulic fracturing," the industry is referencing the step in the oil and natural gas development process that uses water, sand and

additives to break apart the hydrocarbon bearing formation (i.e. shale) to create permeability and release oil and natural gas.

Regulation of oil and natural gas production depends, largely, on where the oil and natural gas production is taking place. The federal government has permitting and regulatory authority over production in the Outer Continental Shelf (OCS) and on federally managed lands. These regulations are frequently updated. The Bureau of Land Management, for example, is currently in the process of promulgating new regulations entitled, "Oil and Gas; Well Stimulation, Including Hydraulic Fracturing, on Federal and Indian Lands."

Natural gas and oil production on state and private lands are, generally, regulated by state regulatory authorities. The proximity state oil and gas regulators to the operations occurring in their respective states, combined with the regulators' understanding of the unique circumstances in their states, creates the most efficient system create for environmentally responsible oil and natural gas development. Additionally, state regulators generally have the technical expertise, resources and capabilities to manage the permitting process.

State oil and gas regulators, for example, have successfully regulated the process of hydraulic fracturing for decades. Fracturing regulations were developed and have been implemented by state oil and natural gas regulatory agencies through well construction and completion requirements. These regulations have effectively managed the limited environmental risks of the fracturing process. Over the 60 plus years since the earliest use of hydraulic fracturing, there have been no incidents related to the fracturing process that suggests the existence of a systemic environmental management problem.

Responsible, common-sense regulations on development are a foundation of the oil and natural gas industry's operations – and rightly so. Protecting the environment and developing our resources must go hand-in-hand. Today, the oil and natural gas industry is regulated by both state and federal environmental agencies. However, uniform federal standards that usurp longstanding, state regulatory authority are not the answer. In fact, most federal environmental laws create a broad, overarching federal framework that delegates to the states the responsibility of creating the specific regulations – regulations that reflect the realities that circumstances differ in each state are require different approaches.

These federal environmental laws apply regardless of whether natural gas and oil production are occurring on federal, state or private lands. Moreover, because most federal environmental laws are drafted using a manufacturing facility as a model for the regulatory framework, these laws have provisions that reflect industries that do not fit that model including forestry, agriculture, mining and oil and natural gas production. Uniformity is simply a flawed concept for regulation. Examples of environmental laws adopting a broad framework but delegating implementation to state regulatory agencies, including the Clean Air Act, Clean Water Act, Safe Drinking Water

Act and others. IPAA has enclosed legal analysis of applicable federal environmental laws to the upstream oil and natural gas industry.

Despite the numerous federal and state regulations applicable to the oil and natural gas production process, fossil fuel opponents frequently posit the need to create federal, baseline regulations for hydraulic fracturing without any evidence that the current regulatory approach is inadequate.

To the contrary, federal officials, state regulators, and independent experts have publicly stated that shale development – including hydraulic fracturing – does not pose "substantial" risks.

- Interior Secretary Ken Salazar: Responding to what he deemed "hysteria" about hydraulic fracturing, Salazar said the process "can be done safely and has been done safely hundreds of thousands of times." (Feb. 2012)

- EPA Administrator Lisa Jackson: "In no case have we made a definitive determination that the [fracturing] process has caused chemicals to enter groundwater." (April 2012) Jackson also has said: "I'm not aware of any proven case where [hydraulic fracturing] itself has affected water." (May 2011)

- U.S. EPA: "EPA did not find confirmed evidence that drinking water wells have been contaminated by hydraulic fracturing fluid injection…" (2004)

- Former EPA Administrator Carol Browner: "There is no evidence that the hydraulic fracturing at issue has resulted in any contamination or endangerment of underground sources of drinking water." (May 1995)

- U.S. Dept. of Energy and Ground Water Protection Council: "[B]ased on over sixty years of practical application and a lack of evidence to the contrary, there is nothing to indicate that when coupled with appropriate well construction; the practice of hydraulic fracturing in deep formations endangers ground water. There is also a lack of demonstrated evidence that hydraulic fracturing conducted in many shallower formations presents a substantial risk of endangerment to ground water." (May 2009)

- CardnoEntrix (Inglewood Oil Field Study): "Before-and-after monitoring of groundwater quality in monitor wells did not show impacts from high-volume hydraulic fracturing and high-rate gravel packing." (October 2012)

- Center for Rural Pennsylvania: "[S]tatistical analyses of post-drilling versus pre-drilling water chemistry did not suggest major influences from gas well drilling or hydrofracturing (fracking) on nearby water wells…" (Oct. 2011)

- John Hanger, Former Pa. DEP Secretary: "We've never had one case of fracking fluid going down the gas well and coming back up and contaminating someone's water well." (2012)

- Dr. Stephen Holditch, Department of Petroleum Engineering, Texas A&M University; member of Natural Gas Subcommittee of the Secretary of Energy Advisory Board: "I have been working in hydraulic fracturing for 40+ years and there is absolutely no evidence hydraulic fractures can grow from miles below the surface to the fresh water aquifers." (October 2011)

- Dr. Mark Zoback, Professor of Geophysics, Stanford University: "Fracturing fluids have not contaminated any water supply and with that much distance to an aquifer, it is very unlikely they could." (August 2011)

Despite this consistent experience showing effective regulation, the Obama Administration has sought to encroach upon the progress of even state and private land development through instructions to virtually every agency to find opportunities to federalize the regulation of oil and natural gas production, particularly hydraulic fracturing -- the very technology that has unlocked the oil and natural gas reserves from shale. In the spring of 2012, there were no less than 11 federal agencies trying to find ways to regulation hydraulic fracturing. Since there has been no evidence of hydraulic fracturing contaminating groundwater or suggestions that systemic regulatory failure exists in the current regulatory framework, IPAA would encourage Members of the Committee to oppose any new federal regulations on the oil and natural gas industry to allow America's oil and natural gas producers to create jobs and the energy to power the American economy.

Tax Policy

Federal tax policy has historically played a substantial role in developing America's natural gas and petroleum. Early on, after the creation of the federal income tax, the treatment of costs associated with the exploration and development of this critical national resource helped attract capital and retain it in this inherently capital intensive and risky business. Allowing the expensing of intangible drilling and development costs and percentage depletion rates of 27.5 percent are examples of such policy decisions that resulted in the United States extensive development of its petroleum.

But, the converse is equally true. By 1969, the depletion rate was reduced and later eliminated for all producers except independents. However, even for independents, the rate was dropped to 15 percent and allowed for only the first 1000 barrels per day of petroleum produced. A higher rate is allowed for marginal wells which increases as the petroleum price drops, but even this is constrained – in the underlying code – by net income limitations and net taxable income limits. In the Windfall Profits Tax, federal tax policy extracted some $44 billion from the industry that could have otherwise been invested in more production. Then, in 1986 as the industry was trying to recover from the last long petroleum price drop before the 1998-99 crisis, federal tax policy was changed to create the Alternative Minimum Tax that sucked millions more dollars from the exploration and production of petroleum and natural gas. These changes have discouraged capital from flowing toward this industry.

Independent producers historically reinvest over 100 percent of American oil and natural gas cash flow back into new American production.

The Obama Administration's budget request – and recurring advocacy statements on an almost daily basis – would strip essential capital from new American natural gas and oil investment by radically raising taxes on American production. American natural gas and oil production would be reduced. It runs counter to the Administration's clean energy and energy security objectives. The following is a review of some of the Obama Administration proposed changes to natural gas and oil taxation.

Intangible Drilling and Development Costs (IDC) – Expensing IDC has been part of the tax code since 1913. IDC generally include any cost incurred that has no salvage value and is necessary for the drilling of wells or the preparation of wells for the production of natural gas or oil. Only independent producers can fully expense IDC on American production. Loss of IDC for independent producers will have significant effects on their capital development budgets. A Raymond James analysis in 2009 reported that the loss of IDC would result in capital drilling budgets being reduced by 25 to 30 percent. This compares with information provided to IPAA by its members indicating that drilling budgets would be cut by 25 to 40 percent. Regardless of the exactness of the assessments, clearly, the consequences would be significant. And, the consequences would soon be evident. Roughly half of America's current natural gas production is provided by wells developed during the past four years.

Percentage Depletion – All natural resources minerals are eligible for a percentage depletion income tax deduction. Percentage depletion for natural gas and oil has been in the tax code since 1926 after Congress determined that relying solely on cost depletion was leading to the loss of important American mineral resources. Unlike percentage depletion for all other resources, natural gas and oil percentage depletion is highly limited. It is available only for American production, only available to independent producers and for royalty owners, only available for the first 1000 barrels per day (6000 mcfd of natural gas) of production, limited to the net income of a property and limited to 65 percent of the producer's net income. Percentage depletion provides capital primarily for smaller independents and is particularly important for marginal well operators. These wells – that account for 20 percent of American oil and 12-13 percent of American natural gas – are the most vulnerable economically. Input to IPAA from its operators who take percentage depletion indicates that the combined effect of the Obama Administration proposals on IDC and percentage depletion would reduce drilling budgets in half. At this lower rate, new production will not offset the natural decline in production from existing wells. For example, one producer now drills ten wells per year; without IDC and percentage depletion, this producer could only drill five wells per year. A five well program will not replace declining production in existing wells and the small business company will have to shutdown. Congress' choice is straightforward: reduce American oil production by 20 percent and its natural gas production by 12 percent or retain the current historic tax policies that have encouraged American production.

Passive Loss Exception for Working Interests in Oil and Gas Properties – The Tax Reform Act of 1986 divided investment income/expense into two baskets – active and passive. The Tax Reform Act exempted working interests in natural gas and oil from being part of the passive income basket and, if a loss resulted (from expenditures for drilling wells), it was deemed to be an active loss that could be used to offset active income as long as the investor's liabilities were not limited. Natural gas and oil development require large sums of capital and producers frequently join together to diversify risk. Additionally, natural gas and oil operators have sought individual investors to contribute capital and share the risk of drilling wells. Most American wells today are drilled by small and independent companies, many of which depend on individual investors. There is no sound reason for Congress to enact tax rules that would discourage individual investors from continuing to participate in this system. Moreover, Congress applied the passive loss rules only to individuals and not to corporations. The repeal of the working interest rule, therefore, would senselessly drive natural gas and oil investments away from individuals and toward corporations. There is no apparent reason why Congress would or should favor corporate ownership over individual ownership of working interests. Furthermore, since AMT restrictions apply to IDC of individual working interest investors, the application of the passive loss rules to those investors is unnecessary and excessive. In sum, to qualify for the exception, the taxpayer must have liability exposure and definitely be at risk for any losses. If income/loss, arising from natural gas and oil working interests, is treated as passive income/loss, the primary income tax incentive for taxpayers to risk an investment in natural gas and oil development would be significantly diminished. In today's banking climate, smaller producers find banks uninterested or incapable of providing capital; taking private investors away will further exacerbate the challenge of raising capital to sustain American marginal well production.

Geological and Geophysical (G&G) Amortization – G&G costs are associated with developing new American natural gas and oil resources. For decades, they were expensed until a tax court case concluded that they should be amortized over the life of the well. After years of consideration and constrained by budget impacts, in 2005, Congress set the amortization period at two years. It also simplified G&G amortization by applying the two year amortization to failed as well as successful wells; previously, failed wells could be expensed. Later, Congress extended the amortization period to five years for large major integrated oil companies and then extended the period to seven years. Early recovery of G&G costs allows for more investment in finding new resources. Congress recognized that America benefitted if capital used to explore for new natural gas and oil could be quickly reinvested in more exploration or production of American resources, it was in the national interest. Nothing has changed to alter that conclusion. If anything, current capital and credit limitations enhance the rationale to get these funds back into new investment.

Marginal Well Tax Credit – This countercyclical tax credit was recommended by the National Petroleum Council in 1994 to create a safety net for marginal wells during periods of low prices.

These wells as stated above account for 20 percent of American oil and 12 percent of American natural gas. They are the most vulnerable to shutting down forever when prices fall to low levels. Congress enacted in this countercyclical tax credit in 2004 after ten years of consideration. It concluded that the nation benefitted if these marginal operations were supported during times of low prices, that the production from these wells were – in effect – a national resource reserve that would be lost forever if the wells had to be shutdown and plugged during difficult economic times. No different conclusion is now warranted. A year ago, as America faced high energy prices, the clear risk of foreign energy dependency was all too evident; America's marginal wells are a first defense against more foreign imports. Fortunately, to date, the marginal well tax credit has not been needed, but it remains a key element of support for American production – and American energy security.

Enhanced Oil Recovery (EOR) Tax Credit – The EOR credit is designed to encourage oil production using costly technologies that are required after a well passes through its initial phase of production. Conventional oil well production declines regularly after it begins production. However, millions of barrels of oil remain in formations when the initial production phase is over. The 2001 National Energy Report indicated that "anywhere from 30 to 70 percent of oil, and 10 to 20 percent of natural gas, is not recovered in field development. It is estimated that enhanced oil recovery projects, including development of new recovery techniques, could add about 60 billion barrels of oil nationwide through increased use of existing fields." For example, one of the technologies is the use of carbon dioxide as an injectant. In 2006, the Department of Energy studied the potential for using carbon dioxide enhanced oil recovery (CO_2-EOR) and concluded that: "Ten basin-oriented assessments- four new, three updated and three previously released- estimate that 89 billion barrels of additional oil from currently 'stranded' oil resources in ten U.S. regions could be technically recoverable by applying state-of-the-art CO_2-EOR technologies." Given the increased interest in carbon capture and sequestration, CO_2-EOR offers the potential to sequester the carbon dioxide while increasing American oil production. Currently, the oil price threshold for the EOR tax credit has been exceeded and the oil value is considered adequate to justify the EOR efforts. However, at lower prices EOR becomes uneconomic and these costly wells would be shutdown. The EOR tax credit was enacted in 1990 and provides the potential to maintain important US oil production by supporting the development of these wells in low price periods.

The Administration justifies its proposals based on two flawed rationales. First, the provision "… like other oil and gas preferences the Administration proposes to repeal, distorts markets by encouraging more investment in the oil and gas industry than would occur under a neutral system." Second, to the extent that the provision "… encourages overproduction of oil, it is detrimental to long-term energy security and is also inconsistent with the Administration's policy of reducing carbon emissions and encouraging the use of renewable energy sources through a cap-and-trade program."

The first issue neither is unique to natural gas and oil tax provisions nor to the tax code generally. For natural gas and oil production, these tax provisions are intended to encourage the development of American resources; they were never intended to be neutral. More broadly, these provisions reflect business tax policy that is consistent with comparable treatment of other energy sources. In its report, *Federal Financial Interventions and Subsidies in Energy Markets 2007*, the Energy Information Administration (EIA) assesses the federal government's support for energy sources. As the following tables show, EIA demonstrates that natural gas and oil federal treatment is comparable to other major energy sources on a total basis and is well below other sources on a unit basis. The Obama Administration's first justification is simply an inaccurate characterization of the nature of federal energy tax policies that have been crafted over decades by the Congress.

Beneficiary	Direct Expenditures	Tax Expenditures	Research & Development	Federal Electricity Support	Total
2007 Subsidies					
Coal	-	290	574	69	932
Refined Coal[1]	-	2,370	-	-	2,370
Natural Gas and Petroleum Liquids	-	2,090	39	20	2,149
Nuclear	-	199	922	146	1,267
Renewables	5	3,970	727	173	4,875
Electricity (Not fuel specific)	-	735	140	360	1,235
End Use	2,290	120	418	-	2,828
Conservation	256	670	-	-	926
Total	2,550	10,444	2,819	767	16,581

Table 36. Energy Subsidies Not Related to Electricity Production: Alternative Measures

Category	Fuel Consumption (quadrillion Btu)	Alternative Measures of Subsidy and Support: FY 2007 Subsidy and Support (million 2007 dollars)	Alternative Measures of Subsidy and Support: Subsidy per million Btu (2007 dollars)
Coal	1.93	78	0.04
Refined Coal	0.16	214	1.35
Natural Gas and Petroleum Liquids	55.78	1,921	0.03
Ethanol/Biofuels	0.57	3,249	5.72
Geothermal	0.04	1	0.02
Solar	0.07	184	2.82
Other Renewables	2.50	360	0.14
Hydrogen	*	230	NM
Total Fuel Specific[1]	60.95	6,237	0.10
Total Non-Fuel Specific	NM	3,597	NM
Total End-Use and Non-Electric Energy	NM	9,834	NM

Table 35. Subsidies and Support to Electricity Production: Alternative Measures

Fuel/End Use	FY 2007 Net Generation (billion kilowatthours)	Alternative Measures of Subsidy and Support: Subsidy and Support Value 2007 (million dollars)	Alternative Measures of Subsidy and Support: Subsidy and Support Per unit of Production (dollars/megawatthours)
Coal	1,946	854	0.44
Refined Coal	72	2,156	29.81
Natural Gas and Petroleum Liquids	919	227	0.25
Nuclear	794	1,267	1.59
Biomass (and Biofuels)	40	36	0.89
Geothermal	15	14	0.92
Hydroelectric	258	174	0.67
Solar[1]	1	14	24.34
Wind	31	724	23.37
Landfill Gas	6	8	1.37
Municipal Solid Waste	9	1	0.13
Unallocated Renewables	NM	37	NM
Renewables (subtotal)	360	1,008	2.80
Transmission and Distribution	NM	1,235	NM
Total	4,091	6,747	1.65

The Administration's second rationale is similarly irrational. Production of American oil and natural gas serves the nation's goal of improving its energy security. Production of American oil and natural gas has been regulated to assure that wells are limited to volumes that conserve the long term production of its reservoir. These limitations have been entrenched since the mid-1930s. Current production reflects the need for American production to be maximized and

nothing suggests that it should not be. Similarly, the Administration's climate goals of reducing carbon emissions and encouraging the use of renewable energy sources are enhanced by American natural gas and oil production. Natural gas is a clean, abundant, affordable and American resource that must be a part of any climate initiative. Oil will continue to be a key component of America's energy supply for the foreseeable future and any policies should rely first on American oil rather than foreign sources.

Conclusion

As the Committee considers policies related to America's natural gas resources, it must recognize that federal actions can dramatically affect the future of the nation's energy security and the nation's ability to meet the potential for its economic growth. IPAA urges the Committee to support those actions that enhance that future and reject the ill-advised calls for adverse restrictions to capital and unnecessary federal regulation of production.

Enclosure