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Home > American Energy Security and Innovation: An Assessment of North America's Energy Resources

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## American Energy Security and Innovation: An Assessment of North America's Energy Resources

*Witnesses:*

**Adam Sieminski**

Administrator, U.S. Energy Information Administration

**Daniel Yergin**

Vice Chairman, HIS

**Jennifer Morgan**

Director, Climate and Energy Program, World Resources Institute

**Mary Hutzler**

Distinguished Senior Fellow, Institute for Energy Research

**Harry Vidas**

Vice President, ICF International

*Committee Members Present:*

Ed Whitfield (R-KY), Subcommittee Chairman

Bobby Rush (D-IL), Subcommittee Ranking Member

Fred Upton (R-MI), Full Committee Chairman

Henry Waxman (D-CA), Full Committee Ranking Member

Steve Scalise (R-LA),

John Shimkus (R-IL)

Joseph Pitts (R-PA)

Lee Terry (R-NE)

Michael Burgess, M.D. (R-TX)

Bob Latta (R-OH)

Bill Cassidy (R-LA)

Pete Olson (R-TX)

David McKinley (R-WV)

Cory Gardner (R-CO)

Mike Pompeo (R-KS)

Adam Kinzinger (R-IL)

Morgan Griffith (R-VA)

Joe Barton (R-TX)

Jerry McNerney (D-CA)

Paul Tonko (D-NY)

Edward J. Markey (D-MA)

Gene Green (D-TX)

Lois Capps (D-CA)

Michael F. Doyle (D-PA)

John Barrow (D-GA)

Doris O. Matsui (D-CA)

Donna M. Christensen (D-VI)

Kathy Castor (D-FL)

On February 5, 2013, the House Committee on Energy and Commerce Subcommittee on Energy and Power held a hearing to receive testimony assessing North America's energy resources. The hearing was the first in a series on "American Energy Security and Innovation." The recent and ongoing oil and gas boom in the U.S. has led the subcommittee to reevaluate the development of policies passed on the previous "belief of ever dwindling energy resources."

In his opening statement, Energy and Power Subcommittee Chairman Ed Whitfield (R-KY) hailed the increase in oil and natural gas

resource production as “a very pleasant surprise” that prompts a “wholesale rethinking of energy policy” so that it is no longer “rooted in the assumption of domestic energy scarcity,” but in “energy abundance.” He referenced the Energy Information Administration’s (EIA) prediction of continued increase in domestic oil and gas production and a need to approve the Keystone XL pipeline. Whitfield promoted domestic production as a means to “lower energy prices, create jobs, and strengthen national security,” but also recognized the need to use a “diverse mix of our resources: coal, oil, gas, and renewables.”

Energy and Commerce Committee Chairman Fred Upton’s (R-MI) opening statement focused on domestic oil and gas production as providing “game changing potential for North American energy independence.” Noting previous concerns over heavily relying on oil from countries in the Organization of the Petroleum Exporting Countries (OPEC), he emphasized the new standing of the U.S. as the “world’s leading producer of natural gas” and predictions “that by 2020, U.S. oil production will exceed Saudi Arabia’s.” Upton expressed concern that federal laws will hinder domestic production while listing benefits of such production, including boosting our economy, creating jobs, and enhancing energy security. He also mentions the need to improve infrastructure such as by approving the Keystone XL pipeline.

In his opening statement, Energy and Power Subcommittee Ranking Member Bobby Rush (D-IL), outlined the importance of “enacting an energy blueprint” that focuses on four areas: providing “safe, reliable, and affordable energy to all Americans,” providing “additional jobs and economic opportunity to all sectors of our populations,” addressing the “consequences of climate change,” and becoming “self-sufficient and energy independent.” Rush promoted the use of renewable energy sources and emphasized the National Renewable Energy Laboratory’s finding that the U.S. could meet 80 percent of the nation’s energy needs with renewable sources by 2050 given existing technologies.

Ranking Member of the Full Committee Henry Waxman (D-CA) gave an opening statement focusing on the question of “whether we are on a sustainable course for the years to come.” He cited President Obama’s inaugural address in which responding to climate change was a major theme. Waxman stressed that there was a “limited amount of time to respond to climate change” and that the problem is becoming more and more difficult and costly as time passes. He discussed the how oil and gas innovations “are all positive developments” but stated, “The biggest energy challenge we face as a country is carbon pollution. We can’t have a conversation about America’s energy policy without also having a conversation about climate change.”

In his testimony, Adam Sieminski of the U.S. Energy Information Administration provided extensive data on the state of domestic energy resources. He announced that “EIA estimates that U.S. total crude oil production averaged 6.4 million barrels per day in 2012, an increase of 0.8 million barrels per day.” New technologies in tight oil extraction generated this increase and production should continue to increase to 7.9 million barrels per day in 2014. Average 2012 natural gas production equaled 69.2 billion cubic feet per day. While oil and gas production excelled, domestic coal production fell by 12 percent over the past four years. Sieminski discussed the 17 percent wind and 32 percent solar increase in renewable energy consumption. Biofuel consumption increased, but hydropower decreased due to drought conditions. Overall 10.3 percent more renewable resources were consumed in 2012 than in 2010.

Daniel Yergin, Vice Chairman of IHS, began his testimony stating, “The United States is in the midst of the ‘unconventional revolution in oil and gas’ that...supports 1.7 million jobs.” He continued with statistics that domestic shale gas production increased from 2 to 37 percent in 10 years and U.S. oil output “by about 38 percent since 2008.” Yergin noted that such changes in domestic resource production stimulate questions on the environmental impacts and exporting of said energy. It alters global geopolitical interactions with effects on the Iranian sanctions, discussions of exporting LNG to Japan given their energy shortage, and concerns of European countries over the U.S.’s increasing energy competitiveness as expressed at the World Economic Forum.

The Director of the Climate and Energy Program at the World Resources Institute, Jennifer Morgan detailed in her testimony the need to “factor in both opportunities and risks” when dealing with energy resources, and “consider the risk of climate change” for current and future resource development. She addressed a number of key points including creating bipartisan legislation to support improving energy efficiency, diversifying domestic energy production, funding low-carbon and clean energy technologies, and minimizing environmental impacts. Morgan emphasizes that any plan must consider climate change and policies “should be comprehensive, long-term, targeted, and inclusive.”

In her testimony and posted summary, Mary Hutzler, a distinguished senior fellow with the Institute for Energy Research (IER) said that the “question is whether the federal government will permit us to have access to our abundant energy resources not whether sufficient resources exist.” She outlined the abundance of resources noting the 400 percent increase in shale oil production in the last 10 years and more than 300 percent increase in shale gas production between 2007 and 2010. Combining hydraulic fracturing and horizontal drilling “revolutionize[d] the industry” and Hutzler used the 25 fold increase in estimated technically recoverable oil in the Bakken Formation as an example of the results of this “energy miracle.” An IER study showed that, were the U.S. to open federal lands and offshore areas to development, the nation’s “economic activity” would gain \$14.4 trillion in 30 years.

Harry Vidas is the Vice President of ICF Internation and in his testimony he described the current state of the domestic oil and gas resources as “extremely robust and diverse.” ICF assesses “the geology, historic production and costs of all major U.S. and Canadian plays” using a geographical information system (GIS), and found that “resources are geographically widespread, and are economic to develop at moderate wellhead prices.” Vidas states that, assuming use of current technologies and no additional large plays, the “technically recoverable U.S. natural gas resource base is 3,850 trillion cubic feet (Tcf), representing about 155 years of current annual consumption.” The 264 billion barrels of oil “represents 110 years of current annual production.”

During the question and answer session, Gene Green (D-TX) asked about the future of natural gas production. Sieminski replied

that the EIA expected production to “hold even” as price increases will allow coal to better compete with natural gas. Ed Markey (D-MA) questioned the reliability of EIA data and projections citing discrepancies between projections for 2010 to 2012 and the “real data.”

Rush raised the issue of job creation in unconventional oil, to which Yergin responded that jobs would be spread across states because there are direct, indirect, and induced jobs to consider. He stated that he believes the U.S. is prepared for this level of job growth but it will require some training.

Given the increase in domestic resource production and availability, Joe Barton (R-TX) asked if the U.S. could be “self-sufficient in oil production in 10 years.” Sieminski said that it was possible but more still need to be done, such as spacing wells closer together. He projected that 30 percent of the U.S. oil would remain imported.

Lee Terry (R-NE) asked the panel to comment on the likelihood of liquefied natural gas (LNG) use in vehicles in the future. Yergin and Hutzler agreed on use of LNG fuel for heavy trucks but noted that the level of infrastructure needed for expanding that use to private vehicles was too difficult. Vidas indicated that while LNG use in vehicles would triple, it would still be only a small percentage increase and LNG would contribute more to private vehicle fueling through generation of electricity for electric cars.

Steve Scalise (R-LA) inquired as to why there was such an increase in production on non-federal lands as opposed to federal lands. Hutzler claimed that the fact that 96 percent of production was on non-federal lands because it takes 300 days to obtain a federal permit and only 30 for a state permit. She advocated for streamlining the permitting process. Michael Doyle (D-PA) challenged her statements with a map showing the lack of overlap between federal lands and the location of shale reserves, stating that “geology works in the favor of private owners.”

John Shimkus (R-IL) and Mike Pompeo (R-KS) brought up the status of pipelines for transporting oil and gas. Yergin, Hutzler, and Vidas described pipeline as the “most efficient,” “least expensive,” and a “safer” means of transporting materials.

Shimkus inquired as to what effect increased domestic production would have on global geopolitical affairs in terms of exporting LNG. Yergin responded that given the huge supply, the U.S. needs a larger market. Bill Cassidy (R-LA) emphasized the need to provide Japan with LNG to “protect their economy” after the loss of the Fukushima reactor. Yergin agreed with this statement.

Pete Olson (R-TX) focused on “geopolitical challenges” asking about how foreign affairs would be affected, particularly with regard to Eastern Europe. Yergin responded that the U.S. would become more self-sufficient causing countries in the Middle East to increasingly export to eastern Asia. He spoke about Brazil being “on course to be a global energy powerhouse” and Poland and Ukraine desiring to develop further energy independence from Russia.

Democratic members focused their questions on topics of energy efficiency, renewable energy, and the relationship between climate change and energy policy. Their questions primarily addressed Morgan. Rush inquired as to what prevents the further development of renewable energy and how the U.S. can become an exporter of renewables.

Morgan responded that the lack of a national energy plan that provides a “long-term certainty” that stretches beyond three years is needed to “create investment security” and prompt further renewable energy development. She referenced Germany and China’s energy plans as successful examples of long-term investment in renewables. Additionally, while the U.S. is “doing well” in research and development (R&D), the country is not moving fast enough and should, thus, establish innovation centers.

Lois Capps (D-CA) discussed the impact of climate change on coastal communities in her district, noting that many are beginning to build seawalls for protection. Both Capps and Morgan described the fact that many coastal communities “struggle with the cost” of implementing such measures.

Doris Matsui (D-CA) asked about the “economic benefits of expanding renewable energies.” Morgan replied that with the expansion of renewables, there is a prospect of having “more jobs created than in oil, fossil fuel, and coal combined.” She projects that if the U.S. had 30 percent of its energy from renewables, there would be four million jobs created by 2040.

Waxman’s questions were exclusively on how to factor climate change into policies. Morgan stated a need to address greenhouse gas emissions as the carbon dioxide reduction rate has reached a plateau and methane continues to increase. She advocated for a “carbon pricing” policy as is in place in Europe. Waxman and Morgan focused on the idea that environmental considerations should be taken into account when developing policy.

Opening statements, witness testimonies and an archived webcast of the hearing can be found on the House Committee on Energy and Commerce web site.