TESTIMONY

Testimony on S. 937 The American Alternative Fuels Act of 2011

Addendum

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Testimony on S. 937 The American Alternative Fuels Act of 2011[2]
Addendum

Before the Committee on Energy and Natural Resources
United States Senate

June 29, 2011

The subsequent questions and answers found in this document were received from the Committee for additional information following the hearing on June 7, 2011 and were submitted for the record.

Questions from Senator Murkowski

Question 1-- Coal-to-liquid (CTL) Fuel in Alaska (S. 937): *The military bases in my home state of Alaska have shown significant interest in CTL fuels over the years. When you look at Alaska's resource base and geographic location, what do you think the most viable alternative fuels are, both now and over the near term?*

Answer 1: My RAND colleagues and I have not conducted research on the prospects of producing alternative fuels in Alaska; however, I can make a few general comments. Alaska has three resources that potentially can be used to produce alternative liquid fuels: natural gas, coal, and biomass. Abundant natural gas resources are located in the Alaska North Slope. Because of projected production of shale gas in the lower-forty eight, it is possible that North Slope gas will not be marketable. This stranded North Slope gas could serve as the feedstock for a gas-to-liquids (GTL) production facility. The technology for such a plant is fully commercial, as shown by the recent construction of two modern GTL plants in Qatar. The liquid products of the facility could be transported using the Trans-Alaska Pipeline System. With stranded natural gas, a large GTL plant might be an economically viable project. However, we have not examined the extra costs or environmental damage that would be incurred in constructing and operating a plant in the harsh environment of the North Slope. An alternative is to transport North Slope gas to a location on the Gulf of Alaska, from whence it could be brought to market as LNG or converted to an alternative liquid fuel.

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In the absence of a Trans-Alaska Gas Pipeline, a potentially attractive location for alternative fuels production is the Cook Inlet area. A few small (e.g., 5,000 barrels per day) production facilities using a combination of biomass and natural gas (BGTL) could yield favorable greenhouse gas emissions without the need to capture and sequester greenhouse gas emissions. Such a facility could possibly qualify for federal loan guarantees. Further analysis would be required to determine whether, and under what conditions, the fuel produced from such a facility would qualify under the renewable fuel standard provisions of the Clean Air Act.

Another option for Alaska would be to construct an alternative fuels plant that would use a combination of coal and natural gas to produce liquid fuels (CGTL). This feed combination has process advantages that could reduce overall production costs, but whether this combination makes economic sense depends on the delivered costs of coal and natural gas. A moderate size facility (e.g., 20,000 barrels per day) would require a major increase in Alaskan coal production and may require the development of new natural gas production in the Cook Inlet area. Lifecycle greenhouse gas emissions associated with the production of fuels from a CGTL plant are likely to be much lower than a coal-only alternative fuels plant, but still higher than those from the corresponding petroleum fuels. To reach parity with conventional petroleum would require capturing and sequestering greenhouse gases that would otherwise be emitted at the production facility. Oil producers in the Cook Inlet basin might be interested in purchasing captured carbon dioxide for use in enhanced oil recovery.

In the preceding, I have emphasized alternative fuel concepts that involve natural gas, since such concepts might give Alaska a competitive advantage as compared to other U.S. locations. Other concepts such as using coal, biomass, or a combination of both as a feedstock are possible. Whether Alaska affords a competitive locale for such production facilities depends on local construction costs and the costs of delivering suitable feedstocks to the facility.

Transport of finished fuels, such as diesel, jet, and home heating oil, to Alaskan ports represents a small fraction of the total costs of delivering fuel to these ports. Consequently, local demand in Alaska, whether civilian or military, is not a significant factor in determining whether Alaska is a favorable location, as opposed to other U.S. locations, for alternative fuel production facilities.

Question 2-- Economic Benefits of Coal-to-liquid and Coal/Biomass-to-liquid Fuels (S. 937): *You've researched the economic benefits of coal-to-liquid and coal/biomass-to-liquid fuels. In one scenario, you project that the United States could develop an industry capable of producing 3 million barrels a day by 2030. Can you describe the economic value of that*

production to the United States, especially in terms of how much less we would spend to acquire foreign oil, the government revenues that would be generated, and any potential impact on global oil prices?

Answer 2: In our 2008 report on liquid fuels from coal, we examined the economic benefits of domestic production of alternative fuels. The most substantive benefits are those associated with the economic profits of domestic production and reductions in the world oil price.
Three million barrels per day of alternative fuels production would reduce imports of petroleum by about $120 billion dollars per year. This estimate is based on a world oil price of $100 per barrel. If production costs, including a reasonable rate of return on capital investments, are below the prevailing market price for oil, a domestic alternative fuels industry would generate economic profits. For example, once an alternative fuel technology, such as CBTL becomes mature, we expect that production costs could be much lower than those of first-of-a-kind facilities. In 2011 dollars, $75 per barrel might be possible. At world oil prices of $100 per barrel, this production cost would yield an economic profit of $25 per barrel, or equivalently, $27 billion per year if annual production is 3 million barrels per day. Through income taxes, about a third of these economic profits would go to the federal government, and thereby broadly benefit the public. Smaller amounts would go to state and local governments.

Fundamental economic considerations indicate that lower world oil prices will result from any increase in liquid-fuel production anywhere in the world, whether it be conventional petroleum extraction or from unconventional resources such as tar sands or from alternative fuels from coal, biomass or natural gas. Our research indicates that an alternative fuel production level of 3 million barrels per day could cause world oil prices to drop by between 2 and 5 percent, as compared to what they would otherwise be. Assuming that a 3 million barrel per day industry is operating in 2030 and that the world oil price is $100 per barrel at that time, the analysis that we published in 2008 indicated that the value of the world oil price reduction to the U.S. economy is a savings of between $10 and $25 billion per year. These benefits are in addition to the economic profits discussed above.

Since publication of our 2008 report on coal-derived liquids, very little progress has been made toward obtaining early production experience. For that reason, a very aggressive national program in coal and coal/biomass fuel production would be required to achieve a production level of 3 million barrels per year by 2030.

Question 3--CTL Abroad (S. 937): *We often hear about the investments that other countries, particularly China, are making in alternative and renewable technologies. Can you discuss any investments that China – and perhaps India and other nations – are making into CTL fuels?*

Answer 3: Our main source of global CTL fuel developments is the National Energy Technology Laboratory. We have also discussed CTL development with senior Chinese government officials. Within China, two CTL plants are operational. One is a small facility 2,500 barrels per day) that produces gasoline using the ExxonMobil coal-to-methanol-to-gasoline process. The other is a facility designed to produce 24,000 barrels per day of fuels using a method generally referred to as *direct liquefaction* of coal. This facility is the first direct liquefaction facility built at a significant scale since the end of the Second World War. We do not know whether it will be able to reach and sustain operations at or near its design capacity.

A number of additional CTL plants in China had been announced, but all of these appear to have been placed on hold. In addition to CTL plants, China also has about 35 facilities that gasify coal to produce various chemicals. As such, these plants provide China with extensive experience in technology that is directly applicable to alternative fuels production.

Press reports indicate that two large CTL plants have been approved by the Indian government. Within India, the major investors are reported to be Tata Steel and Jindal Steel and Power, Ltd. We do not have information regarding the level of design work that has been completed on either of these two projects.

Question 4--Oil Shale (S. 937): *Your organization has estimated that the U.S. has about 800 billion barrels of technically recoverable oil shale. Can you provide the Committee with an assessment of the federal government's current approach to oil shale? Do you believe federal policies are helping, hindering, or hurting efforts to commercialize this resource?*

Answer 4: I have examined the commercial leasing rules published in 2008 and find them to be seriously deficient. Basically the oil shale leasing rules were modeled on existing rules for coal and oil leasing. The rules do not take into account the geographic concentration of the oil shale resource base, the fundamental uncertainties regarding the economic, environmental, and technical performance of oil shale production technologies, and the national energy security benefits of being able to produce eventually a few million barrels per day of fuel (gasoline, diesel, and jet) derived from oil shale. My June 3, 2011 testimony before the Energy and Power Subcommittee of the House Energy and Commerce Committee further amplifies on this matter and suggests areas where Congress might offer direction.

It is my understanding that the Department of the Interior is conducting a review of the commercial leasing rules for oil shale. At this time RAND does not have sufficient information to make an informed assessment of the impact of current or prospective federal policies on the commercialization of oil shale.

Question 5--Energy Security as a Priority: *One of the greatest benefits of coal-derived fuels is their ability to provide our military with a more stable, domestic source of the energy. Section 526 of the 2007 energy bill effectively sets us on a course to rely even more upon the unstable regions where many of our military men and women are now deployed. Which do you believe is the greater national security imperative: the potential to source military fuel from domestic resources, or the ability to reduce greenhouse gas emissions by maintaining the status quo established by Section 526?*

Answer 5: RAND research on alternative fuels shows that viable approaches to produce alternative fuels are available that would allow coal and other fossil fuel resources to be used to produce alternative fuels without increasing greenhouse gas emissions. Specifically, research by RAND and others shows that using a combination of fossil fuel resources and biomass can result in lifecycle greenhouse gas emissions that are significantly lower than those associated with conventional petroleum products or with certain biofuels that receive favorable treatment under Renewable Fuels Standard provisions of the Clean Air Act.

Full repeal of Section 526 is unlikely to have a significant impact on the development of a domestic alternative fuels industry. First, government purchases account for less than 2 percent of national fuel consumption. Second, potential investors in alternative fuel production projects will likely remain wary of the possibility of future legislation that will place a cost on emitting greenhouse gases. Considering the growing evidence of the deleterious impacts of increasing atmospheric concentrations of greenhouse gases, such legislation is likely over the financial lifetime of an alternative fuel facility. Consequently, alternative fuel production projects that are based on fossil energy resources are likely to include management of greenhouse gas emissions so that net emissions are in line with those of conventional petroleum products.

In my written testimony submitted to the Committee on June 27, 2011, I provided options for minor revisions to Section 526 that would serve to reduce fuel procurement costs, and reduce barriers to the procurement of fossil-derived alternative fuels that can be produced with greenhouse gas emissions that are comparable to those of conventional petroleum-based fuels.

Question 6--Long-term Contracting Authority: *What role do you believe long-term contracting authority for the Department of Defense could play in the development of a robust alternative fuels industry? Do you believe that the military's efforts to bring alternatives into the marketplace would have any positive effects for other industries, including the commercial aviation and maritime industries?*

Answer 6: Long-term contracting authority will not have any appreciable role unless it is coupled with other measures that would provide incentives for investments in alternative fuel projects. Otherwise, the military will be purchasing at competitive prices, and therefore offering no incentive beyond the civilian marketplace. Measures to provide incentives for investment include investment subsidies (such as direct grants and tax credits), loan guarantees, production subsidies, and price floors. The cost effectiveness and risks of these various measures differ considerably. By examining incentives from the perspective of the federal government as well as private investors, our analysis revealed that a balanced and cost-effective approach would include a price floor on purchases of fuel from pioneer production facilities, an investment incentive (such as an investment tax credit, a loan guarantee, or both), and an income sharing agreement, in the event that world market oil prices significantly increase during the term of the incentive agreement.

While properly prepared alternative fuels are no less able than conventional fuels for meeting the needs of the Defense Department, they offer no particular tactical or operational benefit. Therefore, the only significant benefit of Defense Department purchases would be to promote early production of fuels that have application in the broader civilian market. This raises the issue of whether incentives for early production should be placed within the Defense budget, as opposed to within the budget of the Department of Energy.

Questions from <u>Senator Udall</u>

Question 7: *Your report Alternative Fuels for Military Applications recommends that "Fischer-Tropsch fuels are the most promising near-term options for meeting the Department of Defense's needs cleanly and affordably." (p. xi)*
Your report did not evaluate the amount of water required to produce this level of alternative fuels, or the amount of wastewater that would be created. It did not assess the discharge of this contaminated water, or protection of surface or ground waters. Your report did not compare the impact on water use of F-T coal to liquid fuels compared to advanced biofuels. Given that your report did not assess the impact on water quantity or quality of producing military fuels, how can you credibly claim that using this process can meet the Department of Defense's fuel needs both "cleanly and affordably"?

BACKGROUND:
In the 1990s, Bechtel performed a series of studies for DOE in which they evaluated a variety of coal liquefaction schemes for indirect liquefaction (Bechtel 1998) and determined the following water needs:
"For eastern coal 7.3 gal of water/gal F-T liquid
"For western coal 5.0 gal of water/gal F-T liquid"
Emerging Issues for Fossil Energy and Water, NETL, June 2006
"Before coal liquefaction can make a significant contribution to meeting the demand for liquid fuels, it will be necessary to ensure that sufficient water resources are available at proposed plant sites." --ibid

Answer 7: The report on *Alternative Fuels for Military Applications* drew on our 2008 report: *Producing Liquid Fuels from Coal: Prospects and Policy Issues*. That report did examine water requirements to produce liquid fuels from coal as well as other environmental issues, including greenhouse gas emissions, air quality, land use, ecological impacts, and water quality. With regard to water consumption, our analysis suggests that the practical lower limit is about 1.5 gallons of water per gallon of F-T liquid. The amount of water that will be consumed in a CTL plant will depend on the availability of suitable water supplies, including groundwater. Where water supplies are abundant and inexpensive, as they are in certain locations in the central and eastern United States, CTL plant designs may involve consumption of over 10 gallons of water per gal of F-T liquid. These estimates do not include water used during coal mining or during the production of biomass.

In contrast, plants built in arid regions will likely employ methods to minimize the consumption of water. How much will depend on cost-benefit and regulatory analyses that will be done as part of the front-end engineering design of such facilities. It is possible that water consumption may be a limiting factor in locating CTL plants in arid areas. At present, this remains an unresolved issue. If and when industrial interest in CTL development grows to the point at which several large plants are planned in arid regions, local, state, tribal and federal governments should assess how long-term water supplies and projected demand will be affected. Otherwise, heavy water usage in early CTL plants will compete with other priority uses and possibly foreclose further CTL development.

We did not do a comparative analysis of water requirements for various alternative fuel production concepts. Available information suggests that water requirements for F-T fuels are

comparable or lower than other near-term biofuel production concepts for middle distillate fuels, including hydrotreated renewable oils and algae-derived fuels.
Consistent with current regulations and modern engineering practices, Fischer-Tropsch facilities will be built with zero discharge of water. With regard to both coal-derived fuels and biofuels, the primary water quality concerns are associated with feedstock production. In the case of coal mining, these issues include mine drainage, hydrological impacts, and the management of coal-slurry impoundments. For biofuels, the water quality issues depend very much on how the feedstock is produced, including whether irrigation is used for feedstock production.

Question 8: *In your testimony (page 3) you state that, "advanced research in photosynthetic approaches for alternative fuels production offers the prospect of even greater levels of sustainable production." In this case, how do you define, "sustainable production"? And would you consider liquid fuel production from coal to be sustainable on the same timescales as that of these photosynthetic approaches?*

Answer 8: In my testimony, "sustainable" implies production that can be carried out over an extended timeframe with acceptable environmental impacts. For coal, our analysis show a sustainable timeframe could be on the order of 100 years. If and when industry interest indicates that large-scale development of a coal-derived alternative fuel industry is likely, a review of the legislation and regulations governing mine safety, environmental protection, and reclamation may be appropriate to assure that production will be sustainable.

Advanced photosynthetic approaches, such as algae and certain biochemical approaches for liquid and gaseous fuels production, are at the research stage. If and when they will be commercially viable approaches for alternative fuel production remains highly uncertain. Whether these approaches will offer sustainable production of millions of barrels per day is also highly uncertain, depending on process details, such as water requirements, that are not well understood at the present state of knowledge. If development efforts are successful, these photosynthetic approaches offer sustainable production over a multi-century timeframe, and possibly with environmental impacts that are more favorable than those associated with coal/biomass approaches. The prospect of successfully achieving a sustainable, environmentally superior process for alternative fuels development warrants federal investment in long-term research and development directed at photosynthetic approaches.

Question 9: *The February 2010 Quadrennial Defense Review notes that climate change will play a significant role in the future security environment for the United States. Additionally, in the Congressionally-mandated report by the National Research Council, National Security*

Implications of Climate Change for U.S. Naval Force, the authors list a number of adverse impacts that climate change will have on U.S. Naval operations, and U.S. national security, in general. For example:
"climate change can act as an accelerant of instability or conflict" (page 20)
and,
"Viewed from a national security standpoint, these [climate-induced] changes would likely amplify stresses on weaker nations and generate geopolitical instability in already vulnerable regions." (page 21)
And a number of reports, including the recent America's Climate Choices suite of reports from the National Research Council, affirmatively attribute climate change to increasing levels of greenhouse gases in the atmosphere.
In your testimony you state (page 9) that Congress ought to consider an amendment to Section 526 of the Energy Independence and Security Act of 2007:
"suggest consideration of an amendment to Section 526 that would allow the government to target purchases of alternative fuels derived from fossil fuel resources (such as coal, natural gas, or oil shale) if … lifecycle greenhouse gas emissions are no more than five percent above the lifecycle greenhouse gas emissions of their petroleum counterparts."
Given this context, isn't such a proposal in direct conflict with the aforementioned national security interests of the United States since greenhouse gas emissions would increase under your proposal?

Answer 9: My testimony does not recommend or advocate specific legislation. As an energy policy researcher working at the RAND Corporation, my testimony is provided for the purpose of informing the Committee and its staff of alternative options. For that reason, the quotation from the testimony regarding consideration of an amendment to Section 526 was preceded by the phrase: "If the intent of Congress is to promote the early production of alternative fuels with greenhouse gas emissions that are comparable or better than those of their petroleum counterparts, … "

Information on the adverse impacts of increasing atmospheric concentrations of greenhouse gases suggest that national security consequences represent but a single dimension of a growing global environmental problem. If Congress is interested in reducing U.S. greenhouse gas emissions, I strongly suggest consideration of broad-based approaches, such as placing a fee on carbon dioxide emissions. Liquid fuel use by the U.S. military generates less than 1 percent of national greenhouse gas emissions. Targeting military fuel consumption, which is basically the impact of Section 526, while ignoring the much larger civilian sources of greenhouse gas

emissions is not an effective approach to addressing the national security or other adverse impacts of rising atmospheric greenhouse gas concentrations.

With regard to the suggestion of "no more than five percent," a number of "conventional" petroleum products that government is allowed to purchase are characterized by lifecycle greenhouse gas emissions that are above 5 percent of the U.S. average. For example, fuels produced from heavy oils produced in California or imported from Venezuela exceed the 5 percent threshold.

Question 10: *With respect to your testimony on Section 7 of S.937 (Multi-year contract authority for DOD procurement of alternative fuels), do you have any comments on the manner in which the Congressional Budget Office currently scores such long-term contracting authority? Do you feel their accounting methodology is a true and accurate representation of the actual cost to the federal government? Does it account for the cost savings accrued over the lifetime of the contract or for the fact that the federal government would be purchasing some form of fuel, electricity, etc. anyways?*

Answer 10: These specific questions deal with issues that we have not examined and, therefore, respectfully defer comment.

Question 11: *In 2007 you testified in front of Congress that the BLM should "rescind the requirement to prepare a programmatic EIS for a commercial leasing program [for oil shale]," and instead you recommended that the federal government phase in a process based upon research results. Last month, you testified in front of the House Energy and Commerce committee that "It would not be advisable to develop detailed regulations…until more information is available on process performance and impacts." Just last week, in front of the same committee you stated in written testimony that the 2008 commercial leasing regulations are "seriously deficient." Can you say more? Does the rush to lease jeopardize the development of oil shale?*

Answer 11: The research that we conducted on oil shale in 2004 and 2005 indicated that not enough information was available to assess the environmental impacts of large scale oil shale development. Major information shortfalls included:

1) Options for mitigating damage to plants and wildlife;

2) Reducing uncertainties associated with ecological restoration after oil shale production activities;

3) Understanding the subsurface environment, including hydrological, geochemical, and geophysical phenomena that could result from oil shale development; and

4) The air and water emissions associated with advanced processes for oil shale development.

It was and continues to be our judgment that these information shortfalls preclude moving forward with a programmatic EIS for a full-scale commercial leasing program.
The written testimony provided to the Energy and Power Subcommittee of the House Energy and Commerce Committee on May 5 and June 3 and to the Senate Energy and Natural Resources Committee on June 7 represents our current perspective on the challenges of moving forward with oil shale development. The emphasis should be on obtaining information from a limited number of pioneer facilities. The leasing program should be designed to motivate investment in such pioneer plants. A rush to a commercial leasing program could seriously jeopardize the development of oil shale and could result in adverse socioeconomic and environmental impacts that could have a profound effect on northwestern Colorado and northeastern Utah.

Question 12: *Last month you testified in front of a house committee that in regard to oil shale development, "It would not be advisable" to proceed with "full-blown commercial development" until we know more. How much do we know about the research that is going on, whether it will bring us to a point where we can even contemplate commercial development of America's oil shale resources? In the past, you've also raised concerns about water quantity and quality. Has research addressed these concerns?*

Answer 12: Formal research by RAND on oil shale terminated with publication of our 2005 report. Since then, I and other staff have tried to maintain an awareness of what progress is occurring. With regard to the four information shortfalls discussed in the answer to Question 11, we are not aware of significant progress, although certain firms interested in oil shale development may have information that is not publicly available. Government support of research that would address these information shortfalls is very small.

Question 13: *What can you tell us about other attempts to develop oil shale around the world; Estonia being the nation that is mentioned the most often? What can you tell us about these other experiences with oil shale? What have been the results? Is it the case that Estonian is struggling to manage the tremendous volumes of toxic waste from their years of oil shale development?*

Answer 13: In Estonia, oil shale is primarily used as a solid fuel for the generation of electric power. A small amount is converted to a liquid fuel, all of which is used in power generation or

cogeneration plants. To our knowledge, oil shale in Estonia is not used to produce transportation fuels. A recent environmental assessment of oil shale produced and consumed in Estonia indicates severe impacts have occurred. These include subsidence over underground mining areas, overexploitation of underground waters, pollution of surface and underground waters, and the emission of hazardous air pollutants (Gavrilovaa, Olga, et al, "A life cycle environmental impact assessment of oil shale produced and consumed in Estonia," *Resources, Conservation and Recycling*, Volume 55, Issue 2, December 2010, Pages 232-245).

China also produces a small amount of liquid fuels from oil shale. We have not been able to locate information on the environmental impacts of oil shale production in China.

Questions from <u>Senator Portman</u>

Question 14: *Would you see it as a positive step for development of domestic energy resources if government agencies – the Department of Defense specifically – were given authority to enter into long term purchasing agreements for alternative fuels?*

Answer 14: This question is similar to Question 6 posed by Senator Murkowski. Please see Answer 6.

Question 15: *Would those long term purchasing agreements assist alternative fuels developers in obtaining the private financing they need to move forward with projects?*

Answer 15: They could if such purchasing agreements protected investors against the risk that world oil prices might drop for an extended period during the financial lifetime (about 20 years after operations commence) of an alternative fuel project. In particular, if DoD were given authority to grant long-term contracts, it could offer price floors to investors to protect them against low world oil prices. To balance this benefit to investors, DoD could require price discounts during periods of high oil prices. To be more cost-effective, however, fuel contracts designed to promote early commercial production should be part of a broader package of incentives, such as investment tax credits, accelerated depreciation, and loan guarantees.
The RAND analysis also argues against long-term contracts that establish a guaranteed or fixed price without recourse to adjusting prices. Such agreements are rarely observed in contracts between private parties and are far less likely to serve the federal government's interests. More of this is discussed in Camm, Bartis, and Bushman, *Federal Financial Incentives to Induce Early Experience Producing Unconventional Liquid Fuels,* Rand Corporation, TR-586-AF/NETL, 2008.

Question 16: *How effective would you say the Department of Energy has been in utilizing its Loan Guarantee Program?*

Answer 16: Loan guarantees can strongly encourage private investment. However, they encourage investors to pursue early alternative fuels production experience only by shifting real default risk from private lenders to the government. By their very nature, the more powerful their effect on private participation, the higher the expected cost of these loan guarantees to the government. In addition, loan guarantees encourage private investors to seek higher debt shares that increase the risk of default and thus increase the government's expected cost for providing the guarantee. Consequently, it is appropriate that the government should take great care in employing loan guarantees to promote early experience in producing alternative fuels.

RAND has not conducted an analysis of the effectiveness of the Department of Energy in utilizing its Loan Guarantee Program, and therefore the preceding observations should not be interpreted as justifying the pace or portfolio of the Department of Energy's loan guarantee program. It is my understanding that the Department of Energy has not yet made a commitment, either conditional or final, to provide a loan guarantee to any project that would produce an alternative liquid fuel.

Question 17: *Are you familiar with Section 526 of the 2007 Energy bill and the restrictions it places on the federal government's ability to purchase alternative fuels? Does that policy make any sense in a world where energy prices are spinning out of control and we are increasingly dependent on foreign energy sources?*

Answer 17: I am familiar with Section 526 and the restrictions it places on the federal government. Please see my responses to Question 5 from Senator Murkowski and Question 9 from Senator Udall.