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RENEWABLE FUELS INFRASTRUCTURE

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY

OF THE

COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE

ONE HUNDRED TENTH CONGRESS

FIRST SESSION

TO

RECEIVE TESTIMONY ON RENEWABLE FUELS INFRASTRUCTURE

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RENEWABLE FUELS INFRASTRUCTURE

TUESDAY, JULY 31, 2007

U.S. SENATE,
SUBCOMMITTEE ON ENERGY,
COMMITTEE ON ENERGY AND NATURAL RESOURCES,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:30 p.m. in room SD–366, Dirksen Senate Office Building, Hon. Byron L. Dorgan presiding.

OPENING STATEMENT OF HON. BYRON L. DORGAN, U.S. SENATOR FROM NORTH DAKOTA

Senator DORGAN [presiding]. We'll call the hearing to order. This is the hearing of the Senate Energy Natural Resources Committee, the Subcommittee on Energy. Welcome all of you today.

The hearing today is to address how to overcome the hurdles in order to achieve our objectives of reducing our dependence on foreign sources of oil. We do that by developing an infrastructure to use our expanding home grown renewable fuels to help meet our Nation's transportation needs.

Our witnesses today will include Senator Klobuchar, representatives of the Administration, stakeholders dealing with the policy, the technical and the implementation of expanding renewable fuels infrastructure so that producers of renewable fuels can get their products to market and see those products used.

Now we use about 140 plus billion gallons of fuel each year. Of that, 140 billion gallons about 60 percent comes from off our shores. From imported oil that comes from unstable regions of the country: Saudi Arabia, Kuwait, Nigeria, Venezuela and others.

Our pathway to reducing that—excessive and I think, dangerous, dependence on foreign sources of oil is to use home grown, renewable fuels. However effective action on renewable fuels stands on a three legged stool. One is to produce the fuel. A second is to produce vehicles that can use the fuel, most notably E85. Third is to develop the pumps that can dispense the blends up to E85.

The bill that we passed in 2005, in which I was one of the authors on the Energy Committee, included the Renewable Fuel Standard. At that point, we passed an eight billion gallon standard out of this committee, went to conference, and ended up with seven and a half billion gallons by 2012. Well, obviously times have moved on in a very aggressive and in a very favorable way for renewable fuels.

This Energy Committee passed legislation this year to increase the existing renewable fuel standard to 36 billion gallons by the

year 2022. This committee has done that which is—within just the last couple of months, and in June, it was passed by the full Senate.

Now if we use 140 billion gallons of fuel a year and we blend ethanol, for example, 10 percent of every gallon is ethanol. That means we have a market of 14 billion gallons. That's the total market. Unless you're using blends of 20, 30, 40, 50 percent or E85, in which you have 85 percent of the fuel represented from ethanol.

The Senate CAFE provisions required an action plan by the Department of Transportation to ensure that by model year 2015, 50 percent of the new vehicles produced would be alternative fueled vehicles. Further the CEOs of the Big Three automakers announced earlier this year a commitment to make 50 percent of their vehicle production either E85, flex fuel or capable of running on biodiesel by 2012. Well, in order to create new markets for ethanol, in my judgment, we need to pass similar aggressive policies dealing, not just with production or renewable fuel standard, but also with respect to the development of the infrastructure.

How do you get this fuel to the vehicles and to the consumers who are driving these vehicles? We need a much greater commitment to renewable fuels and the infrastructure, not only from Congress, but also from the Federal agencies, from industry stakeholders, and from State and local governments as well. The recent GAO report released in 2007 says DOE lacks a strategic approach to coordinate increasing production with infrastructure development in vehicle needs.

That's obvious. I agree that is the case. I mean we have a circumstance where we're rushing headlong to produce a substantial amount of renewable fuels and a substantial renewable fuel standard, but you will not find circumstances with respect to the infrastructure that meets what we're aspiring to do. Now, my State is ten times the size of Massachusetts in land mass, but we have only about 16,000 flex fuel vehicles in a State ten times the State of Massachusetts. There are 23 places in my State where you can pull up to some fuel pumps and pump in E85. So you have 16,000 people driving flex fuel vehicles and 23 locations in all of that land mass to be able to find E85. Other States have similar circumstances that GAO found, in this report by the way, that California has 250,000 flex fuel vehicles and one publicly accessible refueling station in San Diego. One.

Is that a failure? It seems to me, it is. We have 170,000 service stations in this country and roughly 1,200 of them have E85 pumps. That's less than 1 percent of the service stations. I have a chart that will show you that, shows that where the service stations exist in the middle part of the country, particularly in Minnesota and a number of other Midwestern States and Northern Plains States. That's not where the flex fuel vehicles are. The heaviest concentration of flex fuel vehicles have no relationship to where the infrastructure is.

So, I mean, I think we have a very serious problem. Secretary Karsner testified previously before this committee—before rather, Appropriations Subcommittee that I held. He said that we have not devised sufficient policies with respect to scale and rate that would be commensurate with the magnitude of the challenge. He was

talking about this infrastructure issue. He went on to say that we went on to installed 450 E85 pumps nationwide last year.

So if we do 450 pumps a year, that'll take about 100 years to install at a scale of pumps that would even matter. We don't have 100 years. We probably don't have 10 years because when you see all these plants being built to produce this fuel. If we don't find a way to move this fuel through an infrastructure to people who are going to use it, we're going to see a collapse in that market, and that's the last thing that we should want.

One more point. The oil industry is not helping either. I've seen reports that the Big Oil companies have recently posted pretty substantial profits, record profits. All of you have seen them. Let me describe a few of the barriers that they're putting in place to discourage retail gas stations from offering E85.

About 57 percent of the retail gas stations are owned or franchised by the major integrated oil companies. *The Wall Street Journal* in April had an article titled,"Fill 'er Up with Ethanol? One Big Obstacle is Oil." Exxon Mobil and British Petroleum require their franchised station to buy fuel exclusively from them, and neither company offers E85. If a station owner would wish to purchase E85, then they have to apply for an exception to purchase E85.

Another example is Conoco-Phillips. A memo to their franchisees says that the company doesn't allow E85 sales on the primary island under the cover canopy where the gasoline is sold. Stations must find another spot.

Chevron-Texaco and Conoco-Phillips station owners are not allowed to list E85 on their primary sign listing fuel prices and must pay to erect a separate sign if they wish to advertise E85. BP will not allow its franchised stations to offer payment by credit card at E85 pumps.

Does this sound reasonable or thoughtful? It doesn't to me. It's the same old game. Build a fence. Protect your own turf.

This is about national interest. This is about making this country less dependent on oil from troubled parts of the world, and if we don't do this as a team, if we don't do this together as a country, we're going to be in big trouble. We're going to build a lot of plants right now. We're on the road to building a lot of plants to produce this fuel. If we don't have the infrastructure to produce that fuel for the vehicles in this country, we're going to see a collapse with respect to these markets.

I'm particularly unhappy to see what the major oil companies are doing. It is not new for them to buy quarter page ads in newspapers telling us that producing ethanol was a bad situation. They didn't like it. Well, I'm not surprised they didn't like it. But what does surprise me is that they make record profits, and they spend their time trying to figure out how they're going to keep E85 off their gasoline island when they control nearly 60 percent of the gasoline stations in this country. That has to change.

So, the purpose of this hearing is to try to think through what are the policy changes that can give us a chance to build the infrastructure so that we have an opportunity to make this successful. To make successful the use of renewable fuels in significant quantity and make us less dependent on foreign sources of oil. We've got to get this right, and we don't have a lot of time to do it.

I want to call on the ranking member for a brief comment and if others want to make comments just for a minute or so, I'd be happy to allow them to do that. Then I'll ask Senator Klobuchar to provide her testimony. At which point we will then have Secretary Karsner and then go on to the final panel.

Senator Murkowski.

STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR FROM ALASKA

Senator MURKOWSKI. Thank you, Mr. Chairman. I didn't catch all of the comments but walked in at the end. It is always interesting to catch the conversation halfway. I do appreciate the hearing this afternoon.

We all understand the need to avoid unintended consequences in all areas. Certainly as we are trying to figure out how we build a domestic biofuels industry, we need to focus on the developing technology solutions to address the challenges that this burgeoning biofuels industry will face.

The infrastructure we have today is built around the need of petroleum based fuels. Ethanol has different properties, more corrosive than gasoline, more easily adulterated by water during transport. We certainly hope that as the future unfolds research is going to help us address these challenges. Material science may devise ways to make automotive components that are compatible with higher blends of ethanol. New additives that make ethanol repel water molecules are under investigation.

But I think in the first years of the RFS we can anticipate a great deal of ethanol will be needed to be transported by rail or by truck. We know that this volume of transport could strain our existing capacity. And of that 168,000 gasoline stations in the U.S. today, 1,251 have E85 pumps. Industry and all levels of government will need to coordinate closely to address these problems.

Now, I want to note in particular, that the RFS in the Senate passed bill includes the 48 contiguous States but allows the State of Alaska and also Hawaii the option of joining voluntarily. I do believe that we need to continue research on biofuels that specifically addresses the unique challenges of using both ethanol and biodiesel in our colder environments.

Mr. Chairman, I know that we've got a lot of folks on the panel today, and I look forward to hearing from those who are scheduled.

Senator DORGAN. Thank you. Are there others who wish to make a brief opening statement?

Senator Craig.

STATEMENT OF HON. LARRY E. CRAIG, U.S. SENATOR FROM IDAHO

Senator CRAIG. Mr. Chairman, thank you for the hearing.

Today oil is selling for 78 dollars a barrel, the highest in more than a year. In Idaho I have 72 alternative fuel stations which include—compressed gas, E85, propane, electricity, biodiesel, hydrogen and liquefied natural gas. Of those 72 stations only four are equipped with E85 pumps. According to the National Ethanol Vehicle Coalition, Idaho has only one E85 per 4,500 flex fuel vehicles.

Earlier this year, of course, you and I introduced what I think and what you think is a fair and balanced approach in an energy compromise that we're working on. It doesn't work if the infrastructure doesn't come behind it. I think it's going to be extremely important for that to happen.

We've debated in this committee, renewable energy standards, 30 billion gallons, 15 cellulosic, 15 corn based. We're talking about CAFE for automobiles, first time in 27 years. We're talking about looking for some additional traditional fuel sources off shore. It really is about energy security. It really is about us doing everything we can possibly do for our consumers in a very diversified portfolio of energy needs.

Delivery systems are everything. In my State of Idaho the two stations that I'm aware of with E85 are 160 miles apart. That doesn't make for a reasonable approach toward these alternatives.

Now I would be the first to tell you, Mr. Chairman that the infrastructure that now serves our consuming public with a station on every corner didn't happen overnight. But now that it's there and hundreds of billons of dollars have been spent of the private sector putting it there. I would hope that the goal of that facility is to serve its consuming public and to do so in a way that offers all of these alternatives as a part of the energy supply for our transportation fleet in this country. So thank you for holding the hearing.

Senator DORGAN. Senator Craig, thank you. Would others wish to make a brief comment?

Senator Tester.

STATEMENT OF HON. JON TESTER, U.S. SENATOR FROM MONTANA

Senator TESTER. Very quickly and very brief, Mr. Chairman—I do want to thank you. I think my, the infrastructure that we have in my town is very similar to Idaho or maybe a little less. In fact I think the only one that I—

Senator CRAIG. In fact Jon would appreciate it.

Senator TESTER. Yes.

Senator CRAIG. One station in Sandpoint.

Senator TESTER. Yes.

Senator CRAIG. The other one's in Port Elaine. So you can stop in Sandpoint and refuel. No, the other one's in Lewis.

Senator TESTER. Yes.

Senator CRAIG. That's over 60 miles.

Senator TESTER. It's far too few. That's for sure. I just want to make a comparison.

I'm a farmer. If I can't get my crops to the shelf, I go broke. If we can't get biofuels to the consumer, it will never work. So it needs to happen. No ifs, ands, or buts about it, if we're going to try to achieve some semblance of energy security here.

Senator DORGAN. Anyone else?

Senator Klobuchar, thank you for joining us. Minnesota has made some significant strides, although even that remains far short of where we need to be. But we appreciate your interest in coming, and we would ask you to proceed.

We would ask all of the witnesses to limit their comments to 5 minutes, and we will include their entire testimony as a part of the permanent record.

STATEMENT OF HON. AMY KLOBUCHAR, U.S. SENATOR FROM MINNESOTA

Senator KLOBUCHAR. Thank you so much, Chairman, for holding this important hearing and for inviting me to testify.

As you know ethanol and biodiesel, corn based ethanol, soy bean based biodiesel and we move and hope to move to the next stage with cellulosic ethanol, are near and dear to Minnesota but my interest goes far beyond that. I believe that our ability to produce a reliable, low cost, domestic source of energy is also an issue of national security.

The United States spends more than 400,000 dollars per minute on foreign oil. The money is shipped out of our economy adding to our enormous trade deficit and leaving us vulnerable to unstable parts of the world to meet our basic energy needs. There are those who would have us believe that our energy security is decades away. But you can ask any Minnesota farmer and there—they'll tell you we're ready to go today.

In spite of the clear advantages of renewable fuels, our rural economy and our energy security, we really face a chicken and egg type problem when it comes to the challenge of making them available to more drivers. The automakers are reluctant to promote flex fuel vehicles in areas where there are no E85 pumps, as Senator Craig has pointed out. Gas stations don't want to put any E85 pumps where there are no flex fuel vehicles. So we need to tackle both ends of the problems.

On the issue of vehicles, Mr. Chairman, I appreciate the work that you and the rest of this committee have done in passing the energy bill that would require automakers to equip 50 percent of their new vehicles with alternative fuel technology by the year 2015. I particularly remember Senator Craig's comments when we discussed the gas mileage standards. I appreciated the work of everyone on this committee.

On the other end of the problem, the ability to find gas stations that sell E85 and biodiesel. It is crucial that Congress act to provide more American drivers with access to renewable fuels. As you know, Mr. Chairman, Minnesota ranks first in the Nation in E85 infrastructure. Of the 1,251 gas pumps that Senator Murkowski mentioned, 320 of them, but who's counting, are located in Minnesota.

I know, Mr. Chairman that this is of particular interest to you, and that is how did Minnesota come to be a leader in this area? The answer I believe comes down to leadership. Leadership in State government in setting statewide ethanol standards and providing grants for E20 pumps, leadership of the Minnesota corn growers who formed a coalition with the American Lung Association of Minnesota, the National Ethanol Vehicle Coalition and others to promote E85 across the state. Finally leadership on the part of the ethanol producers who developed innovative marketing arrangements whereby they sell E85 directly to gas stations and cut out the oil company owned middle men. In Minnesota about two-

thirds of the gas stations that sell E85 purchase it directly from the ethanol producer. That's why they can afford to sell it at a price that's attractive to customers.

So, what can we at the Federal level learn from Minnesota's example? First, wherever possible, we should encourage ethanol producers to sell directly to gas stations. Outside of Minnesota ethanol is generally sold under long-term contract to blending terminals which are part of the oil company owned pipe line system. The terminals then re-sell the ethanol to gas stations. In essence the price that the consumers pay for ethanol is usually set by ethanol's biggest competitor, the oil companies.

When ethanol producers sell ethanol directly to gas stations without a middle man, drivers get the benefit of low cost fuel. The ethanol producers collect the 51 cents per gallon Federal blenders credit instead of the oil companies and America's energy dollars come right back to our rural communities.

We've seen this model work in Minnesota pioneered by the Chippewa Valley Ethanol Company in Benson. They currently supply roughly 100 gas stations that sell E85 at 60 cents below the price of gas. That's why I've introduced a bill that would help other states follow Minnesota's lead. The Ethanol Education and Expansion Act which would provide tax credits for ethanol producers to install the type of equipment they need to sell directly to gas stations. I'd like to thank you, Mr. Chairman, for co-sponsoring this legislation.

Second, we should not allow the oil companies to block their franchised gas station from selling renewable fuels. This is what you were referring to. I've heard from gas stations in Minnesota that their franchise contracts make it so difficult to sell ethanol and biodiesel that many of them just can't do it. They're not allowed to sell renewable fuels under the main canopy that bears the oil company's brand name. They can't convert the pumps and tanks they already have because of a requirement to sell all three grades of gasoline. They're not even allowed to put up signs to let customers know that they have renewable fuels for sale, where the pump is or how much it costs.

I've offered a Right to Retail Renewable Fuel amendment to the energy bill that would prohibit oil companies from placing restrictions on where and how renewable fuels can be sold at gas stations.

The third and final thing we can learn from Minnesota's example is that a modest investment of Federal dollars can yield big results on the ground. The coalition in Minnesota that raised nine million dollars for E85 pumps was started with a grant of just 250,000 dollars from the Department of Energy.

In closing, I would simply state that the scarcity of pumps caused in part by the oil company's unwillingness to allow for competition is the single greatest factor limiting the positive impact the renewable fuels can and should have on our Nation's energy security. If we are serious about finding alternatives to foreign oil we should ensure that drivers in every State have access to E85 and biodiesel. Thank you, Mr. Chairman.

[The prepared statement of Senator Klobuchar follows:]

PREPARED STATEMENT OF HON. AMY KLOBUCHAR, U.S. SENATOR FROM MINNESOTA

Thank you, Mr. Chairman, for holding this timely hearing on the topic of renewable fuel infrastructure, and for inviting me to testify. As you know, ethanol and biodiesel are near and dear to Minnesota, but my interest in them goes far beyond that. Our ability to produce a reliable, low-cost, domestic source of energy has become a question of national security.

The United States spends more than $400,000 per minute on foreign oil. That money is shipped out of our economy, adding to our enormous trade deficit, and leaving us vulnerable to unstable parts of the world to meet our basic energy needs.

There are those who would have us believe that energy security is decades away, but any Minnesota farmer can tell you that renewable fuels are here and ready to use today. However, in spite of the clear advantages of renewable fuels to our rural economy and our energy security, we face a chicken-and-egg type of problem when it comes to the challenge of making them available to more drivers. The auto makers are reluctant to promote flex-fuel vehicles in areas where there are no E-85 pumps, and gas stations don't want to put in E-85 pumps where there are no flex-fuel vehicles.

So we need to tackle both ends of the problem. On the issue of vehicles, Mr. Chairman, I was proud to work with you to include provisions in the Senate-passed energy bill that would require automakers to equip 50 percent of their new vehicles with alternative-fuel technology by the year 2015.

On the other end of the problem—the ability to find gas stations that sell E-85 and biodiesel—it is crucial that Congress act to provide more American drivers with access to renewable fuel pumps.

As you know, Mr. Chairman, Minnesota ranks first in the Nation in E-85 infrastructure—we have 320 pumps out of 1250 in the Nation—far more than any other state. And I know, Mr. Chairman, that it's a question of particular interest to you—how did Minnesota come to be the leader in this area? The answer, I believe, comes down to leadership:

- Leadership in state government in setting statewide ethanol standards and providing grants for E-85 pumps.
- Leadership of the Minnesota Corn Growers, who formed a coalition with the American Lung Association of Minnesota, the National Ethanol Vehicle Coalition, and others to promote E-85 across the state.
- Finally, leadership on the part of the ethanol producers, who have developed innovative marketing arrangements, whereby they sell E-85 directly to gas stations, and cut out the oil company-owned middleman. In Minnesota, about ⅔ of the gas stations that sell E-85 purchase it directly from the ethanol producer, and that's why they can afford to sell it at a price that's attractive to consumers.

So what can we, at the federal level, learn from Minnesota's example? First, wherever possible, we should encourage ethanol producers to sell directly to gas stations. Outside of Minnesota, ethanol is generally sold under long-term contract to blending terminals, which are part of the oil company-owned pipeline system. The terminals then re-sell the ethanol to gas stations. In essence, the price that consumers pay for ethanol is usually set by ethanol's biggest competitor, the oil companies. When ethanol producers sell ethanol directly to gas stations without a middleman:

- drivers get the benefit of a low-cost fuel,
- the ethanol producers collect the 51 cent-per-gallon federal blender's credit instead of the oil companies,
- and America's energy dollars come right back to our rural communities.

We have seen this model work well in Minnesota, pioneered by the Chippewa Valley Ethanol Company in Benson. They currently supply roughly a hundred gas stations that sell E-85 at 60 cents below the price of gas. That's why I have introduced a bill that would help other states follow Minnesota's lead—the "Ethanol Education and Expansion Act" would provide tax credits for ethanol producers to install the kind of equipment they need to sell directly to gas stations, and I would like to thank you, Mr. Chairman, for cosponsoring this legislation.

Second, we should not allow oil companies to block their franchised gas stations from selling renewable fuels. I have heard from gas stations in Minnesota that their franchise contracts make it so difficult to sell ethanol and biodiesel that many of them just can't do it. They have reported cases where:

- they're not allowed to sell renewable fuels under the main canopy that bears the oil company's brand name,

- they can't convert the pumps and tanks they already have, because of a requirement to sell all three grades of gasoline,
- and they're not even allowed to put up signs to let customers know they have renewable fuel for sale, where the pump is, or how much it costs.

I offered a "Right to Retail Renewable Fuel" amendment to the Energy Bill that would prohibit oil companies from placing restrictions on where and how renewable fuels can be sold at gas stations. I'm pleased to report that similar language was passed by the House Energy and Commerce Committee, which will give us an opportunity to examine this issue in conference.

The third and final thing we can learn from Minnesota's example is that a modest investment of federal dollars can yield big results on the ground. The coalition in Minnesota that raised $9 million for E-85 pumps was started with a grant of just $250,000 from the Department of Energy.

In closing, I would simply state that the scarcity of pumps, caused in part by the oil companies' unwillingness to allow for competition, is the single greatest factor limiting the positive impact that renewable fuels can and should have on our Nation's energy security. If we are serious about finding alternatives to foreign oil, we should ensure that drivers in every state have access to E-85 and biodiesel. Thank you, Mr. Chairman.

Senator DORGAN. Senator Klobuchar, thank you very much for telling us about the Minnesota experience. I think most of us know there has been real leadership in Minnesota at the State legislative level and local governments and by others and by you. We appreciate that, and I'm going to let you go and call up the Assistant Secretary. Your testimony is a very important part of the discussion of what works, what doesn't and what we still need to do. Senator Klobuchar, thank you very much.

Senator KLOBUCHAR. Thank you very much.

Senator DORGAN. Next we will hear from the Assistant Secretary of Energy, Mr. Alexander Karsner. He won't mind if we call him Andy. I believe everybody does.

Andy Karsner, the Assistant Secretary for Energy Efficiency and Renewable Energy. I'm just—

Senator CRAIG. This could be a waste of energy.

[Laughter.]

Senator DORGAN. My preference is open curtains and open windows.

Mr. Karsner, Secretary Karsner, thank you very much. You've testified previously, and we appreciate your being here again today. As I indicated your entire statement will be made part of the permanent record, and you may summarize.

STATEMENT OF ALEXANDER KARSNER, ASSISTANT SECRETARY, ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY

Mr. KARSNER. Thank you, Mr. Chairman, and thank you and members of the committee for your leadership on this issue of addressing our gasoline dependency, and for the opportunity to provide comments on improving the Nation's renewable fuels infrastructure.

As we intensify our national effort to develop renewable energy options for transportation, it's vital that we focus on ensuring the retail infrastructure necessary to support our national vision of a domestic clean fuels industry. The large scale introduction of biofuels into consumer markets poses significant challenges throughout the whole supply chain, including of course, retail distribution. These challenges must be effectively addressed to sup-

port the successful achievement of the President's Advanced Energy Initiative launched in 2006 and the 20 in 10 goal for confronting our addiction to oil.

The 20 in 10 goal aims to reduce our gasoline use by 20 percent within the decade. To help achieve this, the President has called for an unprecedented alternative fuel standard requiring the equivalent of 35 billion gallons of renewable and alternative technologies by 2017. Creating certainty by establishing a durable, predictable, alternative fuel standard for the Nation is an important first step necessary to stimulate more investment in retail infrastructure.

To this end, the Department is sharpening its focus on infrastructure issues, which were recently highlighted in a GAO audit and in the national Petroleum Council's report. We are targeting barriers to biofuels growth by forging strategic partnerships with industry, collaborating with other agencies and working with different regions of our country to bring the promise of large scale biofuels distribution to fruition.

For example, we have developed in the Office of Energy Efficiency and Renewable Energy for the first time a biofuels infrastructure team. The team connects the Vehicle Technologies Program and the Biomass Program to promote a comprehensive and coherent approach to the biofuels industry.

The Department is coordinating its fuel delivery work with the Department of Transportation, which has principle responsibility for setting standards in developing policy for pipeline transportation infrastructure and ensuring that these products can be safely handled. We are working with the EPA, which has primary responsibility for testing emissions and certifying fuels to examine the compatibility of intermediate blends such as E15, E20 and other lesser blends than E85 for use in our existing vehicle fleet.

Finally, we have significantly elevated the level of participation, activity and engagement across the Federal Government with our Interagency Biomass R and D Board to ensure a comprehensive Federal approach to addressing key infrastructure barriers. These efforts are focused on reducing duplication, maximizing our efficiency and ensuring an accelerated approach to domestic biofuels deployment in a timeframe that is consequential.

As I have testified many times before, Mr. Chairman, government funding alone will not be sufficient to meet the substantial challenges of changing our Nation's energy portfolio. The deployment of pumps, vehicles and other infrastructure must increase rapidly over the next decade so that consumers have readily available options and access to domestic renewable fuel sources.

As you noted, Mr. Chairman, the latest data indicates there are approximately 170,000 fueling stations in the United States of which only 1,183 presently offer E85. Assuming E85 is the primary preferred pathway, the Department estimates that approximately 50,000 to 60,000 stations must exist and operate simultaneously to fully implement an E85 infrastructure. On average, retrofitting a fueling station to offer E85 is estimated to cost 60,000 dollars. The 2005 Energy Policy Act provided tax incentives that can defray up to 30,000 dollars of the total cost per pump.

In 2006, the Department through its Clean Cities Program announced a selection of alternative fuel infrastructure projects that

will result in 182 pumps installed by the end of 2008. In the last 12 months there were a record number of E85 pumps installed nationwide, 440. At this rate, as you indicated, it would take at least a century to reach critical mass in E85 infrastructure.

The current rate of infrastructure deployment is therefore insufficient to support the national vision of domestic biofuels production, deployment, and use that is consequential within the decade. The Department believes that an E85 delivery system is an important goal of an alternative fuels infrastructure, but should not necessarily be the exclusive goal upon which our national strategy is built. Intermediate blends may offer an alternative approach to balance fuel production and use in parallel in order to enable continuous, uninterrupted growth in domestic fuels production and allow more outlets into the marketplace.

Turning to vehicles, there are currently more than six million flexible fuel vehicles FFVs on the road in this country, still a relatively insignificant number representing a small percentage of the approximately 225 million light duty vehicles in the United States. Domestic auto manufacturers have pledged to the President to make half of their products flex fuel capable by 2012, and we are hopeful that this pledge will be maintained and even accelerated. It is important to note however, that this voluntary pledge is entirely contingent on the potential availability of the physical presence of E85 infrastructure. It excludes foreign manufacturers, who constitute approximately half of the U.S. vehicles market.

During my first week on the job, I traveled with Secretary Bodman to Detroit where he addressed the leaders in the automotive industry with a direct challenge, calling for more flex fuel vehicles on the market of all vehicle types and all vehicle classes from all manufacturers that service the U.S. market. We see no technical reason whatsoever why flex fuel vehicles cannot be more uniformly ubiquitous across all markets nor do we see any technical reason that at least the option of flex fuel could not be offered to all consumers at a relatively low price in the near term.

The President's 20 in 10 goal holds the promise of accelerating penetration of cellulosic ethanol and other alternative fuels into the marketplace and bringing the benefits of clean renewable and alternative energy sources more quickly to our Nation. Providing the necessary infrastructure is a critical part of reaching that goal and we are mindful throughout our programs of the national security, economic and environmental imperatives.

In order to meet the target of 20 percent gasoline reduction within a 10-year span, it requires a change in the status quo and an agile capacity to adopt fuel delivery systems, codes and standards and our national vehicle fleet. To the extent that they remain voluntary, market decisions must take place at a rate and a scale that is consequential within this timeframe so that it matters.

This concludes my prepared statement. I'd be happy to answer any questions the committee members may have.

[The prepared statement of Mr. Karsner follows:]

PREPARED STATEMENT OF ALEXANDER KARSNER, ASSISTANT SECRETARY, ENERGY EFFICIENCY AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY

Mr. Chairman and Members of the Committee, thank you for the opportunity to provide comments on improving our Nation's renewable fuels infrastructure to ac-

commodate the increasing volumes of renewable fuels in the transportation sector. As we continue to intensify our national effort to develop renewable energy options for transportation, it is vital that we focus on ensuring the infrastructure necessary to support our national vision of a domestic clean fuels industry.

The large-scale introduction of biofuels into consumer markets poses significant challenges throughout the production, supply, transport, distribution, and utilization cycle. These challenges must be effectively addressed to support the successful achievement of the President's Advanced Energy Initiative and the "Twenty in Ten" goal for reducing our dependence on oil. The "Twenty in Ten" goal aims to reduce our gasoline use by 20 percent within the decade. To help achieve this, the President has called for a robust Alternative Fuel Standard (AFS), requiring the equivalent of 35 billion gallons of renewable and alternative technologies in 2017. Encouraging the broadest range of alternative fuel technologies is critical to the type of transformational change necessary to improve our Nation's energy security. Creating certainty by establishing a durable, predictable AFS for the Nation will be an important first step necessary to stimulate more investment in infrastructure.

Recent developments have strongly accelerated the growth of biofuels in this country, and we recently have been adding more than a billion gallons capacity of ethanol each year (source: Renewable Fuels Association, http://www.ethanolrfa.org). Our strong investments into cellulosic ethanol research, development, and demonstration activities will further increase the biofuels growth rate. In the last year, the Department has announced the availability of nearly $1 billion for biofuels R&D, subject to appropriation, over the next three to five years, including:

- Up to $385 million for the construction of six cellulosic ethanol biorefineries over the next four years. Once up and running, the facilities—located in California, Florida, Georgia, Idaho, Iowa, and Kansas—are expected to produce more than 130 million gallons per year (mgy) of cellulosic ethanol;
- $375 million awarded to three new Bioenergy Centers to advance understanding of how to reengineer biological processes to develop new, more efficient methods for converting the cellulose in plant material into ethanol or other biofuels serve as a substitute for gasoline;
- Up to $200 million to support the development of cellulosic biorefineries at ten percent of commercial scale that produce liquid transportation fuels such as ethanol, as well as biobased chemicals and bioproducts used in industrial applications;
- Up to $23 million in Federal funding for five projects focused on developing highly efficient fermentative organisms to convert biomass material to ethanol.

The Department's investments into cellulosic ethanol research, development, and deployment are focused on achieving the goal of cost-competitiveness by 2012. This projected increase in ethanol use will challenge our existing liquid fuels infrastructure. We expect the market's ability to absorb gasoline blended with up to 10 percent ethanol, which can be distributed through existing infrastructure, to reach its limits in the near future, possibly even the next 5 years. This reality will require multiple pathways to continue growing our domestic renewable fuels industry. These pathways need to be immediately addressed in parallel.

While much of the national debate has focused on the production of renewable fuels, much less public attention has been directed to the challenges of infrastructure. To address the important link between biofuels production and biofuels distribution and consumption, a recent report by the Government Accountability Office called on the Department of Energy to develop a strategic approach that coordinates the expansion of biofuels production with distribution infrastructure and vehicle needs. The National Petroleum Council's July 18 draft report, "Facing the Hard Truths about Energy," similarly highlights transportation infrastructure as a concern for biofuels—constrained capacity on our roads, rail, pipelines, and waterways pose a substantial barrier to encouraging alternative fuels.

The Department is sharpening its focus on the issues highlighted by GAO and the National Petroleum Council and is targeting infrastructure barriers to biofuels growth by forging strategic cost-shared partnerships with private industry, collaborating with other agencies, and working with the different regions of our country to bring the promise of large-scale biofuels distribution to fruition.

Mr. Chairman, I am pleased to report to you that the Department's focus on enabling the development of a domestic biofuels industry is already showing results. We have developed, in the Office of Energy Efficiency and Renewable Energy (EERE), a biofuels infrastructure team. This team connects, for the first time, the Vehicle Technologies Program and the Biomass Programs to promote a comprehensive and coherent approach to the biofuels industry. DOE recently completed testing on the BioPower sedan produced by SAAB (a subsidiary of GM) to validate E85 engine op-

timization technology, confirming the ability to meet EPA emissions standards and increased performance.

The Department is coordinating pipeline work with DOT, which has responsibility for setting standards for pipeline transportation and ensuring that these products can be safely handled, and working to examine the compatibility of intermediate blends (such as E15, E20, and other lesser blends than E85) on the existing vehicle fleet with the EPA, which has responsibility for testing the emissions impacts of fuels and vehicles, and registering and certifying fuels and fuel additives before they can be used in the transportation system. Finally, we have elevated the level of activity and engagement of the Interagency Biomass R&D Board, an interagency coordinating group, to ensure a comprehensive approach to addressing key infrastructure barriers, such as feedstock availability and infrastructure development. These efforts, both internal to the Department and externally throughout the Executive Branch, are focused on reducing duplication, accelerating research, development, and commercialization activities, and ensuring a comprehensive approach to domestic biofuels deployment in a timeframe that is consequential.

As I have testified many times before, Government funding alone will not be sufficient to meet the substantial challenges of changing our Nation's energy portfolio. The deployment of pumps, vehicles, and other infrastructure must increase rapidly over the next decade, so that consumers have access to domestic renewable fuel sources.

There are approximately 170,000 fueling stations in the U.S., of which only 1,183 offer E85. In order to make E85 readily available, the Department estimates that approximately 50,000-60,000 stations must exist and operate simultaneously to fully implement an E85 infrastructure (similar to the current number of diesel stations). On average, retrofitting an existing fueling station to offer E85 is estimated to cost $60,000. The 2005 Energy Policy Act provided tax incentives that can defray up to $30,000 of the total cost. While it is not the Department's role to pay for the installation of biofuels infrastructure, the Department can provide technical assistance, training, and small grants that can be leveraged by State, local, and private sector funds. In 2006, the Department, through its Clean Cities program, announced selection of alternative fuel infrastructure projects that will result in 182 pumps installed by the end of 2008. In the last 12 months, there were a record number of E85 pumps installed nationwide: 440. At this rate, it will take 110 years to reach critical mass in E85 infrastructure. The current rate of deployment is insufficient to support our national vision of domestic biofuels production, deployment and use.

The Department believes that an E85 delivery system is an important goal of an alternative fuels infrastructure, but that intermediate blends (e.g., E15, E20) may offer an alternative approach to balance fuel production and use in parallel in order to enable continuous uninterrupted growth in production. In fact, intermediate blends may provide for more rapid absorption of renewable fuels into consumer markets in the near-term.

Flexible fuel vehicles can readily and easily accommodate any biofuel blend up to and including E85. Currently, there are more than six million flexible-fuel vehicles (FFVs) on the road in this country, but still a relatively insignificant number representing a small percentage of the approximately 225 million light duty vehicles in the U.S. Domestic auto manufacturers have pledged to the President to make half of their products flex-fuel capable by 2012, and we are hopeful that this trend will be maintained and even be accelerated. It is important to note that this commitment is contingent of the availability of the physical presence of E85 infrastructure.

During my first week on the job, I traveled with Secretary Bodman to Detroit, where he addressed the leaders in the automotive industry with a direct challenge, calling for more flex-fuel vehicles on the market for all vehicle types and classes, available from all manufacturers who serve the U.S. market. We see no technical reason why flex-fuel vehicles can not be more uniformly ubiquitous across all markets. Nor do we see any technical reason that at least the option of flex-fuel could not be offered to all consumers at a relatively low price.

CODES AND STANDARDS

The widespread deployment and use of biofuels will depend in large part on the harmonization of existing codes, standards, and regulations, and the development and promulgation of new codes and standards where they are deemed necessary. This will ensure consumer confidence, safety, environmental protection, and the integrity of our Nation's fuel supply, distribution, and utilization infrastructure. EERE has initiated an effort to engage international collaborations to address fuel standards, data sharing, and other common interests. Establishing harmonized

codes and standards is critical and time sensitive since the market is expanding rapidly. For example, a standard that addresses fuel quality would directly affect production plant design and cost.

The Department has been working with industry to sponsor work in codes and standards development for many years. These efforts have helped to accelerate the development of codes and standards for alternative fuels and establish mechanisms to distribute information to relevant stakeholders. Similar efforts are now underway to work with industry stakeholders and other Federal agencies to promote biofuels codes and standards.

The Department is working with automotive manufacturers and E85 dispenser manufactures to establish Underwriters Laboratory (UL) safety certification procedures for E85 fueling equipment on an accelerated schedule. DOE provides technical guidance and coordinates with standards organizations such as the American Society of Testing and Materials (ASTM), the National Fire Protection Association (NFPA), the American Petroleum Institute (API), the American Society of Mechanical Engineers (ASME), and the Society of Automotive Engineers (SAE). We also work with the National Institute of Standards and Technology (NIST) and the Internal Revenue Service (IRS) on metering issues. It is worth noting that all pumps are tested and certified to accommodate up to E15. Variable pumps that allow consumers to select the most appropriate blends will soon be available to allow more choices and a more rapid absorption of biofuels in the marketplace.

OUTREACH

Our vehicle technology deployment efforts, including Clean Cities' activities, facilitate training of state and local public safety officials (e.g., local fire departments, construction and permitting officials, fire marshals, and first responders) which is critical to assuring the smooth and continuous expansion of biofuels markets. Though ethanol, either as E85 or as a blendstock in gasoline, garners most of the publicity these days, DOE also works on infrastructure issues which are associated with other current biofuels, such as biodiesel, and monitors the development of other biofuels which may be important in the future.

In the biodiesel arena, DOE is engaged, along with our partners in the National Biodiesel Board, in important revisions to that fuel's ASTM standard. This work has enabled broader application of biodiesel and increased the confidence of Original Equipment Manufacturers (OEMs) and vehicle owners that the use of biodiesel blends are compatible with existing engines.

CONCLUSION

The President's "Twenty in Ten" goal holds the promise of accelerating penetration of cellulosic ethanol and other alternative fuels into the marketplace and bringing the benefits of a clean renewable and alternative energy source more quickly to our Nation. Providing the necessary infrastructure is a critical part of reaching that goal, and we are mindful throughout our programs of that imperative. A comprehensive effort is underway to meet the challenges of a growing renewable fuels industry in transportation.

In order to meet the target of 20 percent gasoline reduction in a ten-year span, it will require change in the status quo and agile capacity to adopt fuel delivery systems, codes and standards, and the national vehicle fleet. The President's "Twenty in Ten" initiative outlines how this would be achieved through pursuit of technology advancements and policy incentives. In addition, voluntary market decisions must take place at a rate and scale that is consequential within a timeframe that matters. The Department appreciates the interest and support of the Committee in this critical area. This concludes my prepared statement, and I would be happy to answer any questions the Committee members may have.

Senator DORGAN. Secretary Karsner, thank you very much. Let me ask. Do you think the marketplace will solve this problem?

Mr. KARSNER. Provided with the correct policy stimulus the marketplace is the delivery mechanism that will ultimately solve the problem. I suppose the question is do we have the appropriate policy stimulus to enable that outcome?

Senator DORGAN. You've heard me describe what the major integrated oil companies are doing to prevent this from being solved. Will that prevention or will those prevention activities interrupt it if you think the marketplace is to solve the problem potentially?

Mr. KARSNER. I certainly think that those impediments need to be addressed with respect to E85 delivery.

Interestingly I just had lunch with Governor Pataki last week who had introduced legislation in New York to address those issues very specifically. So, on a State-by-State basis those issues are being addressed with regard to E85 under the canopy and exclusions on the gas stations. With regard to E85, I think we have a need to address it more comprehensively.

Senator DORGAN. Should we address them on a national basis? For example, Chevron-Texaco and Conoco-Phillips station owners are not allowed to list E85 on their primary sign listing fuel prices and must pay to erect a separate sign. Is that something that restrains E85 in your judgment?

Mr. KARSNER. I can't speak for the position of the franchise owner itself. But I would say that the New York model, if it is not overly disruptive to the marketplace and handles the liabilities appropriately, may be something that we need to examine with regards to those impediments to E85.

I would further add though, that the other pathways, E15 for example, where the pumps are already certified and exist may provide for more immediate penetration across all of these stations.

Senator DORGAN. I'm going to ask you about that in a moment. But at the moment I'm asking you about the actions of the major oil companies to thwart the ability to have the infrastructure. Conoco-Phillips memo to franchisee says that it will not allow E85 sales on the primary island under the covered canopy. Should we do something about that or should we just wait for the states to try to do something about that?

Mr. KARSNER. It's a little bit of a challenge, Senator, for me to address it because it's really a contractual law issue between the parties of the franchisee and the franchisor. The reason I brought up the New York example is because I think it's an example that has been tested that if it bears out could be an example to that. But I'm not an expert in the contract law.

Does it represent an impediment to the distribution in and of itself? I think the answer to that is obviously, yes.

Senator DORGAN. BP will not allow its franchised stations to offer payment by credit card at E85 pump. Is that an impediment, do you think to the sale of E85?

Mr. KARSNER. If I were a station owner who wanted to sell E85, I would think that.

Senator DORGAN. So, the reason I'm asking these questions—Do you think there's something for us to do here when we see this kind of restraint on the sale of E85 or should we say, you know that's happening in the marketplace. If the Big Oil companies want to decide to thwart the marketing of E85, so be it. We'll just wait. Do nothing. What's your impression?

Mr. KARSNER. The first part of your question, do I think something needs to be done. The answer to that is yes.

Senator DORGAN. By whom.

Mr. KARSNER. I think policy stimulus is clearly necessary for the market to deliver that outcome. I don't start with the premise that the oil companies are necessarily an adversary to the outcome. I

think the policy stimulus needs to ultimately guide them to that outcome and hopefully guide them there profitably.

Senator DORGAN. You don't think this—these actions are detrimental to the right outcome?

Mr. KARSNER. No, no.

Senator DORGAN. It seems to me that the oil companies are doing exactly what you would expect them to do, if they have the power to make it stick.

Mr. KARSNER. I mean to say they're not necessarily adversarial to the solution. It may be that their interpretation of their contractual engagement with their franchisees at the present represents an impediment. I'm not sure that that impediment couldn't be overcome and overcome profitably for them.

Senator DORGAN. It appears to me their actions are adversarial to the sale of E85.

Mr. KARSNER. In the present context I can see where you might interpret it that way.

Senator DORGAN. Would you interpret it that way?

Mr. KARSNER. Were I a franchisee and wanting to distribute E85 and being denied to do so under my canopy for sale and for profit, I likely would.

Senator DORGAN. How about as opposed to a policy maker. In terms of a franchisee, I understand. As a policy maker, would you look at these and believe that. Let me tell you why I'm asking the question.

I don't think that we have a ghost of a chance of solving this problem if we have those who control 60 percent of the service stations in this country deciding they're going to do everything they can to try to prevent people from having free access, or I should say reasonable access to E85. This could be by keeping it off the island where you have the other pumps, not allowing credit cards, not allowing advertisement on the price, and so on.

I don't think we can solve this. I just don't. Unless both as franchisees and as policy makers we say, wait a second. You can't do this. So, I'm sorry—

Mr. KARSNER. I understand your meaning. I mean, fundamentally, there is a misalignment of the national objectives with the current laws and profitability in between the relationship for the franchisor and the franchisee. The complexity as a policy maker is this does involve a private contractual relationship to which both parties have consented.

So, that is why I've said, again, going back to the New York model, they seemed to have threaded that needle in a way that bears examination.

Senator DORGAN. My point of this hearing is that we have to change that relationship. In fact, we're trying to change the relationship by which 60 percent of our oil comes from off our shore.

One other question, others here need to be able to ask questions. You say on page four, you seem to suggest to me that, and you alluded to it a moment ago, the intermediate blends may provide for more rapid absorption of renewable fuels. I assume there you're talking about blend pumps at 20, 30, 40, 50 percent blend, and I believe we really need to get to that point as well.

But I—and while I think that that's something that we should move toward, I think still hanging on to the notion of substantial widespread marketing of E85 is essential to making successful our goal of 36 billion gallons of renewable fuel. Would you agree with that?

Mr. KARSNER. I would, but I would say that intermediate blends as low as anything above E10. As all pumps in this country are presently certified ready and enabled to use E15, in theory you could aggressively pursue E85 and at the same time pursue an intermediate blend of E15 and substantially accelerate your probability of meeting those goals in a shorter timeframe.

Senator DORGAN. Mr. Karsner, you're a good Assistant Secretary. You and I have traveled together.

Mr. KARSNER. Yes, sir.

Senator DORGAN. I like your work. This is one of those cases, on this issue where we as a country have pledged that we are moving in this direction. We're going to head toward 36 billion gallons. We have to find a way to market it, or we're going to fail. This will collapse. On some policies we can sit around somewhere between daydreaming and thumb sucking and nothing much will come of it. Nobody cares much because we just don't do this or that or the other thing.

In this case, if we don't solve this infrastructure problem, this whole issue of producing renewable fuels and being less dependent on foreign sources of energy will not matter. We will fail as a country. So that's why this is so unbelievably important. We have to get the infrastructure right. It's not even a very sexy subject, having a hearing on infrastructure on E85. But it has profound consequences for this country. I'm going to send you this list of questions, and I hope we can work together.

Again, I appreciate your work. I don't mean to badger you about this. But I just feel so strongly that the policy issues here are just too important. We've just got to deal with them. They're just of paramount importance.

Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman. Mr. Karsner, appreciate your being here, your testimony. I guess I'm listening to your comments, listening to what the chairman of the committee here has indicated and it just strikes me as we're having this committee meeting after the horse has already left the barn or whatever the expression is.

Senator Klobuchar mentioned the kind of the chicken and the egg situation that you can't make this happen unless you've got the infrastructure in place where you know you can fuel up and you're not going to buy the car unless you—we need to know that the infrastructure is there. We have signed on to a policy. The Administration has endorsed it very rigorously. Here we are. Now we're trying to figure out how we make it work.

It seems to me that many of these questions should have been asked before we committed to the policy. If we couldn't make the policy work, perhaps we shouldn't have gone down this road. We're out the barn door so we're making it happen.

You have mentioned in the wording that you have used a couple of different times the current rate being insufficient here in terms

of the number of filling station pumps that are out there, the rate that we are on and just the reality that we're not going to be able to achieve our goal unless we improve the rate and scale in terms that are consequential, to use your terms. What does that really mean? What are we going to have to do in order for it to be consequential in order for us to meet the goal that we here in Congress have set?

Mr. KARSNER. Ok. First let me say that I do believe we can do those things. So it is a reality that we can design and include the appropriate policy stimulus. If you're talking about some of what the core elements are to get to a rate that is consequential, we have already done and addressed the most important core element, which is can we enable the conversion technologies to produce domestic clean fuels supply? Can we do that economically in a timeframe that's consequential? The answer to that is, yes, from the technology point of view, the capital formation point of view, and the growth rates that are currently existing in the market.

The question that we're discussing today is then what do we do with all of this fuel? Where does it go? We know that where we know it needs to go is in our vehicle fleet. The amount of our vehicle fleet that can handle both intermediate blends in cars that are warranted or E85 is much too small.

So at a cost of 45 to 200 dollars to modify our vehicle fleet and make it flex fuel ready, we need to get to that state where we uniformly have traffic predictably in terms of the cars that we have. On a comparable basis this is like having the option to buy mats or even maybe mud flaps, but with a larger more significant national security implication. That's the car side of it. Those cars need someplace to go and a fuel to get.

E85 is an important strategy, one that we will continue to pursue and to maximize, but it is constrained by locality and by distribution of the fuels. So we are looking into other, lower intermediate blends that have already accessed infrastructure such as E15. That will require a certification process by EPA and other blends like E20 that the state of Minnesota is petitioning for.

So the very things that we're talking about today, retail delivery structure, the pumps and retail availability of the modification of the vehicles, really are the enabling and negating factors for the piece, the most difficult piece that we've already covered, which is the production.

Senator MURKOWSKI. Mr. Chairman, my time's up. Thank you.

Senator DORGAN. Senator Menendez.

Senator MENENDEZ. Thank you, Mr. Chairman. Mr. Secretary, there are 129,000 flex fuel vehicles in New Jersey, absolutely no E85 ethanol pumps in the State. So, I look at that and I look at our national strategy and I say to myself that this may be ethanol, a success story for rural development in the Midwest. But if we don't create the infrastructure necessary to transport these fuels nationwide there's a real threat that biofuels can be viewed as a regional issue rather than the national one that we expect it to be.

I have been supportive of the pursuit of ethanol, but that support can't be just for regional purposes at the end of the day. It's about a national strategy. So it runs a risk of losing support if it only can be confined to a part of the country.

One solution to this problem has been discussed has been to transport ethanol to the coast via pipelines. But I also understand that ethanol has a tendency to corrode and crack traditional fuel pipelines. Earlier this year, on April 12, you were before the committee. That's about three and a half months ago. I asked you then, specifically, about ethanol infrastructure and whether the Department was working in conjunction with the DOT, the Department of Transportation to solve the problem of transporting ethanol via the pipeline. I think you told me at the time that you were just having meetings. So my question is has the work begun? What progress has been made? Let's start there.

Mr. KARSNER. Yes, the work has begun.

Senator MENENDEZ. When did it start?

Mr. KARSNER. I think shortly after that hearing to be honest with you or immediately before it, so maybe three or 4 months ago. I don't recall when our hearing took place.

Senator MENENDEZ. What type of progress has been made?

Mr. KARSNER. I'm less comfortable speaking for the progress and the milestones because it is the Department of Transportation that does the work. We play a supporting and facilitating role. So, we meet not less than monthly at the highest levels with the Department of Transportation to discuss that issue.

But I would add again, that you're in a dynamic developing environment. So some things relative to pipelines are really based on corn based ethanol, which is conventional ethanol, which we have no investments in through the Department of Energy because it is already commercial at market. We anticipate for New Jersey, for the Northeast, for the Southeast, for other regions of the country to break out of the regionalism of the conventional ethanol and that we will see cellulosic ethanol on line and at commercial scale by 2012. So it is as likely in our mind that you would get a long distance transportation corridor from the Midwest for pipeline as it is that local producers would begin within the same timeframe.

Senator MENENDEZ. Why is this such a technical challenge that the Brazilians have been pipelining ethanol for years?

Mr. KARSNER. I'm not sure that it is a technical challenge. You know the Brazilians have a monopoly on their pipeline system. Petrobas has had that mandated for three decades, as you indicate. I think it is a question of our private pipeline companies getting comfortable with the proposition.

I understand that many of them are, and that many of them are pursuing it and others of them are quite skeptical. What they would like the Federal Government to do, and what we are pursuing, is that material science based on the corrosion and the cracking that you mentioned as a current impediment.

Senator MENENDEZ. Let me ask you this. I also understand that you are all working with the EPA to test whether traditional gasoline cars can use ethanol concentrations as high as E25, similar to what cars use in Brazil. In your testimony you referenced the testing was completed for one model of car, but when will the Department and the EPA finally have done the work necessary to put blends above E10 in regular gasoline cars?

Mr. KARSNER. To my knowledge sir, not having gone through the process before, I am told that with the present statutory process,

public comment periods etc, about the fastest that we could expect that to be completed would be 36 months, with the majority of time focused on the studies and technology validation that would precede fuel certification.

Senator MENENDEZ. Thirty-six months. You know, GM and Ford together account for over 30 percent of the vehicles sold in Brazil and many of those cars are not flex fuel, yet they run on E25. Why can't those same cars run on E25 here in the States?

Mr. KARSNER. I think this is a great question for the automakers. That's precisely what the Federal Government means to use our testing processes to validate. I mean some of—now most of those cars, I think, what you've been told are different models and different engine blocks than are sold in this country. That is, in fact, true. There are some common models that are sold in Brazil and sold in the United States which begs that precise question. But that is why we are embarking on studying that in a very methodical way, so that we can validate that answer.

Senator MENENDEZ. I will certainly ask the questions. I hope the Department's asking questions too. You're ultimately in charge with promoting the energy security of the country at the end of the day.

I'm going to ask you to submit for the record the timelines on some of this work that I've been asking you about.

Mr. KARSNER. Sure.

Senator MENENDEZ. When it began? What steps need to be completed and when this work will bridge the technical hurdles to allow for some of this to take place? I look forward to your responses in writing.

Senator DORGAN. Thank you very much.

Senator Corker.

Senator CORKER. Thank you, Mr. Chairman. Thank you again for testifying before our committee. I want to say if we come from a State—or I come from a State in Tennessee that is working on a continuum, if you will, as it relates to especially cellulosic ethanol but other ethanols. I have actually spent a good deal of time talking with people about E85 pumps.

While there may be certain marketing constraints that our chairman referred to, there is also just the issue of the chicken and egg. That is I know of one particular facility that put in an E85 pump and it's more of a novelty, if you will. There just aren't that many vehicles out there to utilize it and they want to be part of solving our problem.

I do think that what you have said about the blend piece is the way for us to maximize if you will the use of alternatives in this way. At the same time hear from people who market petroleum around the country that the various state standards that exist is one of the most complicating issues they deal with. I wonder if you could speak to that for just one moment? Apparently every State has a different formula and that too, if you will, creates additional issues, if you will, for people who won't actually use ethanol as part of their mix.

Mr. KARSNER. Thank you, Senator.

I think that really refers to this idea of this balkanized boutique fuel market that we have across this country and the need for sim-

plification for greater efficiency. So, while that's not unique to the question of ethanol, it certainly affects it when you start talking about different states with different blends and different certifications. For example, Minnesota is putting forward its own petition and sees a need to get to a higher intermediate blend to augment its E85 outlets which lead the Nation right now. That should serve as a bellweather we think we need this solution nationwide.

So what we are seeking, together with EPA, is to understand and examine and determine whether or not these intermediate blends can be proactively certified so that we have nationwide standards.

Senator CORKER. As we look at the limited resources and I know that at some point we're going to be looking more fully I guess at the infrastructure needs both at the retailer but certainly at the pipelines. A few have mentioned that. What sort of sequence of priorities is most important for us to look at from the standpoint of the actual capital deployed and maybe the Federal Government's role in that? What sequence?

Mr. KARSNER. This is a great question in terms of whether it is the chicken or the egg. To the extent that you separate them and say what could come first, I suppose this is more of a personal than a professional assessment. But I would always say go with the least costly, least pain, first.

In other words, if modification of the flex fuel vehicles creates the market or the repository where all the fuels ultimately go, one would say why are we not coming up with a policy where the automakers could do that profitably and not linking it to their CAFÉ obligations. So once we understand, once anybody understands, including the majors, that vehicular traffic is more predictable in terms of consumers who can choose, then you immediately lift the incentive for this to get beyond independent, downstream retailers and to get it into the majors.

So you need both, but in terms of least cost, modifying the fleet for flex fuel capability across the Nation, I think is quite important. It is important that we remove it from a selective exercise and not knowing where the cars in New Jersey or in California match up with the stations because it's going to take 17 years to turn the fleet. So it's something we need to get on with in a hurry.

Senator CORKER. Thank you, Mr. Chairman. I know my time is up.

Senator DORGAN. Senator Corker, thank you very much.

Senator Tester.

Senator TESTER. Yes, thank you, Mr. Chairman. Thank you for being here. The E10 can be burnt basically as gasoline right now without any modification in any vehicle, right?

Mr. KARSNER. Correct.

Senator TESTER. Do you have any idea how many pumps are pumping E10 or E15 right now?

Mr. KARSNER. I couldn't give you a number. But I would say it's probably on the order of about half the Nation's pumps right now doing E10. I think if you said an ethanol blend, any blend up to E10, it would probably be on the order of 80 percent of the pumps in the Nation.

Senator TESTER. Ok.

Mr. KARSNER. That's a rough guess. I'd like to report back for the record.

Senator TESTER. That would be good. That would be fine. If you would, I would appreciate that.

E10, if it goes above E10 than there is some question as to whether it can be burnt? Where's the line at? Senator Menendez talked about 25. Is that the 25?

Mr. KARSNER. The question above E10 is what the vehicle manufacturers will warrant their performance in this country for. So it really is not a technical question in its entirety. It's really a question of voiding the engines warranties.

Senator TESTER. I'll save that for the car manufacturers then. The Chairman talked pretty extensively in his questions. I'm just curious. Do you think, I mean you listed—the Chairman listed a lot of major oil companies there, many. Do you think that they are maybe obstructing the usage of ethanol?

Mr. KARSNER. I think the oil companies have a fiduciary responsibility to maximize profitability for their shareholders. The idea of eroding that profitability with something that doesn't belong in their market of fuels is probably against their interests.

Senator TESTER. Does that trump national security?

Mr. KARSNER. From whose perspective? From their shareholders? From our perspective clearly, we need 20 percent displacement of gasoline and ethanol has to be a priority for national security.

Senator TESTER. Do you agree that if it never makes it to the pump, never makes it to the marketplace its chance for survival is slim to none?

Mr. KARSNER. I agree that the ethanol must have outlets to the marketplace. Not only do we need it to achieve our goals, we need it to avoid the industry falling off a cliff relative to the growth rates that we have induced in industry. So we can keep it growing continuously or we can find an abrupt stop.

Senator TESTER. Is it a position of the Department of Energy or do they have a position that our reliance on foreign oil is a problem?

Mr. KARSNER. We do have a position that our reliance on foreign oil is a severe problem and it is a priority of our mission to address it.

Senator TESTER. Do you see any conflict there at all? Do you see any conflict over the priority and ethanol not being able to be pumped at the pumps because they have agreements, I think, and from my perspective, they have agreements intentionally so that it makes a consumer depend upon foreign oil production.

Mr. KARSNER. Who has agreements intentionally set up?

Senator TESTER. The major oil companies.

Mr. KARSNER. I see.

Senator TESTER. With their franchises.

Mr. KARSNER. Yes. It may be the case that their incentives are not aligned with the national security imperative.

Senator TESTER. Ok, that's fine. Information. Do you think that there's adequate information going out to the consumer about ethanol, E85 or even the lesser percentage blends?

Mr. KARSNER. No.

Senator TESTER. Does the Department of Energy have a plan for that?

Mr. KARSNER. We do have a plan. In fact we have institutional programming to get communication out.

Senator TESTER. How will you do that?

Mr. KARSNER. We have a Clean Cities Program by one example, which has offices in 85 different cities across the country to disseminate information, education, website access. But you asked me was it adequate or is it sufficient and relative to the amount of disinformation—

Senator TESTER. Yes.

Mr. KARSNER. No, it is not sufficient relative to the rise in disinformation on ethanol.

Senator TESTER. So you've just brought up a conflict. You've just brought up a problem. Is there some action proactivity planned to solve that problem from the Department of Energy standpoint?

Mr. KARSNER. As with any communication campaign, persistence and refining your message and getting out in the outlets is your best available tool. But it's not a one sided story.

Senator TESTER. You know sometimes I wished I was an attorney, but oftentimes I'm glad I'm not too.

So, I just find it interesting. I think that there is an information drought out there. I don't know if there's a lot of misinformation about ethanol. I know there's not a lot of information about it, about its advantages, about national security, about energy security. My take is that maybe we ought to be more proactive on that.

As far as the blends and as far as the taking 36 months to figure out what percentage will work in a vehicle. I think that's unacceptable to be quite honest with you. Government tends to run slow, but there's plenty of studies out there that deal with this issue.

Mr. KARSNER. With all due respect, Senator, it's not something we can do by just adopting a study. It's not whether we understand whether the engine can perform that way. We could do that tomorrow.

Senator TESTER. Yes.

Mr. KARSNER. Whether we can certify it, whether the EPA can issue its certification according to statutory processes that it has is the issue. So we are dealing with the process that was given as a matter of the law and 36 months would be a record pace.

Senator TESTER. Could you present some things that we could do to the statute to make that process more simple?

Mr. KARSNER. We'd be happy to go to the EPA and report back to the record or work with your office.

[The information follows:]

Statutory changes are likely not necessary. Based on our most recent experience, the majority of the time consumed in the current process for certifying new fuels is focused on the studies and analysis that are the basis for certification. The Department has been working with national laboratories and private contractors to conduct an extensive data collection effort and analyze performance, environmental, materials, and other issues associated with intermediate blends. EPA has been very helpful in reviewing DOE's test design and methodology to ensure that our data collection and analyses will satisfy their requirements for determination of fuel certification. DOE has put this testing on a fast track and plans to share data with EPA throughout the process in order to inform their regulatory activities.

Senator TESTER. That would be great. Thank you very much. Thank you, Mr. Chairman.

Senator DORGAN. Senator Tester, thank you very much.

Senator Martinez.

Senator MARTINEZ. Thank you, Mr. Chairman. Secretary, thank you for being here. I represent the State of Florida. We have over 17 million people. The third largest consumer of petroleum products in the country and currently we have only 359,000 vehicles that are E85. But to compound the problem even more we only have one commercially available E85 pump available for that whole State of Florida. We are also way downstream from where most of the ethanol is produced.

So, a couple of questions arising from that. We're not producing ethanol in Florida that we can utilize and it would be likely not to be done for some period of time. Although I'm very hopeful that in the future Florida will play a very big role in that. But in the meantime do you think it would advance the national security interest of our country if we were to lift the tariff on Brazilian or on ethanol from any foreign source, but more specifically from Brazil and import ethanol to a place like Florida where we can then utilize it readily by bringing it in from off shore as opposed to importing oil from a country like Venezuela?

Mr. KARSNER. It's a great question, Senator. I'm not an expert in trade law or in the matter of the tariffs. Let me give a little bit of context. First of all, Florida is one of our six winners for cellulosic ethanol bio- refinery grants that we've invested up to a billion dollar in cost shares this year. So, we're very hopeful about the future of citrus waste for cellulosic ethanol and some of the good work of Dr. Lonnie Ingram at the University of Florida has been instrumental.

We see the southeast as a key area for ethanol growth on cellulosic that will be affected if other cheap ethanol were to flood into the market from Brazil. But even if it were that cheap, given its tropical advantages and growth rate of sugar, it's questionable whether the Brazilians would have sufficient output even if there were a tariff lifted. Because of their own requirements, the Brazilians are actually short in meeting their own requirements and are having to scale back the amount of ethanol blends they have in their own systems.

So I think that there is an extraordinary amount of excess optimism about what a tariff change would do relative to Brazilian outputs. We are heavily engaged with the Brazilians, in terms of the partnership, signed and agreed to by Presidents Lula and Bush on technical R and D collaboration and policy development. So, there might be, 1 day, when we see a greater globally commoditized ethanol market. At present that is a lower priority than getting to a more universally commoditized domestic market on the back of scaling infrastructure through the new R and D and cellulosic pathways.

Senator MARTINEZ. I'm excited about the future research as well and I think there is a lot of hope coming out of the University of Florida's research. But more specifically to what we can do in the meantime if the Brazilian option might not be—it certainly isn't

practical because even though we profess that we want ethanol there's not the wherewithal here to do away with the tariff.

So let me move away from that. The business of the infrastructure being there and the pipelines being utilized could also be a way in which Florida could benefit. I'm not sure I understood earlier, when you were asked about this existing infrastructure, whether it could be utilized or not. But I believe Senator Menendez had asked you something along these lines and I wonder if you might address it for me as to how can we get the existing pipeline infrastructure to be available to be utilized for ethanol so that we might be able to transport it to places like Florida.

Mr. KARSNER. Again I think the Department of Transportation is working with pipeline operators who are interested in the subject. I understand there is a great deal of interest in new dedicated pipeline infrastructure. Actually retrofitting the use of a pipeline I understand to be slightly more complicated in terms of being able to flush that system and ensure that you minimize the corrosive nature of the oxygenates.

So, those things are under the auspices of the Department of Transportation. We are conducting the technical tests to them for the private sector participants that are interested. But again, something much more in our portfolio is developing regionalized feed stock solutions and regionalized cellulosic future. So if you look at the same timeframe for planning, it's a question of which happens first.

Senator MARTINEZ. So for Florida's future we're more likely to find the solutions to our own problems closer in the neighborhood than we would be shipping it in pipelines across the country.

Mr. KARSNER. We're working to make that at least as likely, if not more likely.

Senator MARTINEZ. My time is up, but let me just, as a comment, tell you that I know you don't mean to sound like your protecting the oil industry from their failure to provide outlets for ethanol. So I would just add to the other comments that you heard that I think it's vital that they be pressured, that they be pushed or they be bypassed, as we try to get ethanol to the consumer in an equally, fair playing field regardless of the current contractual obligations because those contractual obligations can also be changed by the mutual consent of the parties.

I think the other relation of government is to push in that direction for the sake of our national security, for the sake of our energy security and also to help consumers find lower prices.

Mr. KARSNER. Sure.

Senator MARTINEZ. Thank you.

Senator DORGAN. Thank you, Senator Martinez. Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman. Secretary Karsner, is biodiesel still an R and D priority for the agency?

Mr. KARSNER. Biodiesel is still something the agency works on. It is, relatively speaking, volumetrically far less available than the alcohol-based alternatives that we look at. So it is prioritized accordingly.

Senator CANTWELL. So are we still spending resources there? I mean I have information—

Mr. KARSNER. We are, predominately on codes and standards and acceptability. I believe you're going to have a witness from Chrysler Corporation, for example, and so when they talk about the reintroduction of the diesel engines we're moving with them to certify higher levels of biodiesel blends. B5 is already certified and upward to B20.

So, there's less of a technological challenge and the technical work that we do for biodiesel is really about using other and better future feed stocks for it.

Senator CANTWELL. But don't we have to keep driving down costs? Isn't that part of R and D is to technology breakthroughs that will help us drive down the costs particularly by using the by products of—I mean I think we know a lot already about crushing seed. That's not the challenge. The challenge is figuring out what you can do to add value to that byproduct that's produced and are we doing work on that?

Mr. KARSNER. I can report back to you for the record on precisely what the biodiesel program—

Senator CANTWELL. I think we're moving away from it. My point is that I don't think we should be. So, but happy to hear—

Mr. KARSNER. Happy to work with your office and brief on that.

[The information follows:]

The Biomass Program does Products R&D to make high-value chemicals and materials in biorefineries, including biodiesel facilities. Specifically, for glycerol, a byproduct of biodiesel production derived from plant and seed oils, the Program is working with the Pacific Northwest National Laboratory to develop enabling technologies that will lead to an integrated process for the production of propylene glycol (PG) from glycerol. PG is currently fossil-based and is used in a wide variety of applications including detergents, food, paints, functional fluids (antifreeze, deicers), and polymers. The goals of this project are to expand the market for glycerol from biodiesel production, displace fossil-based PG production, and increase the profitability of biodiesel production. This project expands the focus of the Biomass Program's portfolio beyond cellulosic ethanol to accelerate the Program's efforts toward reaching the President's "Twenty in Ten" goals.

Senator CANTWELL. Happy to hear that the Administration may be changing its mind on that.

On this issue I think my colleagues are obviously trying to get your comments and thoughts obviously because your title is the Assistant Secretary for Energy Efficiency and Renewable Energy. We have set, at least out of the Senate a goal; I mean a mandate, as you mentioned, of reducing by 20 percent at least even the Federal fleet efficiency and a 10 percent mandate by 2015 every year of use of alternative fuels. So, if that ends up becoming law the Federal Government in and of itself will have a challenge.

But let me ask you specifically, do you think that—would you support legislation that says that the oil companies can't, in contract nature, prohibit franchisees from making alternative plans for alternative fuel on their sites?

Mr. KARSNER. Senator, we just have to review the legislation that you're contemplating.

Senator CANTWELL. My colleague, Senator Klobuchar talked about it. I'm saying do you think that the franchisees should be able to, just because they buy gasoline from Chevron or Shell, do you think they also should be prohibited from purchasing a product from an alternative fuel source? I'm just asking your opinion on whether you think they should be prohibited?

Mr. KARSNER. You know, you're asking me about a relationship, a specific legal relationship, between franchisor and franchisee. I'm just not nearly knowledgeable enough. I've never owned a gas station. I've never owned an oil company. In terms of the end outcome you seek, accessibility and penetration beyond independent downstream retailers amongst our majors clearly that is something the Administration would like to work to occur. Asking a very specific detailed question on how we would affect the franchise contract is just something we would have to see in detail.

Senator CANTWELL. I think because you point out in your testimony in order to meet the 20 percent gasoline reduction in a 10 year span will require a change in the status quo, an agile capacity to adopt fuel delivery systems, codes, standards and the national fleet. So, I think you're pointing it out.

Mr. KARSNER. But not to exclusively toward E85. We're pointing it out in the context of E15 and E20 by way of example, were they certified, would go further and faster and would likely be acceptable to—

Senator CANTWELL. I love that you can go over to the Pentagon and get gasoline there and you have your traditional sources. But right next to it are E85, biodiesel and even the use of natural gas. Now it's at a separate island, separate station, everything.

The question though is does the Administration—if we're going to meet this goal than obviously the Administration has to have a plan. That's what everybody is dancing around here trying to get an answer from you as to what does the Administration want to do on that infrastructure issue. I get that it's not all your portfolio, some of this area is probably some other committees.

But you mention delivery systems and codes and standards and so I'm assuming by that you believe that we should actually pass legislation about codes and standards. Is that correct?

Mr. KARSNER. I'm not at all sure that legislation is what's required.

Senator CANTWELL. But who would adopt, in your testimony, you say codes and standards. Who would adopt that then?

Mr. KARSNER. I think that there are many means already in statute to develop the necessary codes and standards. For example, the B5 and B20 that I just referred to doesn't require new legislation; it requires the appropriate testing and certification. With regard to the infrastructure that we're dancing around in terms of a plan, let me say, that we're being clear. We do not believe a plan, exclusively based on E85 penetration is a plan that can be consequential within the timeframe being discussed.

Therefore alternative intermediate blends must be part of the conversation. There is infrastructure in place now without any modifications, without any need to address codes and standards for E15 that would go a very long way toward that objective.

Senator CANTWELL. I think you're answering the question in a different way. I'm glad to hear that you're thinking beyond E85 because frankly the northwest was over 70,000 flex fuel cars and in most alternative fuel stations we have, 50 are biodiesel. So we have next, in less than 10 days the largest biodiesel facility in the United States opening with 100 million gallons of biodiesel hadn't

even been produced in all of the United States. So we're definitely on a different path.

But my point is this, does the Department of Energy, particularly your job on renewable fuels, believe that we need to adopt further codes and standards as it relates to infrastructure? Yes, no?

Mr. KARSNER. I think I prefer to report back to the record comprehensively because it could be a very wide range of lists.

Senator CANTWELL. In general do you think that the Federal Government needs to—

Mr. KARSNER. With regard to biodiesel I would say yes. With regard to the other alcohol blends I would say I need to give you a more extensive answer on whether or not the codes are necessary.

[The information follows:]

The Department of Energy has been collaborating with the American National Standards Institute (ANSI), the recognized administrator and coordinator of private sector voluntary standardization in the U.S., to identify barriers to large scale market entry of biofuels. This collaboration includes other Federal Agencies, such as the Department of Transportation, National Institute of Standards and Technology (NIST) and the Environmental Protection Agency, to determine how the Federal Government can facilitate and accelerate the development and adoption of voluntary standards that are necessary for the emerging biofuels infrastructure. The Department has also been collaborating with the manufacturers of dispensing equipment, automotive manufacturers, and Underwriters Laboratory to complete the certification of E85 dispensers and other fueling equipment on an accelerated schedule. The Department provides technical guidance and coordinates with standards organizations such as the American Society of Testing and Materials (ASTM), the National Fire Protection Association (NFPA), the American Petroleum Institute (API), the American Society of Mechanical Engineers (ASME), and the Society of Automotive Engineers (SAE). DOE also hosts public/private sector workshops to discuss relevant issues. The Biomass Program will continue to work with its partners toward the development of a biofuels infrastructure that will ensure consumer confidence, environmental protection, and the integrity of our Nation's fuel supply, distribution, and utilization infrastructure.

Senator CANTWELL. Thank you, Mr. Chairman.

Senator DORGAN. Senator Bunning.

Senator BUNNING. Thank you very much, Mr. Chair and I apologize for being here a little late because I was on the floor offering an amendment on SCHIP.

Mr. Karsner, ethanol has grown rapidly in recent years and has been praised for decreasing our dependency on oil, improving our trade deficit, cleaning up our environment and providing investment for American communities rather than the Middle East. As you may know I have been a leading proponent to the effort to develop coal to liquid fuels. I believe that coal to liquid fuels have all the benefits of biofuels but can be used in existing infrastructure and blended in current fuels. If we hold them to the same environmental standards do you see any reason the United States should not use corn cellulose and coal to make secure domestic fuels?

Mr. KARSNER. If all of them are held to precisely the same environmental standards?

Senator BUNNING. That's correct.

Mr. KARSNER. So I would assume you would include emission standards, tailpipe emissions and that?

Senator BUNNING. Exactly what I said.

Mr. KARSNER. Ok. If it includes the same emissions standards, which one would assume includes carbon capture and storage, I would say the answer to that is yes.

Senator BUNNING. I don't think we have carbon capture and storage on regular gasoline, do we?

Mr. KARSNER. No, but you would need that to get to the same emissions standards for coal to liquids. The coal to liquids cannot meet the same emissions standards as the other fuels you mentioned without carbon capture and storage.

Senator BUNNING. That's a matter of opinion, sir.

Mr. KARSNER. Ok.

Senator BUNNING. If you do some scientific research you might find it differently.

Mr. KARSNER. Yes, sir.

Senator BUNNING. You mentioned several of the 2005 energy programs that DOE is working on. Could you tell us if there are any programs that have not gone as you hoped and could be refined by Congress, specifically could you also provide an update about the loan guarantee program?

Mr. KARSNER. I would be happy to do that and report back for the record, sir.

Senator BUNNING. You don't have that on hand?

Mr. KARSNER. Our office has no auspices or oversight on the loan guarantee program. But I'd be happy to get that from DOE and report back to your office on it.

[The information follows:]

EERE does not have management responsibility for the DOE Title XVII loan guarantee program. However, I am pleased to provide the following update on the program's status. On August 14, 2006, the Department published a set of Guidelines (Guidelines) and an initial solicitation for Pre-Applications for the first round of loan guarantees authorized by Title XVII of the Energy Policy Act of 2005 (Title XVII or the Act) (42 U.S.C. 16511-16514). (71 FR 46451). The deadline for submission of Pre-Applications in response to the first solicitation was December 31, 2006, and DOE received 143 Pre-Applications which are currently being reviewed.

On February 15, 2007, President Bush signed into law Public Law 110-5, the Revised Continuing Appropriations Resolution, 2007 (CR or Public Law 110-5) which authorizes DOE to issue guarantees under the Title XVII program for loans in the "total principal amount, any part of which is to be guaranteed, of $4,000,000,000." Section 20320(b) of the CR further provides that no loan guarantees may be issued under the Title XVII program until DOE promulgates final regulations that include "programmatic, technical, and financial factors the Secretary [of Energy] will use to select projects for loan guarantees, policies and procedures for selecting and monitoring lenders and loan performance, and any other policies, procedures, or information necessary to implement Title XVII of the Energy Policy Act of 2005."

On May 16, 2007, DOE published a Notice of Proposed Rulemaking (NOPR) and opportunity for comment (72 FR 27471) to establish permanent regulations for the implementation of the loan guarantee program. DOE held a public meeting concerning the NOPR on June 15, 2007, in Washington, D.C. The Department is currently developing its final regulations for the loan guarantee program.

The Administration's 2008 Budget proposes that DOE may guarantee up to $4 billion in loans for central power generation facilities (for example, nuclear facilities or carbon sequestration optimized coal power plants); $4 billion in loans for projects that promote biofuels and clean transportation fuels; and $1 billion in loans for projects using new technologies for electric transmission facilities or renewable power generation systems.

Regarding particular provisions in the Energy Policy Act of 2005 that concern EERE programs and that have been problematic from our perspective, I would call the Committee's attention to section 942, the reverse auction for cellulosic biofuels production incentives. Industry has expressed limited interest in this provision, and implementation has been hampered by ambiguities in the legislation. The Department believes this section could be beneficial to industry, if some technical and clarifying changes were made. I would be happy to work with Committee staff to address these concerns.

Additionally, under Title III of the Energy Policy Act of 1992, Federal agencies continue to strive to achieve alternative fuel vehicle requirements, while still reduc-

ing petroleum consumption. It is difficult, however, to meet those goals, because automakers do not make sufficient quantities of alternative fuel vehicles in the models needed by the Federal agencies. In many cases, Federal agencies are purchasing alternative fuel vehicles to meet statutory EPACT requirements, specifically flexible-fuel E85 vehicles (FFVs), that are larger, less efficient, and more expensive than the vehicles needed to meet the Federal mission requirements.

For example, agencies would prefer to purchase four-cylinder, efficient, compact sedans for many applications. FFVs are not offered in that size, and agencies have to purchase six-cylinder, less efficient, mid-size sedans or even light-duty trucks in order to comply with EPACT. Automakers are incentivized to make FFVs in larger vehicles in order to maximize their ability to receive credits towards CAFE compliance. It is troubling that Federal agencies striving to achieve the goals of EPACT and increase the use of alternative fuels are stymied in that effort due to lack of availability of FFVs from the automakers, when the technology to make every vehicle flex-fueled is proven, widely available, and low-cost.

Senator BUNNING. You mentioned that we will need harmonized existing codes and procedures. This has been brought up for ethanol. You know before biodiesel our diesel fuel became used across the country we had a devil of a time in finding a station in Kentucky that delivered diesel fuel. Until all of a sudden the major oil companies and others and some major independents for that matter started to put diesel pumps in their delivery system.

Do you see, other than the other fuels that you mentioned, any ability other than E85 which has a corridor now from Chicago to St. Louis and to Kansas City which has quite a few E85 pumps, the expansion of that into other areas? For the simple reason we are developing ethanol plants, biodiesel plants and as my good friend from Florida said, they would like to see the same type of availability in Florida and many other States feel the same way. Do you see that happening?

Mr. KARSNER. I see it happening but not at a rate that will bear fruit relative to the end State.

Senator BUNNING. How about by 2015?

Mr. KARSNER. By 2015 at the present rate we will not have had sufficient—

Senator BUNNING. It won't impact us.

Mr. KARSNER. On E85. Again E15 we already have 100 percent penetration of the infrastructure we just have to only use it up to E10.

Senator BUNNING. Yes, I know. I use it in my car.

Mr. KARSNER. Right. But your example about the diesel is a very good one in the sense that about half of our stations have diesel access now. It's a useful analog, in terms of work on promulgating the ultra low sulfur diesel standard that we have just adopted and the oil companies are now distributing through those pumps.

Senator BUNNING. The Secretary—or the Senator from Washington talked about the availability and use of diesel fuel in the far west. In Owensboro, Kentucky, I'm going to cut the ribbon for a plant that will make a million barrels of biodiesel a year. Now, they've got to distribute that somewhere. This is an independent expenditure.

My time has expired. But this is an independent company that is not connected with any major oil companies so they have to have the distribution capability of getting it to places that will sell it. If we don't have that capability or the Department of Energy doesn't care about that capability than we are not going to have any impact on reducing our dependency on Middle Eastern oil.

So, is the Department of Energy interested or aren't they?

Mr. KARSNER. With regard to that specific Owensboro plant I'd be happy to get in touch with your office and in touch with the people who are behind that plant and discuss with them their capacity to get to market. So we are interested and we do care.

Senator BUNNING. A million barrels is not a drop in the bucket. It's a pretty big outfit.

Mr. KARSNER. I'd be happy to follow up with your office, sir.

Senator BUNNING. Please do. Thank you very much. I'm over my time.

Senator DORGAN. Thank you. Senator Sessions.

Senator SESSIONS. Thank you. Just briefly, Mr. Secretary. My thoughts about E15, E85 and ethanol sort of run to a common sense approach, I think. I definitely support ethanol. I think it provides tremendous potential for our agricultural community. It keeps wealth at home. When we purchase a gallon of fuel from abroad that's a transfer of American wealth which I would prefer it stay in our own economy. So I favor that and have supported the ethanol requirements.

But it seems to me that when we draw and if we draw regulations, should not those regulations common sensically say that if the ethanol is produced in a certain area of the country that we ought to emphasize that E85 pumps in that area of the country and not 2,000 miles away where it's got to be hauled to there. If we're trying to achieve the lowest possible cost for our consumers and have you given much thought to precisely how the most economical way to handle the distribution of ethanol is and what kind of mandates might be required?

Mr. KARSNER. Yes, sir. I think you've framed a very good question. Of course, our current programming through Clean Cities, for example, is nationwide and we would like to see E85 be a nationwide fueling option. But logically it is at lower cost where it is co-located with the conventional industry today. That is why the State of Minnesota has about half the Nation's pumps. Then you can take a handful of other states again co-located with the conventional corn based ethanol economy.

Senator SESSIONS. Now what do you mean by that? Meaning Minnesota produces a lot of ethanol so that's why they have the most ethanol pumps?

Mr. KARSNER. We think there's a relationship there.

Senator SESSIONS. Alright. Do you know how much it costs to move it to Oregon?

Mr. KARSNER. It costs much more than if you got it in Minnesota.

Senator SESSIONS. Now wouldn't it be better to emphasize greater encouragement to the Midwest where most of our ethanol is being produced than to do it nationwide in one fell swoop?

Mr. KARSNER. I think your final phrase is the right one. Do you do it in one fell swoop or is this evolutionary through time? It certainly makes more sense to have more economical co-location earlier with production when the challenges are with delivery, teminalling and transport.

But, your State, for example has amongst the most promising futures in cellulosic ethanol, and as you know, many of the leading scientists that have been contributing to our efforts. So, when and

if we scale cellulosic ethanol and if co-located in other areas then we would anticipate and we would be hopeful, that we have a regime that enables E85 pumps without impediments nationwide.

Senator SESSIONS. Do we have—my time is up. What kind of rules do we have now nationwide that applies to gasoline pumps and ethanol?

Mr. KARSNER. I think that's the dilemma we're here discussing is that really these are State-by-State rules presently and so, for example, some of the issues that have been addressed here today have been addressed in New York with legal and regulatory action. Other States haven't addressed them at all. But I'm not sure that we have a nationwide approach as of yet.

Senator SESSIONS. Thank you.

Senator DORGAN. Mr. Secretary Karsner, let me go through something with you quickly. The President in his State of the Union address said he wants to get to 35 billion gallons of ethanol by the year 2017. That's 10 years from now. You indicated that one half of the gasoline we use in this country is blended with 10 percent ethanol. We use about 140 billion gallons of gas, means 70 billion gallons are blended with 10 percent ethanol. That's a seven billion gallon market for ethanol at the moment.

Ten years from now we want to be at 35 billion according to the President's State of the Union speech and you're talking now about going to 15 percent blend because you can do that without dealing with the other issues. My great concern about what I heard here today is that if we're not running full speed to try to figure out how do you market through vehicle carburetors and fuel injectors this new fuel that we're going to create. If we don't find a way to market that in significant quantities, and I'm not talking about 10 percent or 15 percent, then we're headed toward failure. We're headed toward a cliff with respect to ethanol markets.

I understand why you would say let's try to go from 10 to 15 because you don't need modifications and so on. But if we're not running full speed to try to figure out how you get E85 pumps on those islands on gas stations all across this country. If we don't do that, we can't succeed. So that's my concern at the moment from what I've heard here today because you've mentioned on several occasions well, we can go to 15. We can go to 15.

This hearing is about blend pumps. When I'm talking about blend pumps, I'm talking about 20, 30, 40, 50 percent blend pumps, and I'm especially talking about E85 pumps.

Mr. KARSNER. I want to be clear, because it sounds like I haven't been clear through the hearing. I don't believe any of these are mutually exclusive or sequential. I think that you can maximize the possibilities at E15 and maximize the greater penetration of E85 and that we should be looking at blend pumps for everything in between.

So the question is multiple pathways versus an exclusive pathway. I think we should be preserving multiple pathways. So that's what we're doing is testing E15, E20, higher blends where possible and trying to maximize routes for E85.

Senator DORGAN. One final question. The June GAO report titles the conclusion page, "DOE Lacks a Strategic Approach to Coordi-

nate Increasing Production with Infrastructure Development and Vehicle Needs," Speaking of biofuels, is it fair or unfair?

Mr. KARSNER. We responded to that as generally a fair criticism of the Department's past and it's characteristic of the rate of evolution in the Department's thinking. So we are approaching that report with the need for action.

Senator DORGAN. If a year from now the GAO is asked to do a similar report you think that is—

Mr. KARSNER. That will not be their finding.

Senator DORGAN. There will not be the lack of a strategic approach.

Mr. KARSNER. I would agree. They will not find a lack of a strategic approach if they did a year from now or a month from now.

Senator DORGAN. Mr. Karsner, as I indicated you know a lot about these subjects. I appreciate that you come to government and are lending us your thoughts and your abilities. The fact is that I want you to succeed, but as I started by talking about the major oil companies, I don't suggest that there are villains with respect to these issues. I think there are some interest who have their own self interest that is at odds with the national interest, and I will talk a little bit about that I guess with a couple on the next panel.

But when that is the case, when self interest is big enough to have a significant national impact and that self interest is at odds with the national interest then public policy must prevail in my judgment. So, I appreciate very much your coming here today.

Senator Corker, did you have another comment?

Senator CORKER. Mr. Chairman, I noticed that I had about 30 seconds left on my time before. I would, I do think that this testimony has been most helpful and I think there are a number of things that we can do incrementally to make a huge difference and I really appreciate you having this hearing.

I'm wondering if based on all the questions that have been asked today and certainly your testimony if you might send back to us some legislative proposals.

Mr. KARSNER. If they're cleared by OMB, I'd be happy to do that, sir.

Senator CORKER. Forget OMB. I found them to be the hicky in all these things. I hope that OMB is present. But could you send back to us some policy changes that you think the Balkanization issue, some of the other things we talked about that we might consider and very near legislation to really address a number of these issues. All of which are incremental, but added up together might make a huge difference.

Mr. KARSNER. Yes, sir, per the Secretary's advice we are working on a bipartisan basis for technical drafting assistance for any legislation that the President might have the capacity to sign to address this problem.

Senator DORGAN. Secretary Karsner, if you do and I expect you do have to run all of these things through the Office of Management and Budget, would you send us a copy of what you send to the Office of Management and Budget?

Mr. KARSNER. I'll endeavor to do whatever the process requires.

Senator DORGAN. Thank you very much.

[Laughter.]

Senator DORGAN. You will not do that. I understand.

[Laughter.]

Senator DORGAN. Secretary Karsner, thank you very much for being with us.

Mr. KARSNER. Thank you, sir.

Senator DORGAN. The third panel today, and I will ask them to come up as Secretary Karsner takes his leave, is going to be Mr. David Terry, Project Coordinator of the Governors' Ethanol Coalition; Mr. Charles Drevna, the Executive Vice President of the national Petrochemical and Refiners Association; Mr. Jonathon Lehman, Advisor of VeraSun Corporation; Ms. Deborah Morrissett, Vice President of Regulatory Affairs Product Development at the Chrysler Technology Center in Auburn Hills, Michigan; and Mr. Phillip Lampert, Executive Director of the national Ethanol Vehicle Coalition in Jefferson City, Missouri.

We appreciate all of you coming today. Some of you have traveled some ways to be with us, and you are aware from the questions and the testimony that you've heard previously that this is of great interest to us. We're trying to understand what is happening and what should happen in order to advance good public policy.

Mr. David Terry, you are testifying on behalf of the Governors' Ethanol Coalition. As I indicated all of your complete statements will be made part of the record. We ask that you summarize.

Mr. Terry, you may proceed.

STATEMENT OF DAVID TERRY, REPRESENTATIVE, GOVERNORS' ETHANOL COALITION

Mr. TERRY. Thank you, Mr. Chairman and distinguished members of the subcommittee. I, representing the Governors' Coalition today and on behalf of Nebraska Governor, Dave Heineman, and Illinois Governor, Rod Blagojevich, Chairman and Vice Chairman of the Governors' Ethanol Coalition, we appreciate the opportunity to present our views today.

The Governors' Ethanol Coalition includes 36 of the Nation's Governors focused on the use of ethanol based fuels to decrease the Nation's dependence on imported energy, improve the environment and stimulate the national economy. The Coalition was formed in 1991 by then Senator Ben Nelson when he invited other Governors interested in promoting the increased use of ethanol.

Two years ago the Coalition delivered to Congress and the President a set of national policy recommendations that were adopted as a part of the energy policy after 2005. These policies and others resulted in the dramatic expansion of ethanol use and production and accelerating the delivery of a new generation of advanced biofuels such as cellulosic ethanol.

Because of the rapid pace of growth in the biofuels market and the opportunity to do more to address the serious energy challenge facing the Nation, the Governors prepared a new set of recommendations this year. These recommendations were focused on a combination of robust research and demonstration coordinated with the States, expanded renewable fuel standards and a strategic approach to increases ethanol infrastructure. Collectively these recommendations are an essential part of the solution to our energy crisis.

In the infrastructure area the Coalition recommends encouraging the Department of Energy and other relevant Federal agencies to partner with states and industry to work through transitional infrastructure issues such as storage sighting, rail access, pipeline potential and other logistical issues. But our greatest concern in infrastructure remains in building a higher—a larger market for higher blend ethanol such as E85 and other 20 to 85 percent blends in order to offer consumers a choice in the fuels they use.

To address this issue we recommend continued support of ongoing national program efforts such as those of the National Ethanol Vehicle Coalition, represented by Phil Lampert here today. Also the Clean Cities Program at the Department of Energy. While we think these infrastructure programs are extremely important and should be expanded, we think other more aggressive and creative solutions are needed as well.

In that regard, we think we need to view infrastructure in a new way to reflect the fundamental changes that have occurred in the biofuels market in the last couple of years. In particular to keep pace with the historic commitment offered by the domestic auto manufacturers to produce 50 percent of their vehicles as flex fuel capable provided the infrastructure commitment also rises to that occasion. We think this is too historic of a commitment to miss as a way to break the long standing stalemate of too few vehicles and too few pumps.

We think the vehicle side of this equation is changing, and we think we need to change our approach as well and be more strategic, more aggressive in that regard. Nine months ago the Coalition convened. A group of experts led by Senators Daschle and Dole to examine an approach to infrastructure that would complement these ongoing national efforts.

The result was determination that it was a very complex issue, would be very difficult to transform markets on a national basis without concentrating on such a strategic manner first on major metropolitan areas. We think of major metropolitan areas as being modest sized cities as well as larger cities. We dubbed this approach city to region initiative. The Coalition recommended that initiative to Congress and the President earlier this year and to the Department of Energy.

The idea would be for—to concentrate the efforts of vehicle manufacturers, distributors, fuel retailers, producers, States and cities to transform the transportation and fuel markets of at least three major metropolitan cities. The initiative would propose cost shared competitive Federal funding for three State led teams to bring higher blend ethanol fueling pumps, vehicles, incentives, education and marketing to those areas. The result, we hope, of the program would be to bring higher blend ethanol pumps to at least 25 percent of the stations in those metropolitan areas. The Coalition believes that the Department of Energy should be encouraged to undertake the city to region initiative as well as other creative approaches that can move higher blend ethanol forward more quickly.

Today's focus on ethanol infrastructure is in part a result of the success we are witnessing in greater ethanol production and the advances in cellulosic and other biofuels technologies. The Governors' Ethanol Coalition believes that we must act now to expand

infrastructure in a manner that prepares the way for this important domestic fuel to become part of the mainstream choice for American consumers.

Thank you, Mr. Chairman and members of the subcommittee for the opportunity to present our views.

[The prepared statement of Mr. Terry follows:]

PREPARED STATEMENT OF DAVID TERRY, REPRESENTATIVE, GOVERNORS' ETHANOL COALITION

Chairman Dorgan and distinguished members of the Energy Subcommittee, my name is David Terry and I serve as representative of the Governors' Ethanol Coalition. On behalf of Nebraska Governor Dave Heineman and Illinois Go vernor Rod R. Blagojevich, Chairman and Vice Chairman of the Governors' Ethanol Coalition (http://www.ethanol-gec.org), I thank you for the opportunity to appear before you today and greatly appreciate your effor ts to bring attention to the need to improve our nation's renewable fuels infrastructure.

The Governors' Ethanol Coalition includes thirty-six of the nation's governors and is focused on the use of ethanol-based fuels, to decrease the nation's dependence on imported energy resources, improve the environment, and stimulate the national economy. The Coalition was formed in 1991 when Nebraska Governor Ben Nelson invited other governors interested in promoting the increased use of ethanol to work together. Since then, the Coalition has grown to 36 governors plus international representatives from Brazil, Canada, Mexico, Australia, Sweden, and Thailand, all working to expand the opportunities brought by the production and use of clean, renewable, domestic biofuels.

Two years ago, the Coalition delivered to Congress and the President sweeping national policy recommendations that were adopted by Congress in the Energy Policy Act of 2005. The result of these policies was the dramatic expansion of the production and use of ethanol and the accelerated delivery of a new generation of advanced biofuels. These recommendations were driven by the governors' concern for the threat presented by our dependence on oil, which has diminished the Nation's leverage in foreign affairs and resulted in an enormous and continual transfer of the Nation's wealth to other countries.

Because of the rapid pace of growth in the biofuels market and the opportunity to do more to address the serious energy challenge facing our Nation, the governors prepared a new set of recommendations this year. These new policies stress a combination of robust federal research and demonstration coordinated with the states, an expanded Renewable Fuels Standard (RFS), and a strategic approach to increased ethanol infrastructure. Collectively these recommendations are an essential part of the solution to our energy crisis. We are pleased with the Subcommittee's focus on the longstanding infrastructure challenge and as Congress considers energy legislation we urge an approach that is consistent with the Coalition's recommendations, Ethanol from Biomass: How to Get to a Biofuels Future (http://www.ethanol-gec.org/information/biomasstoethanol2006.htm).

The Coalition recommends a set of infrastructure policies that encourage the U.S. Department of Energy and other relevant federal agencies to partner with the states and industry to work through transitional infrastructure issues such as storage siting, rail access, pipeline potential, and other logistical issues. However, the governors' greatest concern is building a market for higher blend ethanol (i.e., E30 - E85) in order to offer consumers a choice in the fuels they purchase and to diminish the use of imported oil. To address this issue, we recommend continued support for the Clean Cities program's ethanol efforts, and strongly urge support for the work of the National Ethanol Vehicle Coalition—a unique organization that employs a practical, market-oriented approach that is producing results across the Nation.

While the above core ethanol infrastructure development efforts are essential, the governors believe infrastructure must be viewed in a new light to reflect the f undamental changes that have occurred in the marketplace over the past two years. A range of creative solutions are needed to keep pace with the rapidly growing supply of ethanol and the historic commitment from our domestic auto manufacturers to produce 50 percent of their vehicles as flex fuel capable by 2012. There are even signs that foreign automakers are taking similar steps. We must use this commitment from the automakers since it is the most dramatic opportunity in years to break the longstanding stalemate of too few vehicles and too few pumps. The vehicle side of this equation is changing and is poised to change in far more dramatic ways over the next five years. We must change our approach as well.

The Coalition recommends overcoming the vexing infrastructure challenge by calling on states, cities and industry to bring innovation through a City-to-Region approach. The Coalition recommended City-to-Region initiative would focus the efforts of vehicle manufacturers and distributors, fuel retaile rs and producers, states, and cities to transform the transportation fuel markets of three or more major metropolitan areas. The model offers consumers a new biofuel choice in the vehicles they purchase and the fuels they buy. The initiative would provide cost-shared, competitive federal funding for three state-led teams that aim to provide a significant number of higher-blend ethanol fueling pumps, flex-fuel vehicles, incentives, education, and marketing. The result would be an offering of higher-blend ethanol at 25 percent of refueling stations in three major metropolitan areas—a market transforming level that could spread throughout a region. The Coalition is convinced that the cost-shared resources to implement this initiative are available within the Department of Energy's available funding. They should be encouraged to work with the governors to launch this $8 million initiative immediately, and to provide $2 million for ongoing national ethanol infrastructure development efforts.

BACKGROUND AND ANALYSIS

The Nation's farmers, ethanol producers, and others have worked for years to achieve the recent increases in ethanol production. Moreover, in the next two years the industry will likely double production to as much as 12 billion gallons a year, presenting both an opportunity to fuel more vehicles and a need to find long-term markets. Data suggests that the ethanol industry is moving quickly toward a saturation point of the 10 percent blend market for ethanol (its highest value use as an octane enhancing additive), leaving additional production capacity as it comes on line with an unclear market and an uncertain future. This is a concern of the governors and federal policy makers as we attempt to move the Nation away from unsustainable imports of oil and refined petroleum products and toward a more secure, efficient, and clean energy future.

The Governors' Ethanol Coalition recognized this challenge in late 2006 and sought advice on the deployment of higher blend ethanol fuels from an expert gr oup assembled by former Senate Majority Leaders Bob Dole and Tom Daschle. The group included senior officials representing domestic auto manufacturers, fuel retailers and producers, and environmental advocates. The sense among these experts was a need to focus resources—human, financial, marketing, product, policy—in key markets that offer the best economic and environmental advantage for sustained growth in the use of the fuel. They concluded that absent coordinated state, federal, and private efforts to provide a "demonstration effect" boost, the existing market would not change in ways that would offer consumers fuel choice in the foreseeable future.

The Coalition found that the complexity of market transformation and commercialization would be too difficult if initially approached on too large a scale, such as an entire region. Rather, success in a single concentrated market—an approach that mirrors and supports typical retail market introduction of products—would be most efficient and expedient. The approach allows the local interests to determine if they have the potential to transform their own market and provides a modest and sustained support system for that to occur.

One market analysis reviewed by the Coalition in developing this appr oach suggested that growing ethanol production in the western, southern, and eastern United States could, over time, satisfy a portion of the blend market in those areas, leaving a large portion of Midwest production for local consumption. The logistical efficiencies suggested in the analysis pointed to an opportunity for local market players to build on this advantage and sell much of their product in local high blend markets rather than shipping it long distances. Similarly, emerging local production in the south, northeast, and west may also present opportunities to move directly to higher blends in key markets.

DETAILS OF THE GOVERNORS' RECOMMENDED CITY-TO-REGION STRATEGY

The extremely limited availability of higher-blend ethanol (i.e., E30 - E85) at retail gasoline outlets in most states and cities and the limited availability of flex-fuel capable vehicles in any one area are the most challenging barriers to transforming the transportation fuel marketplace in the United States. However, rapidly evolv ing policies at the state and federal levels, increased manufacture of flex fuel vehicles, and dramatic increases in ethanol production present the Nation with a new opportunity to break this stalemate through a strategic ethanol market transformation effort—The City-to-Region Initiative.

The recommended $8 million, three-year City-to-Region initiative, should be implemented by the Department of Energy in partnership with the governors, and would focus the efforts of vehicle manufacturers and distributors, fuel retailers and producers, states, and cities to transform the transportation fuel markets of three or more major metropolitan areas and offer consumers a new biofuel choice in the vehicles they purchase and the fuels they buy. The initiative would provide cost-shared, competitive federal funding for three state-led teams that aim to provide a significant number of higher blend ethanol fueling pumps, flex-fuel vehicles, incentives, education, and marketing. The result would be an offering of higher-blend ethanol at 25 percent of refueling stations in three major metropolitan areas—a market transforming level that could spread throughout a region.

The City-to-Region Initiative would begin with the creation of a plan that includes specific goals, schedules, and measures for success. The Department of Energy would develop the plan in partnership with the governors, and in coordination with other stakeholders and implement the program on an expedited basis moving from plan development to issuing the solicitation within six months. The initiative should include a significant outreach effort aimed at engaging state and local leaders, private sector interests, and other interests (e.g., environmental, agricultural) and motivating them to assemble proposal teams, devise complementary fuel and/or vehicle incentives, conduct market research, and gain commitments.

In addition, the Department of Energy must provide for stakeholder input on the development of the solicitation to ensure that barriers are addre ssed and important "on the ground" ideas are included in the initiative. The solicitation should require proposing teams to demonstrate substantive involvement and commitments from the following: both state and local governments vehicle manufacturers and sellers, fuel producers and distributors, relevant local non-governmental organizations, and interested environmental community stakeholders. Additional important requirements of the solicitation include: 1) teams being led by, and proposals to be submitted by, state government entities; 2) teams include a senior city government official from the target metropolitan area; 3) teams commit to achieving a market transformation goal for their defined metropolitan area of at least one higher-blend fueling pump at 25 percent of retail fueling outlets within three years.

Finally, the Department of Energy should dedicate adequate resources to disseminate the results and lessons learned from the selected projects as they are implemented. This is an important step that will inform other biofuel infrastructure development efforts and spur states and cities to replicate the approach of the initiative.

CONCLUSION

Our focus on ethanol infrastructure at today's hearing is in part the result of the increasing success we are witnessing in increased ethanol production and advances in cellulosic and other biofuel technologies that will produce ethanol from a range of feedstocks in every region of the Nation. The Governors' Ethanol Coalition believes that we must act now to expand the ethanol retail infrastructure in a manner that prepares the way for this important domestic fuel to become a mainstream choice for American consumers. We respectfully urge you to consider our recommendations as you deliberate this important energy legislation in the coming weeks.

Senator DORGAN. Mr. Terry, thank you very much for being with us. Next we will hear from Mr. Charles Drevna the Executive Vice President of the National Petrochemical and Refiners Association. Mr. Drevna, welcome.

STATEMENT OF CHARLES T. DREVNA, EXECUTIVE VICE-PRESIDENT, NATIONAL PETROCHEMICAL & REFINERS ASSOCIATION

Mr. DREVNA. Thank you, Chairman Dorgan, Senator Murkowski and members of the subcommittee. My name is Charlie Drevna and I am EVP of NPRA, the National Petrochemical and Refiners Association.

Let me start out by saying that the domestic refining industry is one of the most competitive and heavily regulated industries in the Nation. Perhaps the only industry where both the facility and

the product are heavily regulated. Today's refinery is really a highly sophisticated, complex facility that in essence produces high purity chemicals.

These requirements add to the complexity of the facility and require more barrels of crude to produce an equivalent amount of product. The industry has accomplished this task while at the same time increasing capacity. As a matter of fact if you look at the capacity gains over the last 14 years it's equivalent to the addition of one new oil class refinery per year. We always talk about no new refineries being built. But in essence over the last 14 years on equivalent volume basis, we've built 14 new ones.

This year despite unplanned and planned outages that have made—that made headlines across the country and in this Congress, we produced record amounts of gasoline. More than we've ever produced. Again, given the fact that we still have to make the product specifications very stringent with ultra low sulfur diesel, with ultra low sulfur gasoline and all the other specifications come with it.

Our concern, one of our concerns, Senator, is the mixed signals we continually get from policy makers. Market forces do indeed imply a need for expansion of domestic refinery capacity while policy often times discourages it. For example, let's talk about the Administration's desire to reduce gasoline usage in 2017 by 20 percent. What does that mean in real terms?

That means that we will be using and producing less gasoline in 2017 than we are today. Now if that's the goal, fine. However, what does that—again what does that really mean. While diesel demand is going to go up, we can't make diesel without making gasoline. So, if we're going to meet the needs of the American truckers and others we're going to have to keep producing gasoline. That gasoline will end up being exported.

Now exporting domestically produced gasoline, I question whether that is in the national security interest. The other thing that's going to happen is that it will limit imports. If we would have had this policy in position two summers ago, when the awful events in the Gulf occurred. The marketplace wouldn't have been able to send a signal to the importers to bring in fuel to supply our needs.

So these are all the kinds of things that we just say, let's sit down and question. There are a lot of dependent variables in this equation and again they're dependent variables. We have to know and understand each of them. You know—let me state clearly. We do, NPRA and its members support the use of biofuels but we need to know the volumes that Congress has asked—required or may require are actually going to be there on the dates that they're supposed to be.

We can say that by 2012 there will be cellulosic ethanol available because the technology will be there. Unfortunately, we can't make capital commitments on a hope. We have to know that it's going to be there. After the fact labors which are usually used for temporary waivers, which are usually used for upsets in the systems, whether it's a pipeline outage or refinery problem. Those are temporary things. If we make the investment that says we expect x millions of gallons of cellulosic ethanol by such and such a date we hope it will be there. Temporary waivers won't solve the problem.

I guess I'd be remiss if I didn't talk a little bit about the E85 that we—that has been talked so much about so far in the hearing. It is a chicken and an egg thing. With the limited amount of vehicles out there, right now it doesn't make economic sense to put more in for each individual station. The Petroleum Marketing Practices Act dictates what can and can't be done in contractual obligations. So while states can do their own thing. There is national law.

The last thing, Senator is E85; it may be a good product. It is a good product, but it's not our product. We can't vouch for it. That's why our—some gasoline producers are hesitant to allow it under their canopies because of potential liability issues. Once those things are solved and they can be solved over time. But we can't expect something that is not our product and we can't vouch for to be placed under our canopies.

Thank you and I look forward to answering your questions. That's a lot. Let me explain. We're dedicated to working cooperatively with everyone to ensure a stable and effective fuels policy. Again, we need to know and understand all the variables so we're all pushing in the same directions, Senator. Thank you very much.

[The prepared statement of Mr. Drevna follows:]

PREPARED STATEMENT OF CHARLES T. DREVNA, EXECUTIVE VICE-PRESIDENT, NATIONAL PETROCHEMICAL & REFINERS ASSOCIATION, WASHINGTON, DC

Chairman Dorgan, Ranking Member Murkowski, and members of the Subcommittee, I am Charles T. Drevna, Executive Vice President of NPRA, the National Petrochemical & Refiners Association. Thank you for the opportunity today to provide our perspective on biofuels and infrastructure needs relative to the proposed increases in the federal biofuels mandate. NPRA is a national trade association with more than 450 companies, including virtually all U.S. refiners and petrochemical manufacturers. Our members supply Americans with more than 90% of the nation's gasoline. They also provide them with a wide variety of products used in their homes and businesses. These products include gasoline, diesel fuel, home heating oil, jet fuel, lubricants and the chemicals that serve as "building blocks" for everything from plastics to clothing to medicine to computers.

A. INADEQUATE RENEWABLE AND ALTERNATIVE FUELS INFRASTRUCTURE CREATES SIGNIFICANT PRODUCTION AND ENVIRONMENTAL CHALLENGES

NPRA supports U.S. energy policies that improve the security of our nation, assist our consumers, and protect our environment. There is universal agreement that alternative fuels will continue to be a strong and growing component of the nation's transportation fuel mix. NPRA supports the sensible and workable integration of renewable and alternative fuels into the marketplace based on market principles and demands. As we have stated in the past, we do not support the mandated use of renewable and alternative transportation fuels. However, existing fuels mandates require refiners, blenders and importers to blend significant quantities of renewable fuel with petroleum to create America's gasoline supply. The lack of adequate renewable and alternative transportation fuel infrastructure creates significant production and environmental challenges. This situation, coupled with the uncertainty of a guaranteed supply of affordable renewable fuels—especially when considering the massive amounts being discussed—will only lead to more market instability and consumer impacts.

Congress passed the Energy Policy Act of 2005 (EPACT) that includes a Renewable Fuel Standard (RFS) which increases to 7.5 billion gallons in 2012. Domestic refiners are already among the largest users of ethanol and the marketplace has signaled the blending of more ethanol than required by this new mandate. Besides extending the fuel supply, ethanol increases octane, has dilution benefits that help meet reformulated gasoline (RFG) specifications, and limits carbon monoxide emissions. Today, ethanol is used in all RFG year-round even though oxygenates are no longer required, and in approximately 25 percent of all other gasoline produced in the U.S. ("conventional" gasoline). As a result, ethanol is in about 50 percent of all U.S. gasoline. Clearly, even without the original RFS mandate, refiners will continue to rely on ethanol as a vital gasoline blendstock.

Ethanol, however, has a lower energy content than gasoline and may create ozone emission problems, especially in warm weather. Creating artificial demand for biofuels places unwarranted strain on other industries that compete for the same feedstocks. Recent reports indicate that ethanol demand has raised corn prices, thus impacting food and other commodity prices. Projected ethanol demand is likely to further exacerbate the problem and create food price increases across the economic spectrum. Just as importantly, the use of ethanol raises significant transportation and logistical issues, as this hearing intends to explore.

Unlike gasoline or diesel, renewable fuels such as ethanol cannot be distributed through pipelines because of problems with water contamination or corrosion. Due to its water solubility, for example, ethanol separates from fuel during shipment through pipelines and results in noncompliant or substandard fuel. In addition, due to ethanol's corrosive properties, it degrades the strength of pipeline valves and joints. Consequently, ethanol must be blended with gasoline or the appropriate blendstock as near to the consumer as possible, usually at the delivery terminal. Ethanol delivery and distribution, therefore, must be done through more expensive means such as truck, rail car, barge or ship before it is blended at the terminal. Terminals must either invest in new ethanol storage tank and blending equipment or dedicate existing storage tanks. This reduces the quantity and diversity of on-hand inventory. Clearly, any significant increase in the production of ethanol will only result in more stress to the distribution system, creating additional impacts on supply and market stability.

A recent GAO study evaluated the biofuels distribution infrastructure and found:

> The biofuel distribution infrastructure has limited capacity to transport the fuels and deliver them to consumers, and significant growth in the distribution system faces a variety of impediments. Biofuels are primarily transported by rail, but also by truck and barge, and limited capacity in this distribution system has led to supply disruptions and concerns about the system's ability to effectively transport greater amounts of biofuels if production significantly increases. The key challenges to meeting biofuel transport needs are potential capacity limitations in the freight rail system and the cost of developing a dedicated ethanol pipeline system if one is needed. . . . The current biofuel transport system is also more costly than for petroleum fuels. According to NREL, the overall cost of transporting ethanol from production plants to fueling stations is estimated to range from 13 cents per gallon to 18 cents per gallon, depending on the distance traveled and the mode of transportation. In contrast, the overall cost of transporting petroleum fuels from refineries to fueling stations is estimated on a nationwide basis to be about 3 to 5 cents per gallon.[1]

The July 18th National Petroleum Council report entitled "Facing the Hard Truths About Energy" also provides an instructive perspective:

> As with any large-scale energy source, technical, logistical and marketing requirements will need to be met for biofuels to achieve their potential. Milestones along this development path will include: investments in rail, waterway and pipeline transportation; scale-up of ethanol distribution; and technology deployment for cellulosic ethanol conversion. The timeframes required in many cases to move technology from concept to full-scale application may make such sources available only later in the outlook period.[2] . . . Much of the infrastructure needed to increase biomass use does not exist today, limiting the growth rate of biomass, much as with any new energy source.[3] . . .

- Energy forecasts generally do not explicitly account for specific energy infrastructure requirements, such as capital requirements, return expectations, construction schedules, resources, and perm itting processes.
- Uncertainty relating to energy demand outlooks may restrict or delay infrastructure investment.

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[1] U.S. Government Accountability Office, "Biofuels: DOE Lacks a Strategic Approach to Coordinate Increasing Production with Infrastructure Development and Vehicle Needs," GAO-07-713, June 2007, pp. 6 and 23.

[2] NPC, Facing the Hard Truths about Energy, July 18, 2007, Chapter Two: Energy Supply, Section II. Prospects for Energy Supply, E. Biomass, page 16.

[3] Ibid., Chapter Two: Energy Supply, Section III. Analysis of Energy Outlooks, D. Biomass, 4. Infrastructure, page 1.

- Data collection and analysis of energy transportation infrastructure is inadequate for evaluating infrastructure capacity, throughput and future needs. . . .
- Infrastructure requirements of many alternative energy sources at scale are not well understood and may be significant.[4]

(emphasis in the original).

> The increasing integration of biofuels into the refined products distribution system can complicate distribution logistics, increase transportation costs, and reduce supply reliability. The requirements for transporting biofuels have led to large shipments by rail and truck from bio-refineries to product distribution terminals. This represents a shift in the fuels transportation system from large, cost efficient, bulk shipments by reliable and dedicated pipelines, barges, and ships to small, less cost efficient shipments by non-dedicated railroads. The shift may reduce supply reliability while increasing transportation costs. Efforts to incorporate biofuels into existing pipelines or construct new, dedicated pipelines for biofuels at significant cost are directed at overcoming such hurdles.[5]

GAO also believes that the Department of Energy, the Agency responsible for implementing energy policy, does not currently have "a comprehensive strategic approach to coordinate the expansion of biofuel production with biofuel distribution infrastructure development and vehicle production, and has not evaluated the effectiveness of biofuel tax credits." Further, GAO also found "DOE has not yet developed a comprehensive strategic approach to coordinate the significantly larger volume of biofuel production that could result from the Biomass Program with distribution infrastructure development and vehicle production. DOE officials told us [GAO] they recognize the importance of developing a strategic approach and have taken an initial step in that direction."

B. TRANSPORTATION OF BIOFUELS

The most notable economic challenge to the development of a viable, stand-alone biofuels transportation industry is the seemingly constant push for an ever-increasing mandate of these fuels. As the transportation biofuels sector grows, its expansion will have a direct impact on those industries that use and transport its products and those industries that compete with it for the same resources. A significant increase in biofuels consumption complicates the entire transportation fuel production, supply and distribution network. As previously mentioned, ethanol production occurs primarily in the Midwest and relies on truck, rail and barge infrastructure. The strain biofuels place on the nation's rail infrastructure and tank-car capacity is of particular concern. During the spring of 2006, some federal RFG areas that required ethanol for blending faced real product shortages due to the inability of the rail infrastructure to handle the increased volume of ethanol. It remains to be seen whether transportation capacity growth will keep pace with biofuels production, particularly after factoring the significant increases in the government mandate that are being proposed. As the biofuels industry expands, it will monopolize increasing amounts of truck, rail and barge traffic. All industries reliant on these modes to distribute products will face increased competition for limited resources.

A free market-based fuel transportation system is the best mechanism to ensure development of the requisite infrastructure to support increased use of biofuels. The appropriate signals to producers and the investment community that infrastructure development is warranted will be sent by that market, not by mandates. There is universal agreement, and the marketplace has indeed proved, that biofuels will continue to be a strong and growing component of the nation's transportation fuel mix.

As relatively new biofuels enter the market, increased transportation and logistical issues are likely to arise. The market should be given ample opportunity to resolve these infrastructure and logistical complications.

C. ECONOMICS OF E-85 INFRASTRUCTURE

E-85 is an alcohol fuel mixture typically containing up to 85 percent ethanol with the remaining volume being gasoline or another hydrocarbon. E-85 is not currently compatible with fuel dispensing equipment at most retail gasoline stations. Furthermore, due to ethanol's corrosive nature, Underwriters Laboratories (UL), in October

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[4] Ibid., Chapter Two: Energy Supply, Section III. Analysis of Energy Outlooks, F. Energy Conversion and Delivery Infrastructure, 1. Key Observations—Energy Infrastructure, page 1.

[5] Ibid., Chapter Two: Energy Supply, Section III. Analysis of Energy Outlooks, F. Energy Conversion and Delivery Infrastructure, 3. Analysis of Refining Forecasts, page 6.

2006, suspended authorization to use UL Markings on components for fuel dispensing devices that will dispense any alcohol blended fuels containing over 15 percent alcohol (such as E-85).

E-85 also has a substantially lower energy content per gallon than gasoline (only about 70 percent of gasoline's energy content) that results in a significant fuel economy penalty for E-85. In order for retail consumers to cover the same distance they would using gasoline at the same cost, the retail price of E-85 must be 25-30 percent lower than the price of gasoline. The use of E-85 is limited to flexible-fuel vehicles (FFVs), which currently represent a very small percent of today's vehicle fleet. Therefore, E-85 is incompatible with most vehicles and the near-term potential market for E-85 is constrained.

GAO examined the infrastructure costs for using ethanol:

> The key challenge to increasing biofuel production is making biofuels cost-competitive with petroleum-based transportation fuels . . . the average wholesale price of ethanol per gallon in 2006 was about 33 percent higher than the average wholesale price of gasoline. Since ethanol contains one-third less energy than gasoline, the price differential is even more significant than this comparison indicates . . . For example, because ethanol is corrosive, E85 requires separate storage tanks, pumps, and dispensers at fueling stations. It can cost a fueling station operator around $3,300 to minimally modify existing equipment or about $60,000 to install new equipment—which may be a significant impediment for many potential retailers.[6]

Additionally, GAO also examined the economics of E-85:

> High demand for ethanol in low blends as an oxygenate and fuel extender has contributed to wholesale ethanol prices that are significantly higher than the wholesale price of gasoline. An additional incentive to selling ethanol in blends of 10 percent or lower, according to one major fuel blender with whom we spoke, is that the fuel economy reduction at that level is too small for consumers to notice; hence, the fuel can be sold at the same price as conventional gasoline at fueling stations. On the other hand, to attract customers, fueling stations must generally sell E85 at a discount to conventional gasoline to offset the noticeably lower miles per gallon that drivers experience when using the fuel. For example, in 2006, according to DOE's Alternative Fuel Price Reports, E85 sold for 11 percent less on average than regular gasoline at a sample of fueling stations nationwide. However, few producers are willing to discount ethanol so that fueling stations can price E85 lower than gasoline. Consequently, EIA projects that use of ethanol for E85 will continue to be limited until the market for blends of 10 percent and under is nearly saturated.[7]

Given these perceptions of the economics, will a rational, orderly, and market-driven E-85 infrastructure be developed? I believe so only when the economics warrant this investment.

D. REFINERY CAPACITY EXPANSION PROJECTS

Leadership on this Committee and elsewhere in Congress has stressed the need to maximize refining capacity in the United States, and our members have risen to the challenge, principally by adding hundreds of thousands of barrels of capacity at existing refineries. In fact, on the aggregate over the last 14 years, our companies have essentially built the equivalent of one new world-class refinery each year. But continued success in this area requires legislative and regulatory certainty that attracts capital investment to refining. We know that the Committee recognizes the need for such certainty.

It should be clearly understood that requirements to substantially increase the volume of ethanol and other renewables could essentially supplant a significant portion of the need and desire for additional domestic refining capacity. I must note that U.S. refiners are generating record amounts of refined product. According to EIA, production was at an all-time weekly high from June 22—June 29, averaging about 9.4 million barrels a day. Despite the unplanned refinery outages and regularly scheduled maintenance, production for the first half of the year is at an all-time high (9 million barrels a day), about 700,000 barrels a day higher than the same period four years ago (8.3 million barrels a day).

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[6] GAO, Op.Cit., pp. 5 and 6.
[7] GAO, Op.Cit., p. 28.

But refiners must make their independent re-investment decisions today on what they believe to be the longer-term (10-15 years or more) outlook. The domestic refining industry is likely to look upon rapidly rising ethanol and other biofuels requirements in the coming years as adding significantly more risk to investments in capacity expansions. As recently as 2006, the Department of Energy forecast that domestic refiners were likely to add 1.5 million barrels per day of capacity between 2006 and 2010. These decisions are being re-visited in boardrooms across the refining sector as the anticipated surge in ethanol requirements and mandates in the near future will pressure domestic, and undoubtedly some foreign refiners currently supplying the U.S. market to postpone or cancel new investments in petroleum refining capability.

To illustrate the point further, the President's proposal, which calls for the use of 35 billion gallons per year of renewable and alternative transportation fuels by 2017, primarily ethanol, also aspires to a 20-percent reduction in the use of gasoline by the same time. EIA projects that U.S. gasoline demand in 2017 will be 161 billion gallons. A 20-percent reduction of this figure would result in 129 billion gallons of gasoline. In 2006, U.S. production of gasoline was 136 billion gallons and net imports of finished gasoline equaled 7 billion gallons. Therefore, the Administration's target for gasoline use in 2017 is below today's U.S. production levels, sending a signal to the refining industry to reconsider expanding domestic refining capacity. The U.S., currently a net importer of gasoline, could become a net exporter of gasoline.

The U.S. is also currently a net importer of diesel, jet fuel and other petroleum products. In the next 10 years, demand for diesel, jet fuel and other non-gasoline petroleum products will grow. The demand for diesel may grow faster than biodiesel production. Current diesel demand is about 3.5 million barrels/day and biodiesel production last year was only about 15,000 barrels/day. If U.S. refining capacity is not expanded, the U.S. could require a significant increase in imports of diesel, jet fuel and other non-gasoline petroleum products to meet growing demand.

NPRA questions if this unbalanced future is the better alternative in terms of U.S. energy security. We believe that U.S. refining capacity expansions should be encouraged, not discouraged, to ensure the nation's our energy security.

E. STATE BIOFUELS MANDATES SHOULD BE PREEMPTED

The present enthusiasm for renewable fuels has resulted in several states and even municipalities adopting local mandates. Local mandates will impose additional strain on the transportation fuels distribution system and increase costs for shipping and storage. While it still creates many problems, the existing federal Renewable Fuels Standard mandate with its credit-trading provisions contains a degree of freedom that allows the distribution system to operate at a low-cost optimum by avoiding infrastructure bottlenecks (such as lack of storage or rail capacity). Mandating ethanol or biodiesel usage in specific areas forces a distribution pattern that is less flexible, and therefore has less capability to minimize costs. These additional costs will be borne by consumers.

Public policy should focus on preventing the proliferation of state biofuels mandates that will have negative consequences for the motor fuel supply and will interfere with the smooth implementation of the federal RFS. EPACT includes a renewable content requirement for motor vehicle fuels, the RFS provision (see Section 1501). The RFS is administered by EPA and requires the increased use of ethanol or biodiesel in motor fuels. Although this is a federal mandate for biofuels consumption, it does not currently preempt similar state mandates. There are several recent state biofuels mandates since EPACT was enacted, including those in Louisiana, Missouri, Oregon, and Washington. It is difficult for regulated parties to reconcile different state and federal biofuels mandates (e.g., credit trading, averaging, banking credits, identifying liable or obligated parties). Inconsistencies will lead to instability in the marketplace. Further, these mandates create boutique markets requiring special fuel formulations and transportation logistics, thereby balkanizing the national fuel market.

If Congress wishes to allow for as diverse a supply of alternative fuels as possible, and to promote as much flexibility in the system as possible, state and local biofuels mandates should be preempted.

F. SEVERAL STUDIES WILL INFORM CONGRESS

Biofuels should be developed with complete analysis and full realization of economic and environmental impacts. This would include energy security, public health and the environment, infrastructure, job impacts, and economic development.

One known environmental impact of increased ethanol use is related to ozone emissions. When blended into gasoline, ethanol increases the Reid Vapor Pressure

(RVP) of the fuel, resulting in higher volatile organic compound (VOC) emissions, an ozone precursor, in the summer months. These higher VOC emissions come from the combustion exhaust in the tailpipe as well as permeation from the gasoline tank of a vehicle sitting in the sun on a hot day. Although many areas of the country allow gasoline blended with ethanol to have a higher summer RVP than unblended gasoline, some do not (i.e., California, federal RFG covered areas, El Paso, TX and Pittsburgh, PA). Others areas may also restrict higher RVP in the future in response to a potential new ozone NAAQS.

The Fuel Harmonization Study ("the Study") required under Section 1509 of EPACT requires EPA and DOE to jointly study the effect of federal, state, and local motor vehicle fuel requirements on the supply, quality, and price of fuels available to the consumer. In addition, the Study will examine the effects of the various requirements on the achievement of air quality goals, the impact on refiners and the fuel distribution system. Plans for this analysis, due June 1, 2008, are discussed in the EPA/DOE boutique fuels report released on January 5, 2007.[8] According to the Section 1541(c) Boutique Fuels Report, the Study will cover gasoline volatility (RVP), oxygenated gasoline, vehicle emissions and the effects on air quality of the RFS established under Section 1501 of EPACT. Furthermore, EPA and DOE suggest that in order to "ultimately assess the air quality and associated fuel supply and price impacts of future strategies, new vehicle and engine emission factors that represent the current fleet must first be established." As there is uncertainty over the relationship between motor fuel specifications and vehicle emissions for the current fleet, the full realization of the air quality impacts of biofuels is not understood.

Section 1505 of EPACT requires EPA to study the effects on public health, air quality, and water resources of increased use of substitutes for MTBE in gasoline. This is to be completed by next month, August 2007. This report to Congress will include ethanol.

Section 1506 of EPACT requires EPA to analyze changes in air emissions and air quality due to the use of motor vehicle fuel and fuel additives resulting from the energy bill; a draft report is due by August 2009 and a final report by August 2010.

The California Air Resources Board (CARB) is conducting three areas of research on biodiesel: an emissions study, a NO_X formation and emissions study, and a multimedia evaluation of the impact of biodiesel on the environment and human health. The environmental benefits of biodiesel are of concern because biodiesel may increase NO_X emissions.

It is encouraging that several studies are underway, but others are also necessary, and they certainly must be conducted and their results known and fully understood before Congress enacts any additional fuel mandates.

G. RECOMMENDATIONS

1. The Congressional Budget Office should conduct a comprehensive environmental impact analysis

Senate legislation passed last month mandates an expanded RFS of 36 billion gallons by 2022. Congress should consider energy security, public health and environment, transportation, infrastructure, job impacts, and rural economic development impacts. Legislation should not promote an extensive expansion of renewables without giving any consideration to the environmental or economic consequences to the U.S. We should only promote large changes in the mix of energy types with our eyes open and a full understanding of all consequences.

As previously stated, E-85 has a significantly lower energy content than gasoline. Therefore, consumers will need more frequent trips to E-85 pumps, and the fuel distribution industry must schedule more frequent delivery trips to retail stations with E-85 pumps. This will result in more delivery trips per week from terminals to retail stations with an increase in diesel fuel demand. Further, the overall environmental consequences of such a large increase in E-85 production and delivery need to be understood. Ethanol production depends on large volumes of water; each gallon of ethanol requires the consumption of three gallons of water. Also, associated environmental and other impacts of a large increase in corn ethanol manufacturing plant capacity on water supplies and quality must be quantified. Given that the scope of the environmental studies listed in section F. above is not based on 35-36 billion gallons per year, they will be informative when completed, but insufficient. NPRA recommends a comprehensive environmental impact analysis conducted by the Congressional Budget Office.

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[8] "EPACT Section 1541(c) Boutique Fuels Report To Congress," DOE and EPA, EPA 420-R-06-901, December 2006.

2. Congress should consider preempting state and local biofuels mandates

New state biofuels mandates are not currently subject to the requirement that they be examined by EPA or DOE for their impact on air quality, fuel production, and the fuel distribution system. NPRA believes that they should be. If there is no mechanism to assess the impact of these state mandates on air quality, fuel supply and distribution, the result will undoubtedly be a proliferation of state biofuels mandates with negative consequences on motor fuel supply and considerable interference with implementation of the federal RFS. Congress, therefore, should strongly consider amending the Clean Air Act to include an explicit provision that preempts state and local biofuels mandates.

3. We strongly encourage Congress to further review and consider the five core strategies recommended in the recent National Petroleum Council report requested by Energy Secretary Bodman

NPC recommends the following five core strategies:

- Moderate the growing demand for energy by increasing efficiency of transportation, residential, commercial, and industrial uses.
- Expand and diversify production from clean coal, nuclear, biomass, other renewables, and unconventional oil and natural gas; moderate the decline of conventional domestic oil and gas production; and increase access for development of new resources.
- Integrate energy policy into trade, economic, environmental, security, and foreign policies; strengthen global energy trade and investment; and broaden dialogue with both producing and consuming nations to improve global security.
- Enhance science and engineering capabilities and create long-term opportunities for research and development in all phases of the energy supply and demand system (including studying energy infrastructure needs).
- Develop the legal and regulatory framework to enable carbon capture and sequestration (CCS). In addition, as policymakers consider options to reduce CO2 emissions, provide an effective, global framework for carbon management, including establishment of a transparent, economy-wide cost for CO2 emissions (market-based, visible, applicable to all fuels, predictable over the long term for a stable investment climate; to allow the marketplace to find the lowest cost combination of steps to achieve a carbon reduction).

Congress can and should take appropriate action to help refiners meet the transportation fuel needs of the American public. The simple fact remains that supply and demand for refined products are in an extremely tight balance. Necessary and prudent actions include the following:

4. Make increasing the nation's supply of oil, oil products and natural gas a number one public policy priority

Now, and for many years in the past, increasing oil and gas supply has often been only a secondary concern of policymakers. Oil and gas supply concerns have rarely been factored into policy goals focused on environmental or other concerns. Refineries and other important onshore facilities have been welcome in limited areas throughout the country, including the Gulf Coast. However, policymakers have restricted access to much-needed offshore oil and natural gas supplies in the eastern Gulf and off the shores of California and the East Coast. These areas must follow the example of Louisiana and many other states in sharing their energy resources with the rest of the nation. This additional supply is sorely needed. Policymakers should pay special attention to the timing and sequencing of any changes in product specifications. Failing such action, adverse fuel supply ramifications may result.

5. Resist tinkering with market forces, including imposition of "windfall profits" taxes, LIFO repeal, elimination of foreign tax provisions or "price gouging" legislation

Market interference that may initially be politically popular leads to market inefficiencies and unnecessary costs. Policymakers must resist turning the clock backwards to the failed policies of the past. Experience with price constraints and allocation controls in the 1970s demonstrates the failure of price regulation, which adversely impacted both fuel supply and consumer cost. The state of Hawaii cancelled its less than one-year old gasoline price regulation because it led to higher prices and supply uncertainty. A windfall profits tax would discourage investment in refineries, which is needed to expand domestic production capacity and produce cleaner fuels.

H. CONCLUSION

NPRA members are dedicated to working cooperatively with government at all levels to ensure an adequate supply of clean, reliable and affordable transportation fuels. We stand ready to work with you to ensure a stable and effective fuels policy that utilizes a diversity of resources to improve our national security, assist our consumers and protect our environment. I appreciate this opportunity to testify today and welcome your questions.

Senator DORGAN. Thank you very much. Mr. Jonathon Lehman who is here representing VeraSun Corporation.

Mr. Lehman.

STATEMENT OF JONATHON LEHMAN, REPRESENTATIVE, VERASUN ENERGY

Mr. LEHMAN. Good afternoon, Mr. Chairman and members of the subcommittee. My name is Jonathon Lehman and I'm testifying today on behalf of VeraSun Energy. VeraSun is one of the Nation's leading producers of renewable fuels. By the end of 2008, VeraSun will have an annual production capacity of approximately 1 billion gallons at nine plants in six States. Additionally VeraSun markets E85 for use in flexible fuel vehicles directly to fuel retailers under the brand VE85.

I want to thank members of the committee for your continued efforts to promote increasing usage of renewable fuels. VeraSun appreciates the committee's leadership in developing the Senate passed Renewable Fuels Consumer Protection and Energy Efficiency Act of 2007 which calls for the expansion of the renewable fuel standard to 36 billion gallons by 2022 including a significant call for ethanol production from cellulosic sources. We believe that this is a very achievable goal but one that will require widespread E85 usage if higher blends of 15 to 20 percent are not adopted quickly.

When all the ethanol plants currently under construction are completed the United States will produce nearly 13 billion gallons per year, up from five billion gallons per year last year. Their market will need to see a path for E85 in order for cellulosic ethanol to evolve. Without additional demand the market may not support the early stages of development that is necessary to unlock the potential that cellulosic ethanol holds. Simply put, the Federal Government must now focus efforts on growing ethanol demand beyond the 10–percent blend market.

As one of the largest biofuel producers we assume a large responsibility to ensure that the market development occurs. VeraSun has pursued an aggressive strategy in cooperation with GM and Ford to increase the availability of E85. In early 2005, VeraSun launched the Nation's first brand of E85, VE85. We began the program in May 2005 with the conversion of 35 pumps at seven stations in Sioux Falls, South Dakota. At the same time we launched a marketing program to raise awareness of the benefits of FFV ownership and E85 use and elicited the support of GM to assist with the rollout of the program. As a result local E85 awareness increased, E85 sales rose and the demand for FFVs increased in the local market.

In early 2006, we replicated this effort in conjunction with GM to bring VE85 to Chicago and Minneapolis. In mid 2006 we worked with Ford to create an E85 corridor from Chicago to St. Louis and

with GM to announce the first retail availability of E85 in Pittsburgh at the Major League All Star baseball game. Just last month we announced with GM the first public E85 refueling station in the District of Columbia. All totaled VeraSun's branded E85 is available at more than 90 retail locations across eight states and in DC and we have more on the way. We plan to continue to work to expand the number of fueling stations from coast to coast.

From this experience we have gained significant insight on what is necessary to develop E85 in the United States. In order to see a robust E85 market, VeraSun believes the Federal Government must improve E85 economics in the creation of an E85 blender's credit, create an auto incentive for the production of advanced FFVs and address terminal infrastructure issues.

As VeraSun works to expand a number of fueling stations offering VE85, one of the most significant issues we face is blender economics. Allow me to explain. FFVs are currently not designed to take advantage of E85's high octane. As a result FFV owners see fewer miles per gallon running on E85 than on conventional gasoline. This direct impact on—with consumers requires that E85 be sold at a discount to gasoline for it to be competitive. This has led to fewer gallons of E85 being produced. For fuel retail owners to install E85 infrastructure they must have confidence that E85 will be priced appropriately and that there will be sufficient consumer demand.

To improve E85 economics and spur rapid expansion of E85 pumps. Congress should create a blenders credit for ethanol blended into E85 within the existing VEETC system. This credit would compensate for the discount resulting from the loss in the miles per gallon. Establishing this incentive will lead to additional E85 production. It will help ensure that E85 is priced properly at the pump for consumers. As well as make fuel retailers decisions to offer E85 much easier.

In addition to increasing the supply of E85 we must also increase the number of FFVs on the road. Today, less than 3 percent of vehicles on the road are E85 compatible. Without a significant ramp up in the production E85 will remain relatively small.

To this point we very much appreciate GM and Ford Daimler Chrysler's increasing in production to 50 percent by 2012. But this commitment by the automakers is conditional on having sufficient E85 refueling infrastructure to meet this demand. Therefore it is paramount that we act now to rapidly build our E85 refueling capabilities.

We also believe the automakers must work to approve FFV technologies to better take advantage of E85's high octane. To spur the production of more fuel efficient FFVs, Congress should provide incentives for automakers that produce FFVs with E85 fuel economy comparable to conventional vehicles. Additionally our experience over the last 2 years with our VE85 initiative indicates that more must be done to help retailers offer E85.

Beyond addressing E85 blending economics there are several achievable hurdles that must be addressed including retrofitting terminal infrastructure, UL pump certification and ASTM fuel specifications for E85. Clearly the ethanol industry is a success story. Given all this it is critical that we take the steps necessary

to create nationwide demand for E85. E85 infrastructure is the lynch pin to this effort. Thank you.

[The prepared statement of Mr. Lehman follows:]

PREPARED STATEMENT OF JONATHON LEHMAN, REPRESENTATIVE, VERASUN ENERGY

Good afternoon, Mr. Chairman and Members of the Subcommittee. My name is Jonathon Lehman, and I am testifying today on behalf of VeraSun Energy.

VeraSun Energy is one of the nation's leading producers of renewable fuels. The company has three operating ethanol production facilities located in Aurora, SD, Fort Dodge, IA, and Charles City, IA. Two facilities are currently under construction in Hartley, IA, and Welcome, MN, and an additional plant is under development in Reynolds, IN. VeraSun is in the process of acquiring another three biorefineries currently under construction in Albion, NE, Bloomingburg, OH and Linden, IN. Upon completion of the new facilities and those being acquired, VeraSun will have an annual production capacity of approximately one billion gallons by the end of 2008. The Company also has plans to extract oil from dried distillers grains, a co-product of the ethanol process, for use in biodiesel production.

Additionally, the Company markets E85, a blend of 85 percent ethanol and 15 percent gasoline for use in Flexible Fuel Vehicles (FFVs), directly to fuel retailers under the brand VE85(TM). VeraSun's branded E85 is now available at more than 90 retail locations including the first E85 fueling location in the District of Columbia.

DEMAND FROM E85 NEEDED TO FOSTER DRIVE TO CELLULOSIC ETHANOL

I want to thank members of the Committee for your continued efforts to promote increasing usage of renewable fuels. VeraSun appreciates the committee's leadership in developing the Senate passed Renewable Fuels, Consumer Protection, and Energy Efficiency Act of 2007, which calls for the expansion of the Renewable Fuels Standard to 36 billion gallons by 2022 including a significant call for ethanol production from cellulosic sources.

We believe that this is a very achievable goal, but one that will require widespread adoption of E85 usage. Because of the successful growth of the ethanol industry, some reports indicate that we will meet the demand of the current 10 percent blend market with corn-based ethanol within the next three to four years. When all of the ethanol plants currently under construction are completed, the U.S. will produce nearly 13 billion gallons per year, up from five billion gallons per year last year.

We believe the market must see a path toward E85 in order for cellulous ethanol to evolve. Without E85 demand, the market may not support the early stage development that is necessary to unlock the potential that cellulosic ethanol holds.

Simply put, the Federal Government must now focus efforts on growing ethanol demand beyond the 10% blend market. A strong commitment to E85 will ensure a market for cellulosic ethanol production in the United States.

BUILDING AN E85 MARKETPLACE

As one of the largest biofuels producers, we assume a large responsibility to insure that market development occurs. VeraSun has pursued an aggressive strategy in cooperation with GM and Ford to increase the availability of E85. Today only 1,251 of the nearly 180,000 (or 6/10 of 1%) retail gasoline stations in the United States offer E85. We must do better.

In early 2005, VeraSun launched the nation's first branded E85, VeraSun E85 or VE85 for short. We began the program in May 2005 with the conversion of 35 pumps at seven stations in Sioux Falls, South Dakota. At the same time, we launched a marketing program to raise awareness to the benefits of flexible fuel vehicle (FFV) ownership and E85 use, and enlisted the support of General Motors to assist with the rollout of the program. As a result of the program, local E85 awareness increased, E85 fuel sales rose, and the demand for flexible fuel vehicles increased in the local market.

In early 2006, we replicated this effort in conjunction with GM to bring VE85 to Chicago and Minneapolis. In June 2006, we worked with Ford to create an E85 corridor from Chicago to St. Louis. In July 2006, we announced with GM at the Major League Baseball All-star Game the first retail availability of VE85TM in Pittsburgh. Just last month, we announced with GM the first public E85 refueling station in the District of Columbia. All told, VeraSun's branded E85 is available at more than 90 retail locations across eight states and the District of Columbia and we have

more on the way. We plan to continue to work to expand the number of fueling stations offering VE85 from coast to coast.

From this experience, we have gained significant insight on what is necessary to develop E85 in the United States. In order to see a robust E85 market in the United States, VeraSun believes the Federal Government must address the following items:

1. Improve E85 economics through the creation of an E85 Blenders Credit;
2. Create an auto incentive for the production of advanced FFVs; and
3. Address terminal infrastructure issues.

As VeraSun works to expand the number of fueling stations offering VE85, one of the most significant issues we face is blender economics. Allow me to explain; FFV's are currently not designed to take advantage of E85's high octane. As a result, FFV owners receive fewer miles per gallon running on E85 than on conventional gasoline. This direct impact on consumers requires that E85 be sold at a discount to gasoline for it to be competitive in the marketplace. This has led to fewer gallons of E85 being produced.

For fuel retail owners to install E85 infrastructure, they must have confidence that E85 will be priced appropriately and that there will be sufficient consumer demand.

To improve E85 economics and spur rapid expansion of E85 pumps, Congress should create a blenders credit for ethanol blended into E85 within the existing VEETC system. This credit would compensate for the discount resulting from the loss in miles per gallon efficiency. Establishing this incentive will lead to additional E85 production and will help ensure that E85 is priced properly at the pump for consumers. This will help make a fuel retailers decision to offer E85 much easier.

In addition to increasing the supply of E85, we must also increase the number of FFVs on the road. Today, less than three percent of the vehicles on the road are E85 compatible. Without a significant ramp up in the production of FFVs, E85 use will remain relatively small. To this point, we very much appreciate GM, Ford, and DaimlerChrysler's commitment to increasing production of E85 and biodiesel capable vehicles to 50% by 2012. This is a significant step forward. But this commitment by the automakers is conditional on having sufficient E85 refueling infrastructure to meet this demand. Therefore, it is paramount that we act now to rapidly build out E85 refueling capabilities.

We also believe the automakers must work to improve FFV technologies to better take advantage of E85's high octane. To spur the production of more fuel-efficient FFVs, Congress should provide incentives for automakers that produce FFVs with E85 fuel economy comparable to conventional vehicles. Additionally, Congress should provide a consumer tax credit for the purchase of these more fuel efficient FFVs.

Further, our experience over the last two years with our VE85 initiative indicates that more must be done to help retailers offer E85. Beyond addressing E85 blending economics, there are several achievable hurdles that must be addressed including retrofitting terminal infrastructure to better handle E85, UL pump certification, and ASTM fuel specifications for E85.

Currently, many terminals are not set up to quickly dispense E85. These terminals were designed to quickly fill trucks with E10, not E85. As a result, what is a twenty-minute fill time for E10 turns in to a two-hour fill time for E85 because of the plumbing configuration of the terminal. Terminals won't allow this as it backs up their entire operation, which is already busy. We are currently trucking in E85 from Ohio to our Washington D.C. station because the Manassas terminal needs to be retrofitted. In many cases, this can be done for a cost of fifty to one hundred thousand dollars. The federal government should provide these terminal owners with assistance in converting terminals to offer E85. This could be achieved by making terminal owners eligible for the E85 infrastructure tax incentive.

Additionally, it is critical that UL certify both E85 conversion kits and new pumps quickly. The fire marshals we have dealt with support E85, but they must make sure of the safety of the equipment. The lack of proper UL certification required us to spend 30 days working with a very supportive D.C. Fire Marshal to get approval for the first pump in the District of Columbia. UL certification will significantly streamline that process.

Finally, if we want to have an immediate impact on air quality and open up major markets for renewable fuels we need to have ASTM create a separate E85 fuel specification for conventional markets; which have conventional unleaded available for blending E85; and reformulated gasoline markets, which have RBOB available for blending with ethanol to make E85. Without it our nation's cities that endure the poorest air quality will have a hard time developing a meaningful E85 footprint.

CONCLUSION

Clearly, the ethanol industry is a success story. We're exceeding the levels of the current Renewable Fuels Standard, we're shipping ethanol to major U.S. markets in Unit Trains, and we're ready to help our nation start to turn off the valve of foreign oil. Further, cellulosic ethanol holds great promise to expand ethanol production from coast to coast. Given all of this, it is critical that we take the steps necessary to create nationwide demand for E85. E85 infrastructure is the linchpin to this effort.

For the first time in the last 100 years we are ready to decrease our dependence on foreign oil, reduce greenhouse gases, and create economic development in America. We look forward to working with you to chart the course for years to come. Thank you.

Senator DORGAN. Mr. Lehman, thank you very much. Finally, I shouldn't say finally, we have two additional witnesses. Ms. Deborah Morrissett will testify next.She is Vice President of Regulatory Affairs of Product Development, Chrysler Technology Center in Auburn Hills, Michigan.

Ms. Morrissett, thank you very much for being with us. You may proceed.

STATEMENT OF DEBORAH L. MORRISSETT, VICE PRESIDENT, REGULATORY AFFAIRS, DAIMLERCHRYSLER CORPORATION, AUBURN HILLS, MI

Ms. MORRISSETT. Mr. Chairman and members of the subcommittee thank you for inviting me to testify before you today on the subject of alternative fuels.

Automakers are committed to developing new, advanced technology vehicles capable of efficiently using energy and running on alternative fuels. Doing so will help America reduce petroleum consumption, greenhouse gases and our dependence on foreign oil. We believe that the extraordinary task now before the transportation sector is to reduce the use of petroleum based fuels. To do that requires maximizing the energy efficiency of all vehicles, substantial production of alternative fuel vehicles and a market that has sufficient amount of alternative fuels and a demand for that fuel.

To make this happen will require unprecedented efforts from all stakeholders. Broad based policies addressing the production, distribution and consumer use of alternatives to petroleum need to be explored. To be successful the goal of reducing petroleum consumption must be viewed as a shared responsibility. We're committed to maximizing the efficient use of energy in our vehicles.

Efforts such as the development of new power trains and reducing vehicle weight, aerodynamic drag and various loads and losses have led to an average improvement of vehicle efficiency of one and a half percent year over year during the past 30 years and must continue at an accelerated rate. In the past consumers have demanded that we allocate those gains to inefficiency to improve vehicle utility, performance and safety. The market has changed and consumers are now calling for the efficiency gains to be applied to improving fuel economy.

As we discuss the challenge of reducing petroleum use in the transportation with the Congress and the Administration. The target of a 20 percent reduction in petroleum use is relatively common. Using government projections to fuel use in 2017, the target in petroleum reduction turns equals about 35 billion gallons per year. Chrysler, General Motors and Ford have promised that 50

percent of our respective vehicle fleets will be capable of using alternative fuels such as ethanol and biodiesel by 2012. This is critical. Our calculations show that the vehicles resulting from our commitment would use all and more of the alternative fuel if it were available and affordable.

The evidence that automakers are doing the part is already on the road. There are currently more than five million flexible fuel vehicles on U.S. roads. Daimler Chrysler has produced more than a million and a half vehicles capable of running on E85, more than 10 percent of our total production over the last 9 years.

While getting to the goal of significant reductions in petroleum consumptions is inherently complex. The message is more direct. If all gasoline was blended with E10 all diesel fuel replaced with a B20 blend and all flexible fuel vehicles capable of running on E85 did so, petroleum use would drop by about 35 billion gallons per year. While achieving all of these goals may not be easy, they illustrate the importance of alternative fuels and the resulting reduction in petroleum use.

But the question remains where's the alternative fuel? We believe that consumers want to use and will embrace alternative fuels if the impediments to their use is eliminated. Today those impediments are primarily price and availability. Simply stated, the price at the pump for renewable fuels must be less than conventional gasoline or diesel on an energy equivalent basis or consumers will not buy it.

Consider the internet, cell phones and iPods. These products rapidly overcame cost and distribution issues because of unprecedented consumer demand for products that do more and cost less. All stakeholders must commit to accomplishing this task. In the short term we all need to rely on incentives to prime the pump for alternative fuel producers and distributors. In the long term as technology, such as cellulosic ethanol and biomass to liquid become viable, we believe that the market will resolve how to make alternative fuel prices competitive on an energy equivalent basis. If alternative fuels are priced competitively or better, the retail distribution system will rush to answer consumer demand.

In conclusion, auto manufacturers commit to the continued development and commercialization of vehicle technologies that maximize the efficient use of energy and give consumers the option of using alternative fuels. Fuel providers and government need to focus on alternative fuel technology development, availability and price at the pump. Short term incentives coupled with free market forces will result in a long term success of alternative fuels and the successful achievement of the government's and the Nation's energy goals. Thank you.

[The prepared statement of Ms. Morrissett follows:]

PREPARED STATEMENT OF DEBORAH L. MORRISSETT, VICE PRESIDENT, REGULATORY AFFAIRS, DAIMLERCHRYSLER CORPORATION, AUBURN HILLS, MI

Mr. Chairman and members of the subcommittee, thank you for inviting me to testify before you today on the subject of alternative fuels. Automakers are committed to developing new, advanced technology vehicles capable of efficiently using energy and running on alternative fuels. Doing so will help America reduce petroleum consumption, greenhouse gases and our dependence on foreign oil.

We believe that the extraordinary task now before the transportation sector is to reduce the use of petroleum-based fuels. To do that requires maximizing the energy

efficiency of vehicles, substantial production of alternative fuel vehicles and a market that has a sufficient amount of alternative fuels.

To make this happen will require unprecedented efforts from all stakeholders. Broad based policies addressing the production, distribution and consumer use of alternatives to petroleum need to be explored. To be successful, the goal of reducing petroleum consumption must be viewed as a shared responsibility.

We are committed to maximizing the efficient use of energy in our vehicles. Efforts such as the development of new powertrains and reducing vehicle weight, aerodynamic drag and various loads and losses, have led to an average improvement in vehicle fuel efficiency of 1-1.5 percent year-over-year during the past 30 years.

In the past, consumers have demanded that we allocate these gains in efficiency to improve vehicle performance and safety. The market has changed, and customers are now calling for the efficiency gains to be applied to improving fuel economy. Work currently under way in the Senate, House and Administration will result in a program that will ensure our technical performance. We estimate that this work will result in offsetting more than 5 billion gallons of petroleum per year within about 10 years.

As we discuss the challenge of reducing petroleum use in transportation with the Congress and the Administration, the target of a 20-30 percent reduction in petroleum use is relatively common. Using government projections of fuel use by 2017, the target in petroleum terms calculates to about 35-45 billion gallons. Chrysler, General Motors and Ford have promised that 50 percent of our respective vehicle fleets will be capable of using alternative fuels such as ethanol and biodiesel by 2012. This is critical. Our calculations show that the vehicles resulting from our commitment would use all and more of that alternative fuel, if it were available and affordable.

The evidence that automakers are doing their part is already on the road. There are currently more than 5 million flex fuel vehicles on U.S. roads. DaimlerChrysler has produced more than 1.5 million vehicles capable of running on E85—more than 10 percent of our total production over the past nine years.

While getting to the goal of significant reductions in petroleum consumption is inherently complex, the message is more direct: If all gasoline was blended with E10 (10 percent ethanol), all diesel fuel replaced with a B20 blend (20 percent biodiesel) and all flex-fuel vehicles capable of using E85 did so, petroleum use would drop by about 30-35 billion gallons. While achieving all of these goals may not be easy, they illustrate the importance of alternative fuels, and the resulting reductions in petroleum use in the transportation sector.

But the question remains . . . where is the alternative fuel? We believe that customers want to use and will embrace alternative fuels if the impediments to their use are eliminated. Today, those impediments are primarily price and availability. Simply stated, the price at the pump for renewable fuels must be less than conventional gasoline or diesel, on an energy equivalent basis, or consumers will not buy it.

Consider the internet, cell phones and iPods. These products rapidly overcame cost and distribution issues because of unprecedented consumer demand for products that do more and cost less.

All stakeholders must commit to accomplishing this task. In the short term, we will need to rely on incentives to "prime the pump" for alternative fuel producers and distributors. In the long term, as technologies such as cellulosic ethanol and biomass-to-liquid become viable, we believe that the market will resolve how to make alternative fuels price competitive on an energy equivalent basis. If alternative fuels are priced competitively or better, the retail distribution system will rush to answer consumer demand.

Automakers, specifically Chrysler, will continue to do our part to maximize the energy efficiency of our products and produce large volumes of vehicles capable of using alternative fuels. Congress could assist by assuring that adequate research is properly funded; which would result in properly priced fuel at the pump.

In conclusion, automobile manufacturers commit to the continued development and commercialization of vehicle technologies that maximize the efficient use of energy and give consumers the option of using alternative fuels. All of us need to focus on alternative fuel technology development, availability and price at the pump. Short term incentives, coupled with free market forces, will result in the long-term success of alternative fuels and the successful achievement of the nation's energy goals.

Thank you.

Senator DORGAN. Ms. Morrissett, thank you very much. Finally we will hear from Mr. Phillip Lampert, who is the Executive Direc-

tor of the National Ethanol Vehicle Coalition, Jefferson City, Missouri.

Mr. Lampert, thank you for being here. You may proceed.

STATEMENT OF PHILLIP J. LAMPERT, EXECUTIVE DIRECTOR, NATIONAL ETHANOL VEHICLE COALITION, JEFFERSON CITY, MO

Mr. LAMPERT. Thank you very much, Mr. Chairman. My name is Phil Lampert. Distinguished members of the committee we're pleased to be here today on behalf of the NEVC. We'd like to thank you for the opportunity.

I have three of my members here today: Daimler Chrysler, Governors' Ethanol Coalition and VeraSun. Including in our membership is General Motors, Ford and the Nissan Corporation. We're a group that is composed of automakers, farmer cooperatives, others. Mr. Chairman, with all due respect, I'd like to add that we've been doing E85 long before E85 was cool. We've been doing E85 since 1993 and we've done a lot of it up in Minnesota. We've done a lot in the front range of Colorado. We've done a lot in Illinois in the Chicago area. Many comments Senator Klobuchar, my dear friend commented on in the leadership in Minnesota here today.

It's no accident that Minnesota is a leader in E85. That has been planned for a long time. It's no accident there's over 150 stations in Illinois or close to 40 now in the front range of Colorado. We set those, our goals, our members, with Daimler Chrysler, with the Governors' Ethanol Coalition, with the Department of Energy's input to learn from those models. To learn from the failures and the successes and we think we have. I would like just to respond to a couple questions that have been made here today.

Our organization is under no—I've been characterized as being delusional many times, but we're under no illusion that every vehicle is ever going to run on E85. But if every vehicle could be manufactured as a flexible vehicle, than we could run on the E12 or the E20 or the E40. We might use E10 in New Jersey or we might use zero in Alaska because of cold weather or we might use E30 in North Dakota.

I think that we're past, Mr. Chairman, the chicken and the egg routine. I believe that we're into the ham and egg routine. Where the chicken is involved but the pig has commitment. I think what we need now from this Congress and others and from the Department of Energy is commitment to take the project to the next step.

We believe that the next step includes the following five items:

First, Federal support should continue for the next several years in the form of small grants to continue to assist with infrastructure. I don't believe and our organization, sir, doesn't believe that it takes 75,000 to 100,000 dollars to open an E85 fueling station. I've opened a number of them in Bismarck and Fargo for less than 5,000 dollars. We can modify that pump. We can do the clean up on the underground storage tank. We can provide the technical support and that we can have E85 in there in a matter of 2 weeks.

Second, included with that is our need to have a basic program of education of the industry, technical assistance, marketing support and supply coordination. Second, we want to indicate our complete support for what my colleague, Mr. Lehman indicated that

the Congress should consider adoption of new short term Federal income tax credits that would reduce the price of E85 to ensure the consumers are able to purchase fuel at a gasoline gallon equivalent basis. That is going to be the key.

Third, the Congress should consider expanding and extending the existing Federal income tax credit that provides 30 percent, up to 30,000 dollars to support the establishment of alternative fuel infrastructure.

Fourth, we agree 100 percent that we should end arbitrary restrictions that some petroleum companies enforce which prohibit a franchise operator from installing and operating renewable fuel dispensing system. We assisted Governor Pataki and his administration with writing that law that is actually based on the State of Iowa, who is the only other State in the country that has such legislation.

Last then we believe that the Congress should continue to provide incentives to all of the automakers to continue to build flexible fuel vehicles. So with that, Mr. Chairman, again, I'd like to thank you for your leadership and the committee for the hearing and look forward to answering any questions.

[The prepared statement of Mr. Lampert follows:]

PREPARED STATEMENT OF PHILLIP J. LAMPERT, EXECUTIVE DIRECTOR, NATIONAL ETHANOL VEHICLE COALITION, JEFFERSON CITY, MO

Good morning, Chairman Dorgan and distinguished members of the Energy Subcommittee, my name is Phillip Lampert and I serve as the Executive Director of the National Ethanol Vehicle Coalition (NEVC). On behalf of the NEVC, I would like to thank you for the opportunity to appear before you this afternoon.

The NEVC is the nation's primary advocate of the use of 85% ethanol as a form of alternative transportation fuel. Our membership includes four of the globes top five automakers; state and national corn grower associations; ethanol producers; equipment manufacturers and suppliers; ethanol marketers; the 37 states that comprise the Governors' Ethanol Coalition; farmer cooperatives; chemical and seed companies; petroleum marketers; and individuals. The objective of our organization from its inception in 1995 has been to promote the use of high level blends of ethanol in flexible fuel vehicles (FFVs). The following testimony deals solely with the infrastructure issue as it relates to the sale of E85 at the retail level and does not address transportation infrastructure issues such as rail terminals, pipeline issues, etc.

All motor vehicles sold in the nation today have been designed, engineered and produced to allow the use of up to 10% ethanol. However, the use of blends of ethanol exceeding 10% are now limited to FFVs. FFVs can operate on any amount of ethanol up to 85%. These vehicles are designed, engineered, and produced by the original equipment manufacturers and made available to consumers at no extra cost. As the Congress considers an expansion of the renewable fuels standard, it is important to note that with today's conventional vehicles, the maximum amount of ethanol that can legally be consumed approaches 14 billion gallons nationally in a 10% blend. While the potential use of E12 and E15 in existing vehicles is being debated, we know that a flexible fuel vehicle can operate on E15, E30, or E85, absent adjustments or modifications. Thus, the automotive technology exists to use these higher level blends of ethanol and that is in the form of FFVs.

In 1995, the nation had less than 5,000 such flexible fuel vehicles on its highways. The NEVC anticipates that by the end of 2007, more than 6 million FFVs will be operating in the United States. On March 27, 2007, the CEOs of General Motors, DaimlerChrylser, and Ford jointly appeared with the President and Transportation Secretary Peters and publicly stated their company's commitment to, (a) double production of FFVs from 2007 to 2010, and (b) produce 50% of their entire fleet as FFVs by model year 2012. Such production would exceed 4 million vehicles annually. The caveat to that pledge was that "adequate E85 fueling infrastructure be available to service the potential demand of those vehicles."

At the present time, the NEVC data base lists a total of 1,251 E85 fueling sites in the United States. This compares with approximately 168,000 gasoline fueling

stations serving the 241,000,000 registered vehicles in the United States. Thus, there is one public gasoline station for each 1,435 vehicles. In comparison, currently there is one E85 fueling station for each 4,820 flexible fuel vehicles. While this number is striking, it is further unbalanced when you consider the following statistics:

- Alabama has 106,000 FFVs and one E85 fueling site.
- California, the largest user of motor fuels in the nation, has 328,000 FFVs and only one E85 fueling site. Statistics of other states and the numbers of FFVs and E85 fueling stations follow:

State	# of FFVs	# of E85 Stations	# of FFVS/Stations
New Jersey	129,000	0	
Oregon	50,500	6	8,400
North Dakota	16,190	23	740
South Dakota	21,000	62	
Louisiana	112,000	0	
Washington	71,400	6	11,900
Vermont	9,100	0	
Montana	18,000	1	18,000
New Mexico	37,000	5	7,400
Alaska	9,900	0	
Idaho	18,073	4	4,500
North Carolina	146,000	14	10,400
South Carolina	77,000	42	1,800
Florida	359,000	1	359,000
Kentucky	61,000	3	20,000
Minnesota	124,000	320	390
Tennessee	108,000	9	12,000

Only 18 months ago, there were less than 500 E85 stations nationally. During 2006, the NEVC, in partnership with a broad range of groups, added 569 new sites. While this growth has been interrupted to an extent by our lack of financial resources and the rescission by Underwriters Laboratory of previously approved equipment standards, we do expect to have added 1,000 new E85 sites from January of 2006 to January of 2008. These small successes have been a collaborative effort of the NEVC and our partners. Particularly, these efforts have centered on programs coordinated with state commodity organizations such as the Minnesota, Illinois, Missouri, Kansas, and other corn grower groups. Several Clean Cities Coalitions have also been active including those in North and South Carolina, Indiana, and Ohio. Ford and General Motors have each also been active in expanding E85 fueling infrastructure.

That said, the 1,251 E85 fueling stations operating today in 41 states across the nation pale in comparison to the number of sites needed to satisfy the demands of the motoring public and the nation's automakers.

In order to advance the establishment of additional public E85 fueling locations, the NEVC has adopted the following public policy statements:

1. Federal financial support should continue for the next several years in the form of small grants to assist with infrastructure development. As important as such a basic grant program may be, it is our belief that the need to educate the industry, provide technical assistance, marketing support, supply coordination, and promotional support to vendors is even more important. Federal funds should be made available to non-profit entities with demonstrated experience in supporting new E85 fueling location development in order to provide vendors the necessary E85 technical, marketing, and promotional support.

An example of such program is S. 1491 that would provide $20 million to farmer-owned ethanol producers to install E85 fueling stations and $5 million for an E85 education program. This bill has been introduced by Senator Klobuchar as part of the Energy Title of the Farm Bill. Chairman Dorgan is a co-sponsor.

While clearly appropriate and necessary, it is simply not enough to provide outright grants to vendors to assist with offsetting the costs of new E85 equipment. More than 90% of the 1,251 existing E85 fueling stations are the result of conversions of exiting gasoline equipment. Such conversions can be undertaken for less than $5,000. Of significant importance to sites that wish to convert, is the provision of technical assistance to ensure that proper fuel handling and dispensing is practiced. Such technical support is also a key element in maintaining an E85 site once it is opened. The establishment of a "retail technical and marketing assistance" effort as a companion to any equipment grant program would be key to ensuring that

new vendors are able to market and offer E85 at a gasoline equivalent basis to regular unleaded, that equipment standards are being maintained, that promotional materials are available, and that a central clearinghouse is available to respond to questions from consumers. The addition of such a sub-program to the basic DOE grant effort is critical and we encourage the Committee to consider adoption of such an effort.

2. The Congress should consider expanding and extending the existing federal income tax credit that provides 30% up to $30,000 to support the establishment of alternative fueling systems. The NEVC suggests that the credit should be extended to the end of 2012 and increased to 50% or $50,000.

This federal income tax credit was established as part of the 2005 Energy Bill and has been very helpful in offsetting the costs of installation of E85 fueling systems. As a new form of transportation fuel, many entrepreneurs are hesitant to make the needed investments in infrastructure while they wait on the automakers to produce FFVs. Increasing the incentive to 50% up to $50,000 would serve to assuage much of this reluctance and assist in breaking the so called "chicken and egg" syndrome.

3. The Congress should consider the adoption of new short-term federal income tax credits that would reduce the price of 85% ethanol to ensure that consumers are able to purchase the fuel at a cost 20% less than that of regular unleaded gasoline.

The chemistry of ethanol is that as a fuel it contains less latent heat content than motor gasoline. On an arithmetic basis, E85 contains 27% less BTUs than unleaded. Mileage loss in FFVs operating on E85 ranges from 5% to 25%. Thus, E85 must be priced at least 20% less than that of regular unleaded. Consumers will not tolerate a loss in mileage absent an equivalent reduction in fuel price. E85 must be priced on a gasoline gallon equivalent basis per mile driven. Unfortunately, in many of our 1,251 existing stations, this pricing standard is not being adopted and these locations are moving very little fuel. Clearly our mutual goal is to advance the use of renewable fuels and not just build infrastructure. If the fuel is not properly priced, no fuel will be consumed.

4. End the arbitrary restrictions that some petroleum companies enforce which prohibit a franchise operator from installing and operating a renewable fuel dispensing system.

Over the past several weeks, testimony has been provided by representatives of the petroleum industry to the Senate Judiciary Committee and in response to direct questions from Senator Grassley, Senator Obama and others, stating that there are no restrictions on the sale of alternative fuels by so called "branded" operations. While not wishing to debate that matter, it is the recommendation of the NEVC that the Congress consider adopting language that will serve to clarify the previous statements made by those representatives and address this issue. An owner/operator of a fueling station should have the right to sell any form of transportation fuel on his or her property without recrimination or objection from the franchise management. Unfortunately, in our experience, some owners of fueling stations have been denied the option to install E85 fueling equipment.

The NEVC urges the Congress to consider adoption of language that would clarify the right of fueling station proprietors to store and dispense any form of transportation fuel own property they own regardless of the nature of the "branded product".

5. The Congress should continue to provide incentives to the nation's automakers to encourage the production of flexible fuel vehicles.

The impetus for today's production of alternative fuel vehicle was provided by the 2nd Session of the 100th Congress via passage of the Alternative Motor Fuels Act (AMFA) of 1988, extended by the 2005 Energy Bill. The "CAFE Credit" incentives have encouraged the production of motor vehicles capable of operating on any form of alternative fuel. These credits allow the automakers to offset the additional equipment, research, certification, and warranty costs associated with the production of an FFV. This incentive has been tremendously valuable and successful in that prior to 1988 there were zero alternative fuel vehicles on the nation's highways. As a result of AMFA, today, there are more than 6 million E85 vehicles and a number of electric, CNG, and LPG cars and trucks across the nation. The NEVC recommends that the Congress consider other incentive based mechanisms that would continue production of FFVs by the domestic automakers and broaden the program so that foreign automakers find financial benefit in the manufacture of FFVs.

MANDATORY INFRASTRUCTURE PROGRAMS

The development and promulgation of incentives to further advance alternative fuel infrastructure may sound burdensome, time consuming, and costly in terms of federal investments. An option that might immediately address the lack of E85 and

other alternative fueling stations would be to simply "mandate" that the major oil companies install and sell such fuel by a certain date. For example, on July 26, 2007, ExxonMobil reported quarterly profits exceeding $10 billion. It would seem reasonable to assume that ExxonMobil could easily absorb the costs of installing 10,000 new E85 fueling stations across the nation.

It is the position of the NEVC that there is little benefit in the promulgation of federal law which mandates the installation of alternative fueling infrastructure. In our 14 years of experience in advocating the introduction of renewable fuels, the key to successfully selling E85 and any other form of alternative fuel is proper pricing, marketing, and the provision of educational resources. While consideration of the establishment of federal mandates requiring the establishment of E85 fueling stations is admirable, we continue to believe that the marketplace is the mechanism most appropriate to ensure such E85 fueling sites are installed during this critical development stage.

It is our observation that mandating E85 fueling facilities may result in placement of the sites in poor locations, arbitrarily high prices for E85, and lack of customer outreach and marketing. While unlikely, it would be possible that opponents of alternative fuels could use high pricing of fuel at sites they were forced to establish to confirm a lack of demand and establish an "I told you so" prophecy of failure of the site. See the following photograph (The following photographs illustrate the potential impact of the mandate of E85 infrastructure in the market).*

The photographs above were each taken on September 14, 2006. The station in the photograph on the right is selling E85 for 20% more than the price of unleaded. The station in the photo on the left is selling E85 for 20% less than the price of unleaded. While there is a 14 cent difference in the base price of unleaded in these two photos, there is a difference of $1.20 in the price of E85. Both of these sites are Midwest locations and situated in states with existing ethanol production facilities.

The station on the right, selling E85 for 20% more than unleaded, averaged less than 600 gallons per month of E85 sold. Du to small volume sales, the station permanently terminated all E85 sales shortly after this photo was taken.

The station on the left in the photo above, selling E85 for 20% less than unleaded, averages more than 20,000 gallons per month of E85 sold. This operator has expanded to more than 45 stations selling E85 at the 20% less than unleaded price margin and is extremely pleased with sales and margins. It is also important to note that the total federal investment in these profitable facilities is less than $2,500 each.

It is also important to note that the 20,000 gallons per month of E85 dispensed from the two nozzles at the Break Time station represents the equivalent of 170,000 gallons of E10. Very few fueling stations are able to claim that type of volume.

Without question, mandating the establishment of E85 fueling stations would be simple. Mandating the sale of fuel at certain price points in order to offset the lower latent energy content would be extremely difficult.

Another point that should be considered in a discussion regarding mandatory E85 fueling systems is that of the 168,000 fueling locations across the nation, that less than 11,000 of these sites or approximately 6.5% of the total fueling stations, are actually owned by the "branded" integrated petroleum companies. (Source: National Petroleum News, Market Facts 2006). While some 56% of all stations are "branded" in the sense that they may handle ExxonMobil, BP, Shell, Valero, Sinclair, and other products; these companies only own a small percentage of the sites. Mandates would simply place another layer of financial burden on the small businessmen and women that own the 93.5% of all fueling stations.

In the future, vendors choosing not to sell E85 will be facing the loss of a significant new revenue stream and potential profit center. As in the sale of other commodities, vendors who do not rapidly respond to market demands are those that rapidly exit the marketplace. We believe this will also be true in the sale of alternative fuel. The NEVC supports the market in this endeavor and continues to resist embracing such mandatory programs. It may be necessary to re-evaluate this position in the future, but presently we oppose such mandates.

In summary, in order to advance the establishment of renewable fuel infrastructure for the purpose of dispensing E85 as a form of alternative transportation fuel, we believe the following actions are needed:

- Continue the provision of federal financial incentives to assist with offsetting the cost of new or converted infrastructure. Such financial support may be pro-

* Graphics retained in committee files.

vided in the form of grants or as an increase in the existing federal income tax credit.
- The Congress and the Department of Energy should place a much stronger emphasis on the provision of technical support, marketing support, and promotional assistance to new and existing E85 vendors.
- Maintain and enhance incentives that assist automakers in offsetting the costs of FFV equipment so that they may proceed with the massive introduction of FFVs into the nation's auto and light duty truck markets.
- Elimination of any and all franchise restrictions on owners of fueling sites to allow them the choice to dispense any form of transportation fuel, and finally,
- A short-term increase in the existing incentive that is available for ethanol to offset the lower BTU value of the product and ensure that it is available to consumers on a gasoline gallon equivalent basis.

Mr. Chairman and Members of the Committee, we appreciate the work that you are doing on behalf of the American people to address our nation's growing dependence on imported petroleum. The NEVC thanks you for the opportunity to provide these comments and we are available to respond to questions at your convenience.

ATTACHMENT.—NATIONAL ETHANOL VEHICLE COALITION

BACKGROUND

The National Ethanol Vehicle Coalition is the nation's primary advocacy group promoting the use of 85% ethanol as a form of alternative transportation fuel. The NEVC supports the production of ethanol from corn based technology available today and also supports the production of ethanol from new technology using perennial crops, biomass, and waste materials.

FUNCTIONS OF THE ORGANIZATION

- Advocate the use of E85 as a form of alternative transportation.
- Educate consumers, organizations, public policy officials and the media as to benefits of the use E85.
- Serve as a technical consultant to transportation fuel providers, ethanol producers, policy makers.
- Promote the use of E85 in the political arena.
- Provide information regarding tax incentives available to reduce price of E85.
- Sometimes—provide financial assistance to build fueling systems.
- Support all forms of alternative fuels.

GOVERNANCE

Governed by a 10-20 member Board of Director's, the NEVC employees five full time staff in an office located in Jefferson City, MO. The NEVC also maintains contract staff in New York, Michigan, Illinois, Iowa, Tennessee, Montana, and Minnesota. Legislative functions are carried out by two firms engaged via retainer located in Washington, D.C.

Operational functions are overseen by the Executive Committee which is comprised of the Chairman, Vice-Chairman, Secretary-Treasurer, Immediate Past Chairman, and the Executive Director. The NEVC holds two meetings annually of the Board of Director's and one general membership meeting.

MEMBERSHIP

The groups, organizations, companies, and individuals that comprise the membership of the NEVC represent an exceptionally broad range of interests and objectives from across the nation. Some of the members include:

- 37 Governors comprising the Governors' Ethanol Coalition
- General Motors Corporation
- Ford Motor Company
- DaimlerChrysler
- Nissan North America
- 18 Clean Cities Coalition Across the Nation
- National Agricultural Organizations
  —National Corn Growers Association
  —National Sorghum Producers Association
- State Agricultural Organizations
  —Colorado Corn Growers Association
  —Corn Marketing Program of Michigan

—Kansas Corn Commission
—Kentucky Corn Growers Association
—Missouri Corn Growers Association
—Minnesota Corn Growers Association
—New York Corn Growers Association
—North Dakota Corn Growers Association
—Ohio Corn Growers Association
—Texas Corn Producers Board

- Petroleum Marketers
- Ethanol Producers/Marketers
- Consumer Groups
- Individuals

SIGNIFICANT ACCOMPLISHMENTS

- Have been engaged with the establishment of every single E85 fueling station in the United States.
  —Have provided grants to most and a standard "imaging package" to all. This imaging package contains consistent information to allow a motorist identify an E85 station in California or Florida.
- Printed and distributed more than 250,000 copies of the E85 Purchasing Guide, fielded more than 4,000 average calls per month to our toll free line, maintained a website that average more than 30 million hits per month, and opened more than 800 E85 fueling stations in 38 states.
- Have received appropriations from the U.S. Congress to support the establishment of public and private E85 fueling systems.
- Have established the "Handbook for Handling, Storing, and Dispensing E85" to maintain high fuel quality.
- Have been successful in establishing a federal income tax credit to assist with offsetting 30% of the total cost, up to $30,000, of an E85 fueling facility.
- Established relations with the Steel Tank Institute, Petroleum Equipment Institute, Petroleum Marketers Association of America, National Association of Convenience Stores, and other industry groups and organizations in an effort to promote E85 use.
- Have been successful in extending the CAFE credits that were originally established in 1988 so that automakers are provided incentives to continue to produce FFVs through model year 2014.
- Have been successful in encouraging the automakers to build FFVs in their most popular line of vehicles such as the Silverado, F150, Taurus, Town and Country minivan, Ranger, Explorer, Tahoe, Yukon, Sebring, Grand Cherokee and others.

Senator DORGAN. Mr. Lampert, thank you very much. I think a number of witnesses have talked about the chicken and the egg and which comes first. It's a fair question. I don't think we know the answer, but I think we have to do things concurrently in order to be successful.

Ms. Morrissett, I notice—I went to the internet to Chrysler's site, and it says build my own options. You have the capability quite easily actually to build your own options. But it doesn't have an option for a flex fuel vehicle. Why is that the case and is that usual?

Ms. MORRISSETT. When Chrysler decides to build a flex fuel vehicle we do it across the whole engine. So if you pick an engine, it's not as easy as I would like a flex fuel option. It's every vehicle with that particular engine. When you pick the engine, you get the alternative fuel.

A lot of folks think that it's—when we start talking about alternative fuel vehicles it's simply changing some tubes and changing a pipe, but it really—a pump, but it really is inside the engine. We have different valves and valve seats so it's not easy to simply pick an option.

Senator DORGAN. You know, obviously one of the goals here is to have more flex fuel vehicles on the streets and the roads. We want

consumers to have easy access to order a flex fuel vehicle if they wish. My hope is the industry will be aggressively moving in that direction. I know that your testimony suggests that that's what you want to do.

Mr. Drevna, you indicated in your testimony that with oil, I believe my colleague said at 70—is it 78 dollars a barrel today? That seemed high to me. Seventy-eight dollars a barrel. You indicated that decisions are being revisited in board rooms with respect to the investment in refineries because if we're going to use less gasoline in the future, you want to build—you have less refinery capacity perhaps.

But it is the case that profits are at a record high at the moment and part of the bottleneck is refining capability. I—you talked about the President's goal of 35 billion gallons by 2017, which would aspire to a 20 percent reduction in the use of gasoline which would get you to 129 billion gallons of gasoline. It seems to me that would be a laudable goal for this country if we could possibly achieve. One I fully support. One I fully sign up to have happen. I recognize that some in your industry probably would say that's not in our interest. But you heard me suggest earlier that what might be in your self interest is not in the national interest.

Do you believe it is in the national interest to reduce our reliance on foreign sources of oil?

Mr. DREVNA. Absolutely Senator. I think we're all in this game together, but, I think the rules have to be firmly established and the play book understood. What we're looking at is, again, I'll go back. If this policy were in place in the summer of 2005 after Katrina and Rita ran through the Gulf, there would not have been a market signal for importers to help bail us out of our production problems. That is what a 20 percent reduction in gasoline use will do.

We are already at a capacity level in the United States, domestic refiners that surpass that 20 percent reduction. What would we do with that extra, extraneous capacity if we continue to expand capacity today? These are the concerns we have as far as the mixed messages.

We believe, as an industry that and I think it must—maybe it was Senator Craig that mentioned it. We're going to need a vast array, a vast menu of fuels, transportation fuels, fuels that generate electricity, fuels that drive this Nation. You can't just pick or choose one or the other. I know you're not trying to do that but when you talk about a 35 billion gallon over a very short timeframe. When you talk about limiting gasoline production below to what we're making today. Any fiscally minded refinery executive will have to take a long, hard pause and see where he or she will put that capital.

Senator DORGAN. Mr. Drevna, that will be true if we are successful in trying to reduce the quantity of gasoline that we use and replace it with renewable fuel, that's an inevitable consequence. That puts your testimony with respect to the self interest of those you represent at odds with the national interest. Does it not?

Mr. DREVNA. No, sir. I don't think it's at odds. I think, again, we—I think we all have to figure out on a going forward basis where we want to be.

Senator DORGAN. What about 129 billion gallons of gasoline? What if that's where we want to be?

Mr. DREVNA. Ok. Then we have to understand—

Senator DORGAN. Then we're at odds.

Mr. DREVNA. What we have to understand as a Nation what the consequences, the unintended consequences of that may be. As I said, you know, we are going to be expected as an industry to produce ever increasing amounts of diesel. While making diesel we have to make gasoline. That's the nature of the beast.

Senator DORGAN. We are always going to use fossil fuels. I support the use the production of gasoline. I support the exploration of oil. I'm one of the few on my side that want to open up more in the Gulf of Mexico which is substantial when you evaluate Alaska, the West Coast and the Gulf. The Gulf of Mexico has the greatest potential. So I understand we're always going to do that.

The key national interest question here is our over reliance on foreign sources of oil from very troubled parts of the world. So, that's why we're trying to develop a renewable fuels infrastructure and renewable fuels capability. Frankly, I chafe when I see in the paper the oil industry say well, you start moving in this direction we'll start messing with you with respect to refinery investment and so on. It seems to me like, we're obviously all not on the same page. We need to figure out where the self interest is, where the national interest is and try to find out how we move through that.

This hearing is not about whether we're going to move in this direction. We are. We've already decided that as a matter of public policy. The President and the Congress in various iterations have said we're moving toward much more development of fossil fuels. No one can say that this country hasn't been very hospitable to the petroleum industry. I mean, they are making record amounts of money in this country. Thanks to people driving up to the gas pump and almost getting a second mortgage to fill up.

So, it's been a wonderful time for that industry. But it seems to me that as we try to evaluate with this President and this Congress and I think the country wanting to do this. How do we become less dependent on foreign oil? The proposition of producing more renewable fuels and creating an infrastructure by which we distribute that is just incredibly important for us. We're going to have to work through all these issues.

You heard at the front end of this discussion, my angst about how the gasoline islands are managed by the majors and so on. I think all of you on this panel have added to the various chapters to this book that we're trying to write about renewable fuels and the development of this new industry. I appreciate that a lot. I don't know what the exact answer is yet or the exact construct, but it's going to require policy change. It's going to require leadership. It's going to require cooperation by the private sector. It's going to require public sector initiatives and incentives in my judgment.

So, it's going to require a lot of things. We've got to do it right. We can't wait for 10 or 15, or 20 years. We need to run, not walk. But you've all made a point in similar ways that there has to be a consistent policy that most of our country understands that we're aspiring to achieve. I fully agree with that.

I'm supposed to be offering an amendment over on the floor at 4:30. So, I'm not going to ask additional questions. I would like to be able to send additional questions to the witnesses if I might because you represent five disciplines. All of which we wanted to hear from on this subject. Let me recognize my colleague, Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman. As I listen to not only the panelists, but those of us up here at the dias talking about the way to—national energy security and how we reduce our dependence on foreign sources of oil. I just have one word and it's ANWR. I know that's not today's hearing, but I just can't help myself. It is about renewables today and I will stick to the subject.

I want to ask a little bit of a parochial question. Coming from Alaska and recognizing that Alaska is now exempt from the ethanol requirements. But I want to understand how ethanol is working in the colder regions. Senator Klobuchar is from Minnesota, they've got some cold weather. Mr. Chairman from North Dakota, you certainly have some cold weather up there.

Senator DORGAN. That is simply not the case.

Senator MURKOWSKI. No, not cold there?

Senator DORGAN. We have no cold weather in North Dakota.

[Laughter.]

Senator MURKOWSKI. That's good. I'd be delighted to come up and visit you then.

Senator DORGAN. Don't do it in January then.

Senator MURKOWSKI. Yes, yes. But let me ask recognizing that you have a tendency for the ethanol fuels to attract the moisture and the problems that are inherent with the moisture in the fuel lines when you have very cold temperatures. Can any of you, Mr. Lampert, or perhaps, Mr. Drevna speak about the properties of ethanol in cold temperatures and how that it is actually working out?

Mr. LAMPERT. Thank you, Senator. The flexible fuel vehicles that are manufactured by the automakers are designed to operate on E85 in a manner similar to which they would operate on unleaded gasoline. That is if it's 40 below in Anchorage and your car won't start on gasoline. It's not going to start on E85. That said, if your car is operating on regular gasoline your car should start at whatever temperature at E85.

We have a testing facility in International Falls. I think if you see the weather maps in the winter that's the coldest in the country. I believe we have two E85 fueling stations there. U.S. post office operates about 80 delivery vehicles that operate on E85. They have great success with them. So, we do modify our fuel like gasoline from winter to summer. When we follow those regulations—

Mr. DREVNA [continuing]. Powered by biodiesel. There are some ASTM standards, but there also being some extra standards being investigated. We're not quite there yet. Again I go back to the fact that, you know, before we—I don't think it's any secret that NPRA does not support mandates.

Senator MURKOWSKI. Let me ask you.

Mr. DREVNA. We're not going to put that on the official record though, but when you mandate something that doesn't pass the test yet. That doesn't exist yet. We have a problem.

Senator MURKOWSKI. Let me ask you, Mr. Drevna. Do you have any estimate on what fuel mandates have cost the industry and what the impact of the mandates potentially are on the consumer?

Mr. DREVNA. Senator, you have to separate environmental mandates from production mandates. If you're talking about what the industry has capital expenditures to meet, all forms of fuel specifications, including reformulating gasoline one and two in the nineties, MSATs, mobile source air toxics, ultra low sulfur diesel, the tier two diesel for automobiles. You're talking of almost 50 billion dollars of requirements.

Now, just last—two years ago to get the MTBE and the ethanol in over that short timeframe. That was a two to three billion dollar effort. So, what it costs the industry depends upon what the mandate is. If it's an E10 nationwide mandate then you have to retool the refinery to make a blend stock that will take the E10 without harming air quality. If you have individual states doing their own thing, one state's an E10, one state's an E15, one state's an E20. My friends in the pipeline industry will not—will have a difficult time handling the different blend stocks that have to be shipped to various locations for that—for those specific products to make.

That's why we are calling for a congressional legislation that would pre-empt State mandates. Because if it indeed is supposed to be a national program of whatever billion gallons is ultimately decided. It should be indeed a national program that individual states and one of the—I guess it was Mr. Karsner was talking about boutique fuels. Well, if you start adding various every state and sometimes even locals have their own biofuels or ethanol mandate. It would be a nightmare for us to make the various blend stocks needed to blend and it would be a nightmare for the pipelines to try to deliver that blend stock to the terminals.

Senator MURKOWSKI. Let me just ask you, Mr. Lampert, very quickly and wrap up. In your written testimony you state that the Federal Government should engage non-profit entities for promotion of E85. Can you elaborate a little bit more in terms of how non-profits could be participants in this effort?

Mr. LAMPERT. Senator, I refer to the national Ethanol Vehicle Coalition, the Governors' Ethanol Coalition, others.

Senator MURKOWSKI. These that are represented here.

Mr. LAMPERT. Not the two in the middle. Although, I think they've had some issues with that.

The NEVC, we have the technical capabilities. We don't charge overhead. Oakridge national Laboratory or national Renewable Energy Laboratory has a tremendous overheard. I'm not saying that they don't do great work. They do. They're super people. They're my friends. We think that when you take that technical support out of the bureaucracy for one, that the—we're dealing with gas station owners and operators. The statement, hi, I'm here from the Federal Government. I'm here to help, doesn't always set real well with those people.

So, I think when we send people out from the central part of the United States and we employ folks for New York and in the south that they're a little more well received. So that's why we suggest that that particular statement is made, Ma'am.

Senator MURKOWSKI. Thank you. I appreciate that. Thank you, Mr. Chairman. That's all I have for right now.

Senator DORGAN. Senator Murkowski, thank you very much.

Let me thank all five of the witnesses in this panel. We appreciate your attendance and your statements today. We think this is an important issue. We intend to continue to work with Secretary Karsner and all of you and others to see if we can find policy initiatives that will address these issues in a satisfactory way.

This hearing is adjourned.

[Whereupon, at 4:38 p.m. the hearing was adjourned.]

APPENDIX

RESPONSES TO ADDITIONAL QUESTIONS

RESPONSE OF CHARLES T. DREVNA TO QUESTION FROM SENATOR MENENDEZ

Question 1. Mr. Drevna, I want to ask you about the economics of the refining industry. While consumers are being forced to pay more than $3.00 a gallon for gasoline, oil companies continue to reap record profits. In 2005, refineries increased their prices 255 percent. And whenever there is a spike in gasoline prices experts seems to lay the short term blame at the feet of the refineries.

In your testimony you say that we should let the market decide the price of gasoline, but apparently the market is not working. Earlier this year many of the oil companies who are members of your organization blamed the expansion of biofuels for the high price of gasoline.

How can this possibly make sense? Biofuels represent the first real competitor to petroleum in nearly a century. Why would this competition cause prices to rise?

Isn't the real answer that since the late 1990's—mergers between the giant oil companies, like Exxon and Mobil, Chevron and Texaco and Conoco and Phillips—have left us with only 10 major oil companies controlling 80 percent of our domestic refining capacity?

Isn't it the exercise of that market power that is one of the real causes of high gas prices and not the expansion of biofuels such as ethanol? Why else wouldn't these companies invest their record profits into new refineries or properly maintain existing refineries that are constantly breaking down?

Answer. The primary reasons for changes in the price of gasoline are the price of crude oil, the feedstock for the production of gasoline, and the demand for gasoline both in the United States and abroad. As in any commodity business, such as this one, demand affects supply and, therefore, affects price.

The Energy Information Administration (EIA) collects and reports average gasoline prices, both refiner and retail. The July 2007 issue of EIA's "Monthly Energy Review" includes average gasoline prices, none of which reflect the alleged "255 percent increase" that you cite.[1] I would be happy to sit down with you or your staff to discuss these statistics and am very interested in understanding the source of your statistics that you reference in your question.

NPRA believes that the U.S. refining industry is diverse and competitive; 54 refining companies, hundreds of wholesale and marketing companies, and more than 165,000 retail outlets compete in the U.S. market. The largest U.S. refiner accounts for just 13 percent of the nation's total capacity, and large integrated companies own and operate only approximately 10 percent of retail outlets.

By way of background, beginning in the late 1990's several large mergers occurred in the domestic petroleum industry. The Federal Trade Commission (FTC) reviewed mergers and acquisitions. In testimony presented before the Judiciary Committee on February 1, 2006 the FTC reiterated its long standing position regarding the oil industry and merger enforcement saying, "No other industry is so carefully scrutinized by the FTC" and "concentration for most levels of the United States petroleum industry has remained low to moderate."

In 2004, the FTC published an FTC Staff Study "The Petroleum Industry: Mergers, Structural Change, and Antitrust Enforcement." In this study the FTC concluded: . . . mergers have contributed to the restructuring of the petroleum industry in the past two decades but have had only a limited impact on industry concentration. The FTC has investigated all major petroleum mergers and required relief when it had reason to believe that a merger was likely to lead to competitive harm . . ." Furthermore, over the past ten years, the FTC intervened in thirteen

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[1] To view the latest EIA "Monthly Energy Review" please reference http://www.eia.doe.gov/emeu/mer/prices.html.

proposed mergers or acquisitions requiring significant divestitures to maintain competitive markets.

I would also like to highlight a 2005 Federal Trade Commission (FTC) report entitled Gasoline Price Changes: The Dynamic of Supply, Demand and Competition which states that "the vast majority of the FTC's investigations [into the petroleum industry] have revealed marked factors to be the primary drivers of both price increases and price spikes." The same report states at least nine studies concluded, "retail [gasoline] prices tend to be lower if one company owns both refining and retailing operations than if they are owned separately."

Mergers and acquisitions in the refining industry have actually maintained and even increased refining capacity; without such consolidation some of the individual refineries involved might not have been economically viable. One such example is Sunoco's refinery complex in the metropolitan Philadelphia area which now has over 550,000 barrels/day of capacity. If Sunoco were unable to operate these facilities as a unit, this production might not be available for consumers. Phillips Petroleum's (now ConocoPhillips) acquisition of the Tosco refinery system increased capacity and maintained refinery viability on a nation-wide basis. Additionally, Valero Energy Corporation has increased the productive capacity of the refineries it has acquired by an aggregate of nearly 400,000 barrels per day over the past several years and plans more expansion in the future. Examinations of other mergers and acquisitions tell the same story: refineries are kept operating and oftentimes are expanded.

Ethanol prices are available. See

http://www.energy.ca.gov/gasoline/graphs/ethanol__10-year.html.

http://www.energy.ca.gov/gasoline/graphs/ethanol__18-month.html.

http://www.mda.state.mn.us/news/publications/renewable/ethanol/marketnews report.pdf

These sources document that ethanol prices are volatile and ethanol is not uniformly a very low-cost gasoline additive. Because ethanol is in half of all U.S. gasoline, ethanol price volatility can contribute to changes in gasoline prices.

Refiners have made significant investments in expansions of refining capacity. The fact is that we have added hundreds of thousands of barrels/day of capacity at existing refineries, the equivalent of a new refinery each year for the last 14 years. That is a remarkable investment in the U.S. refining industry.

RESPONSES OF CHARLES T. DREVNA TO QUESTIONS FROM SENATOR CANTWELL

Most of the hearing discussion focused on ethanol, somewhat overlooking the second most significant biofuel in the U.S., biodiesel. Our experience in Washington state is the biodiesel is a particularly promising alternative fuel, both because we are able to grow oilseed feedstocks like canola in Eastern Washington, and we have strong demand in our population centers around Puget Sound.

Biodiesel is also a key tool in tackling vehicle emissions, which in our state blessed with abundant hydropower is our greatest source of air pollution. And since many public and private fleet vehicles use diesel fuel, biodiesel is also a good way for municipalities to meet their climate change and air quality reduction goals. Biodiesel also has about the same energy density as petroleum diesel, so there is not the miles per gallon reduction we have been discussing when it comes to ethanol.

Question 2. Could you comment on ways that we can help ensure more biodiesel production and its associated infrastructure? How does the infrastructure need for biodiesel distribution differ from those for ethanol?

Answer. The Environmental Protection Agency (EPA) has concluded that biodiesel increases NO_X emissions and reduces fuel economy because of its lower energy content. See http://www.epa.gov/otaq/models/analysis/biodsl/p02001.pdf. In addition, certain quantities of biodiesel have a tendency to gel in cold weather.

The most notable economic challenge to the development of a viable, stand-alone biofuels transportation industry is the seemingly constant push to an ever-increasing mandate of these fuels. So long as sound, open and free marketplace dynamics and discipline are ignored through imposition of artificial and inefficient mandates, distortion of basic economic realities will continue. The goal of the biofuels industry should be economic parity, or better, with that of refined petroleum products. This situation will never be realized so long as the imposition of mandates over-rides basic economic fundamentals. Energy policy based on mandates is not a recipe for success. We believe the best possible future for the biofuels industry rests on allowing the market to operate freely because open markets permit supply and demand to be balanced in an equitable fashion benefiting both producers and consumers.

Question 3. Section 130(c) of the Senate passed energy bill contains legislation I authored that would create a national biodiesel fuel quality standard. While maintaining biomass feedstock and process neutrality, this provision is intended to pro-

vide certainty for interested parties like truckers who want to use biodiesel but cannot risk using substandard biodiesel that could harm their engines. Do you support this language as written and a national biodiesel fuel quality standard more generally?

Answer. Section 130(c) of the Senate energy bill passed last June would require the Administration to "ensure that each diesel-equivalent fuel derived from renewable biomass and introduced into commerce is tested and certified to comply with applicable standards of the American Society for Testing and Materials." NPRA supports enforcement of motor fuel quality standards and Section 130(c) as written.

NPRA supports the development of motor fuel quality standards at the American Society for Testing and Materials. Many states currently enforce these standards.

Question 4. Are there measures that Congress should take focused specifically on biodiesel, as opposed to the more general legislation we have been discussing here today?

Answer. Congress should amend the Clean Air Act to preempt state and local biofuels (including biodiesel and ethanol) mandates. Local mandates will impose additional strain on the transportation fuels distribution system and increase costs for shipping and storage. While it still creates many problems, the existing federal Renewable Fuels Standard (RFS) mandate with its credit-trading provisions contains a degree of freedom that allows the distribution system to operate at a low-cost optimum by avoiding infrastructure bottlenecks (such as lack of storage or rail capacity). Mandating ethanol or biodiesel usage in specific areas forces a distribution pattern that is less flexible, and therefore has less capability to minimize costs. These additional costs will be borne by consumers.

Although the federal RFS is a federal mandate for biofuels consumption, it does not currently preempt similar state mandates. There are several recent state biofuels mandates since the Energy Policy Act of 2005 was enacted, including those in Louisiana, Missouri, Oregon, and Washington. It is difficult for regulated parties to reconcile different state and federal biofuels mandates (e.g., credit trading, averaging, banking credits, identifying liable or obligated parties). Inconsistencies will lead to instability in the marketplace. Further, these mandates create boutique markets requiring special fuel formulations and transportation logistics, thereby balkanizing the national fuel market.

Public policy should focus on preventing the proliferation of state biofuels mandates that will have negative consequences for the motor fuel supply. If Congress wishes to allow for as diverse a supply of alternative fuels as possible, and to promote as much flexibility in the system as possible, state and local biofuels mandates should be preempted.

Question 5. According to the Agriculture Department, U.S. ethanol from corn costs about $1.05 per gallon to produce. While I understand that ethanol distribution costs are about 10 cents higher per gallon then regular gasoline, why is E-85 selling at about three times its production cost?

Answer. A member of the National Association of Convenience Stores (NACS) and the Society of Independent Gasoline Marketers of America (SIGMA) testified on June 7, 2007 before the Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce. I want to reiterate the following statements from this testimony:

> The primary impediment to retailers converting a dispenser to E-85 is equipment compatibility. Because E-85 is more corrosive than regular gasoline or E-10, it requires equipment that is certified compatible with the fuel. In preparation for this hearing, I inquired of my equipment supplier to determine what would be required to convert one of my newer stations to sell E-85. These stations have the newest equipment and, therefore, hold the best chance for existing equipment compatibility. I learned that my new steel tanks and my fiberglass tanks were certified compatible with E-85. Our automatic tank gauges were listed compatible as were our fiberglass piping systems. However, we would have to replace several of the ancillary fittings, including the submersible turbine pump, the overfill drop tube and others like flexible hoses, spill buckets, ball valves, etc. In addition, our hanging hardware, which includes conventional nozzles, swivels, breakaways and curb hoses would have to be replaced with nickel plated units at an increased cost. For all of these conversions, including tank cleaning, we estimated the cost to be between $6,000 and $7,000. However, this does not include the dispenser itself. The two dispenser manufacturers each charge an additional fee for a new E-85 compatible dispenser—$8,000 for Dresser-Wayne and $7,300 for Gilbarco. Thus, a typical E-85 dispenser can cost upwards of $17,000 per unit. And this cost is for equipment that has

> not yet been certified compatible with E-85 by Underwriters Laboratories. . . . We have spoken with several retailers who lament their decision to install E-85 equipment because they have been unable to generate sufficient sales from these fueling positions to support their overall business model.

Additionally, GAO also examined the economics of E-85:

> High demand for ethanol in low blends as an oxygenate and fuel extender has contributed to wholesale ethanol prices that are significantly higher than the wholesale price of gasoline. An additional incentive to selling ethanol in blends of 10 percent or lower, according to one major fuel blender with whom we spoke, is that the fuel economy reduction at that level is too small for consumers to notice; hence, the fuel can be sold at the same price as conventional gasoline at fueling stations. On the other hand, to attract customers, fueling stations must generally sell E85 at a discount to conventional gasoline to offset the noticeably lower miles per gallon that drivers experience when using the fuel. For example, in 2006, according to DOE's Alternative Fuel Price Reports, E85 sold for 11 percent less on average than regular gasoline at a sample of fueling stations nationwide. However, few producers are willing to discount ethanol so that fueling stations can price E85 lower than gasoline. Consequently, EIA projects that use of ethanol for E85 will continue to be limited until the market for blends of 10 percent and under is nearly saturated.[2]

Question 6. Congress has decided to provide an incentive of 51 cents per gallon for ethanol, do you believe that consumers are seeing a commensurate value for this subsidies? What does this incentive translate to if the metric was $/barrel of oil?

Answer. The corn ethanol industry has received significant government support. In examining the continued feasibility of the 51 cents per gallon ethanol subsidy, Congress should consider the maturity of the ethanol industry, ethanol's cost competitiveness with other additives and fuels and potential price implications of changing the subsidy.

As the question states, the current subsidy is 51 cents per gallon. 51 cents/gallon times 42 gallons/barrel of oil = $21.42/barrel. However, the energy content of ethanol is 30% lower than the energy content of gasoline, therefore 21.42/0.7 = $30.60 (note: 0.7 is used in the calculation, because ethanol has only 70 percent of the energy content of gasoline).

Question 7. Given that producing corn ethanol is a mature industry and cost competitive, while producing other advanced biofuels is not, do you believe limited government tax dollars be better spent on incentives and policies that focus more on advanced biofuels and biodiesel than corn?

Answer. NPRA believes in the free market. NPRA supports the sensible and workable integration of renewable and alternative fuels into the marketplace based on market principles and demands. NPRA does not advocate financial incentives for advanced biofuels and biodiesel.

The most notable economic challenge to the development of a viable, stand-alone biofuels transportation industry is the seemingly constant push to an ever-increasing mandate of these fuels. So long as sound, open and free marketplace dynamics and discipline are ignored through imposition of artificial and inefficient mandates, distortion of basic economic realities will continue. The goal of the biofuels industry should be economic parity, or better, with that of refined petroleum products. This situation will never be realized so long as the imposition of mandates over-rides basic economic fundamentals. Energy policy based on mandates is not a recipe for success. We believe the best possible future for the biofuels industry rests on allowing the market to operate freely because open markets permit supply and demand to be balanced in an equitable fashion benefiting both producers and consumers.

Question 8. The current renewable fuels standard created in the 2005 Energy Bill has proven largely irrelevant because market forces have lead to production rates exceeding the RFS. However, the Senate passed energy bill contains a substantial increase in the RFS. What value to you estimate a creditable RFS compliance credit will have in 2012, 2015, 2020, and 2022?

Answer. NPRA does not have a projection on the value of future RFS compliance credits.

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[2] U.S. General Accountability Office, "Biofuels: DOE Lacks a Strategic Approach to Coordinate Increasing Production with Infrastructure Development and Vehicle Needs," GAO-07-713, June 2007, p. 28.

Question 9. As Senator Klobuchar mentioned, one of the pieces of legislation we have been working on would prevent oil companies from blocking installation of biofuel infrastructure at their franchised stations. Could you comment on this problem and whether the measures Congress is currently considering will help overcome this barrier?

Answer. This issue was discussed extensively at a hearing on May 8, 2007 before the Subcommittee on Energy and Air Quality of the House Committee on Energy and Commerce. During the question and answer period, Paul Reid (witness for the Society of Independent Gasoline Marketers of America and the National Association of Convenience Stores) explained several times that new legislation was not necessary because of the current provisions of the Petroleum Marketing Practices Act.

The Petroleum Marketing Practices Act (PMPA) was established to ensure stability and reasonable expectations in the franchise relationship. Therefore, PMPA does not invalidate existing contracts. Under existing contract law, franchisors and franchisees are free to negotiate for the sale of a range of products, including conventional, reformulated, and renewable fuels. Should the Congress adopt a policy that disrupts this relationship by forcing the sale of certain products outside of existing contractual relationships, then we believe Congress must hold refiners harmless for any of the adverse consequences related to these products.

Question 10. Section 511 of the Senate passed energy bill is derived from an amendment I offered and would increase consumer awareness of flex fuel vehicle capabilities by including a badge on the outside of the car, information in a car owner's manual, and a clearly labeled fuel cap. Do you support this language as written and consumer awareness programs for biofuels more generally?

Answer. The retail price of E85 must be 25-30 percent lower than the retail price of gasoline in order for consumers to travel the same distance. Given this situation, I think it is wise to educate consumers about the diminished energy content of E-85 compared to gasoline and what price differentials between the two products economically justifies the use of E-85. Such information is crucial for avoiding a public backlash against E-85.

Brazil has reduced their use of oil by approximately 200,000 barrels per day by using a mix of ethanol and gasoline at their gas pumps. They now mandate that at least 10% ethanol be mixed with their gasoline, although most places contain around 40%, which is possible due to the amount of flex fuel vehicles they produce. The use of ethanol has saved Brazil over $120 billion in imported oil over the last 22 years, decreased air pollution in the big cities, and created a stronger economy along with an increase in jobs.

Question 11. Brazilian ethanol from sugar cane costs 81 cents per gallon to produce (compared to $1.05 for U.S. ethanol from corn), and Brazilian ethanol production from sugarcane, yields about 590 gallons per acre. Given this potential value for American drivers, especially compared to record high gasoline prices, does it make sense to continue to impose a tariff on importing Brazilian ethanol?

Answer. NPRA supports the elimination of the tariff on imported ethanol. See NPRA's testimony before the Senate Commerce, Science and Transportation Committee on May 23, 2006: http://commerce.senate.gov/public/__files/slaughter052306.pdf

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RESPONSE OF JONATHON LEHMAN TO QUESTION FROM SENATOR MENENDEZ

Question 1. What steps can we take to create better access to ethanol in the Northeast and specifically my home state of New Jersey? I noticed that an E85 pump was recently installed in Georgetown here in Washington DC, but the citizens of New Jersey are anxious to help reduce our dependence on oil and reduce our greenhouse gas emissions by using biofuels. Right now there are 129,000 cars in New jersey that can run on E85, but people do not have access to pumps. I was pleased to support a provision in the Energy Bill we just passed here in the Senate to incentivize further market penetration of E85 pumps by establishing a pilot grant program to create renewable fuel corridors. But will this program be enough?

Answer. VeraSun has pursued an aggressive strategy to increase the availability of E85 across the country and were extremely pleased to be the first to offer E85 to our Nation's capitol. VeraSun is committed to helping develop a robust E85 market across the United States.

From our experiences, the most critical thing needed to quickly build a robust E85 market in the United States is to improve E85 economics through the creation of an E85 Blenders Credit. Fuel retail owners must know that E85 will be priced appropriately and that there will be sufficient consumer demand to install E85 infrastructure. Because Flexible Fuel Vehicles (FFVs) are currently not designed to take

advantage of E85's high octane, FFV owners receive fewer miles per gallon running on E85 than on conventional gasoline. This direct impact on consumers requires that E85 be sold at a discount to gasoline for it to be competitive in the marketplace.

To address this economic disincentive to install E85 pumps, Congress should create a blenders credit for ethanol blended into E85 within the existing VEETC system. This credit would compensate for the discount resulting from the loss in miles per gallon efficiency. We believe that establishing this incentive will lead to additional E85 production and will help ensure that E85 is priced properly at the pump for consumers. This will help make a fuel retailers decision to offer E85 much easier and lead to much quicker expansion of E85 across the United States.

RESPONSES OF JONATHON LEHMAN TO QUESTIONS FROM SENATOR CANTWELL

Question 2. According to the Agriculture Department, U.S. ethanol from corn costs about $1.05 per gallon to produce. While I understand that ethanol distribution costs are about 10 cents higher per gallon then regular gasoline, why is E-85 selling at about three times its production cost?

Answer. Wholesale ethanol prices tend to follow petroleum prices because ethanol is most commonly used as a gasoline additive in the E10 market and is bought and sold through the nation's petroleum distribution system through long-term contracts (six to 12 months) between ethanol producers and marketers and petroleum companies. Because the lion's share of ethanol is sold into the E10 market, the price that petroleum companies are willing to pay for ethanol as an additive sets the price for ethanol purchased at the wholesale level for use in E85. Until E85 usage increases significantly in the United States, wholesale ethanol price will continue to be driven by what petroleum companies are willing to pay for the product.

That being said, VeraSun believes that E85 must be priced fairly at the pump for consumers to choose to adopt it. As part of its E85 initiative, VeraSun sells E85 directly to willing retail stations at a discount to gasoline. On a public policy level, VeraSun believes that the creation of an E85 blenders credit will create market conditions that will lead to additional E85 production and will help ensure that E85 is priced properly at the pump for consumers

Question 3. Congress has decided to provide an incentive of 51 cents per gallon for ethanol; do you believe that consumers are seeing a commensurate value for these subsidies? What does this incentive translate to if the metric was $/barrel of oil?

Answer. The 51-cent Blenders Tax Credit is an incentive to the petroleum industry to blend ethanol into their gasoline and is an effective policy tool to ensure that this occurs. This incentive translates to 5.1 cents per gallon of E10 sold to consumers, and is typically passed on to motorists in the form of lower prices at the pump for higher octane, ethanol-enriched fuel.

Question 4. Given that producing corn ethanol is a mature industry and cost competitive, while producing other advanced biofuels is not, do you believe limited government tax dollars be better spent on incentives and policies that focus more on advanced biofuels and biodiesel than corn?

Answer. In the near term, Government policies should focus on expanding demand for ethanol—regardless of its feedstock origins. Because ethanol made from corn will saturate the 10% ethanol market in the coming years, it is critical that we create new ethanol demand through E85 and higher blends in order for cellulosic ethanol to be successful. This is the most significant means by which to foster the development of advanced biofuels.

Question 5. The current renewable fuels standard created in the 2005 Energy Bill has proven largely irrelevant because market forces have lead to production rates exceeding the RFS. However, the Senate passed energy bill contains a substantial increase in the RFS. What value do you estimate a creditable RFS compliance credit will have in 2012, 2015, 2020, and 2022?

Answer. The Renewable Fuels Standard, passed as part of the Energy Policy Act of 2005, was one of the most important factors in the rapid expansion of the ethanol industry. Ethanol production will double from 2005 levels in the next 24 to 48 months because the RFS provided certainty to investors that ethanol demand will grow.

Importantly, the Senate passed increase in the RFS schedule will create additional demand that will further expansion of renewable fuel usage across the country. The ethanol industry will produce enough ethanol meet the new RFS targets of 13.2 billion gallons by 2012 and 15 billion gallons by 2015 with corn-based ethanol, and it is our hope and expectation that we will be able to meet the 2020 and 2022 targets with a combination of corn and cellulosic ethanol. The value of any

RFS credit will depend on who quickly cellulosic ethanol technologies become cost competitive and widespread cellulosic ethanol production comes on line.

Question 6. As Senator Klobuchar mentioned, one of the pieces of legislation we have been working on would prevent oil companies from blocking installation of biofuel infrastructure at their franchised stations. Could you comment on this problem and whether the measures Congress is currently considering will help overcome this barrier?

Answer. We believe that fuel retailers should be free of artificial encumbrances to sellE85 and that the legislative efforts being discussed would help to do so.

Question 7. Section 511 of the Senate passed energy bill is derived from an amendment I offered and would increase consumer awareness of flex fuel vehicle capabilities by including a badge on the outside of the car, information in a car owner's manual, and a clearly labeled fuel cap. Do you support this language as written and consumer awareness programs for biofuels more generally?

Answer. VeraSun supports efforts like this to increase consumer awareness. When VeraSun launched its E85 initiative in 2005, one of the fundamental premises of the program was that an aggressive marketing program to raise awareness to the benefits of FFV ownership and E85 use would be critical to its success. At that time, research indicated that a significant number of FFV owners were unaware that their vehicles could run on E85. As part of our efforts, we worked with GM and Ford to help raise FFV awareness.

Progress is being made. In announcing its Live Green, Go Yellow campaign, GM has equipped all new FFVs with a yellow gas cap indicating that it is E85 compatible. Additionally, Ford and Chrysler have also started to include more badging of FFV vehicles. We appreciate these efforts.

Question 8. Brazil has reduced their use of oil by approximately 200,000 barrels per day by using a mix of ethanol and gasoline at their gas pumps. They now mandate that at least 10% ethanol be mixed with their gasoline, although most places contain around 40%, which is possible due to the amount of flex fuel vehicles they produce. The use of ethanol has saved Brazil over $120 billion in imported oil over the last 22 years, decreased air pollution in the big cities, and created a stronger economy along with an increase in jobs.

Brazilian ethanol from sugar cane costs 81 cents per gallon to produce (compared to $1.05 for U.S. ethanol from corn), and Brazilian ethanol production from sugarcane, yields about 590 gallons per acre. Given this potential value for American drivers, especially compared to record high gasoline prices, does it make sense to continue to impose a tariff on importing Brazilian ethanol?

Answer. The secondary ethanol tariff is critical to U.S. energy and national security policy goals of energy independence. In order to spur the development and growth of the domestic ethanol industry, the Federal government has provided important tax incentives such as the Blender's tax credit to spur use of ethanol in our nation's fuel supply. The secondary tariff was imposed in 1980 after the Internal Revenue Service ruled that all ethanol, regardless of country of origin, is eligible for the tax incentives. Because of this ruling, all ethanol blended by petroleum companies in the United States receives a tax credit of 51 cents per gallon. The secondary tariff ensures that U.S. taxpayer funds are not used to subsidize foreign ethanol production that is already subsidized. For example, Brazil has provided billions in tax and loan incentives to build their domestic ethanol production facilities while imposing a 20% tariff on ethanol imported into Brazil.

That being said, the secondary ethanol tariff does not prevent foreign ethanol from being imported into the United States. In 2006, the U.S. imported 653.3 million gallons of ethanol. Of that total, 433.7 million gallons was imported from Brazil. The tariff simply ensures that the tax incentives put in place to spur the development of the domestic ethanol industry do not subsidize foreign production.

[Responses to the following questions were not received at the time the hearing went to press:]

QUESTIONS FOR ALEXANDER KARSNER FROM SENATOR CANTWELL

I understand that today there are about 6 million flex fuel vehicles on the road today. However, that is only about 3% of the vehicles in the United States and only about 1% of that number ever ends up using flex fuels during its lifetime.

Most of the hearing discussion focused on ethanol, somewhat overlooking the second most significant biofuel in the U.S., biodiesel. Our experience in Washington state is the biodiesel is a particularly promising alternative fuel, both because we

are able to grow oilseed feedstocks like canola in Eastern Washington, and we have strong demand in our population centers around Puget Sound.

Biodiesel is also a key tool in tackling vehicle emissions, which in our state blessed with abundant hydropower is our greatest source of air pollution. And since many public and private fleet vehicles use diesel fuel, biodiesel is also a good way for municipalities to meet their climate change and air quality reduction goals. Biodiesel also has about the same energy density as petroleum diesel, so there is not the miles per gallon reduction we have been discussing when it comes to ethanol.

Brazil has reduced their use of oil by approximately 200,000 barrels per day by using a mix of ethanol and gasoline at their gas pumps. They now mandate that at least 10% ethanol be mixed with their gasoline, although most places contain around 40%, which is possible due to the amount of flex fuel vehicles they produce. The use of ethanol has saved Brazil over $120 billion in imported oil over the last 22 years, decreased air pollution in the big cities, and created a stronger economy along with an increase in jobs.

Question 1. You testified that DOE sees "no technical reason why flex-fuel vehicles can not be more uniformly ubiquitous across all markets, or that flex fuel vehicles could not be offered to all consumers at a relatively low price." What is your technical basis for that assessment? What is the Administration's estimate of the cost of the making a vehicle flex fuel capable? Why do think there has been so few flex fuel cars produced to date in the U.S.?

Question 2. I understand that unlike other biofuels, biodiesel R&D is no longer a priority for the Energy Department. Can you explain your reasoning for this decision and when was it made?

Question 3. With the large budget increases Congress has appropriated for your office for continued biofuels R&D, will biodiesel work be revived?

Question 4. Would more R&D into uses for biodiesel production by-products help drive down the cost of biodiesel?

Question 5. What is DOE currently doing to research the potential for diesel equivalent fuel derived from wood waste using such processes such as gasification?

QUESTIONS FOR DEBORAH MORRISSETT FROM SENATOR CANTWELL

Question 1. You testified that producing a flex fuel vehicle is considerably more complicated then most people realize. Please describe in detail the actual technical changes needed to the component parts of a typical car that enable it capable of using any mix of biofuel. Are the necessary component changes different for a gasoline versus a diesel powered engine?

Question 2. What is the marginal cost of producing a flex fuel vehicle, I have heard estimates range from $30 to $150?

Question 3. Do domestic automakers have more expertise in producing flexible fuel vehicles than some of their international counterparts? If this is true, how long do you think it would take for international automakers to catch up?

Question 4. I understand that every car on the road today can utilize up to 10% ethanol, and many are doing so right now probably without their customers knowing it. Did automakers need to do anything special to their vehicles to allow this E10 capability? If yes, do these changes allow blends of up to 12 or 15% ethanol?

Question 5. What warranties do automakers provide for flexible fuel vehicles and how do they compare to warranties for non-flex fuel vehicles sold in the U.S.?

Question 6. How many of the 6 million vehicles on the road today received the duel fuel CAFE credit? How many flex fuel vehicles do you think would have been manufactured without the duel fuel CAFE credit?

Question 7. I understand there are ways to make up for ethanol's lower energy density to take advantage of ethanol's inherently higher octane level? In fact, GM's Saab introduced last year a Saab 9-5 that produced 14% more maximum power and 11% more torque, while cutting fossil CO_Xemissions by up to 70% when running on E85 than on gasoline. What lessons can we learn from this vehicle in terms of increased E85 use?

Question 8. I understand that a majority of vehicles in Brazil sold in Brazil are now flexible fuel vehicles. Many of these cars are manufactured by American automakers. What changes did you need to make to the vehicles you are selling in Brazil to make them flex fuel capable as compared to vehicles sold here in the U.S. What is the marginal production cost, if any, to those flex fuel vehicles sold in Brazil? Do automakers provide warranties for biofuel use for flex fuel cars in Brazil?

QUESTIONS FOR DAVID TERRY, CHARLES DREVNA, JONATHAN LEHMAN, AND PHILLIP LAMPERT FROM SENATOR CANTWELL

Question 1. Could you comment on ways that we can help ensure more biodiesel production and its associated infrastructure? How does the infrastructure need for biodiesel distribution differ from those for ethanol?

Question 2. Section 130(c) of the Senate passed energy bill contains legislation I authored that would create a national biodiesel fuel quality standard. While maintaining biomass feedstock and process neutrality, this provision is intended to provide certainty for interested parties like truckers who want to use biodiesel but cannot risk using substandard biodiesel that could harm their engines. Do you support this language as written and a national biodiesel fuel quality standard more generally?

Question 3. Are their measures that Congress should take focused specifically on biodiesel, as opposed to the more general legislation we have been discussing here today?

Question 4. According to the Agriculture Department, U.S. ethanol from corn costs about $1.05 per gallon to produce. While I understand that ethanol distribution costs are about 10 cents higher per gallon then regular gasoline, why is E-85 selling at about three times its production cost?

Question 5. Congress has decided to provide an incentive of 51 cents per gallon for ethanol, do you believe that consumers are seeing a commensurate value for this subsidies? What does this incentive translate to if the metric was $/barrel of oil?

Question 6. Given that producing corn ethanol is a mature industry and cost competitive, while producing other advanced biofuels is not, do you believe limited government tax dollars be better spent on incentives and policies that focus more on advanced biofuels and biodiesel than corn?

Question 7. The current renewable fuels standard created in the 2005 Energy Bill has proven largely irrelevant because market forces have lead to production rates exceeding the RFS. However, the Senate passed energy bill contains a substantial increase in the RFS. What value to you estimate a creditable RFS compliance credit will have in 2012, 2015, 2020, and 2022?

Question 8. As Senator Klobuchar mentioned, one of the pieces of legislation we have been working on would prevent oil companies from blocking installation of biofuel infrastructure at their franchised stations. Could you comment on this problem and whether the measures Congress is currently considering will help overcome this barrier?

Question 9. Section 511 of the Senate passed energy bill is derived from an amendment I offered and would increase consumer awareness of flex fuel vehicle capabilities by including a badge on the outside of the car, information in a car owner's manual, and a clearly labeled fuel cap. Do you support this language as written and consumer awareness programs for biofuels more generally?

Question 10. Brazilian ethanol from sugar cane costs 81 cents per gallon to produce (compared to $1.05 for U.S. ethanol from corn), and Brazilian ethanol production from sugarcane, yields about 590 gallons per acre. Given this potential value for American drivers, especially compared to record high gasoline prices, does it make sense to continue to impose a tariff on importing Brazilian ethanol?

QUESTIONS FOR ALEXANDER KARSNER FROM SENATOR DORGAN

The Senate Energy bill will increase the renewable fuels standard to 36 billion gallons of renewable fuels by 2022. Most expect we are on pace to produce about 14-15 billion gallons of ethanol in the next 8-10 years. If our country uses about 140 billion gallons of gasoline per year and the current market for ethanol is primarily used as a 10 percent blend with gasoline, that market will be saturated in the next 8-10 years. I believe we need a much more aggressive policy approach to install biofuels infrastructure at more than the current 1% of the nation's retail gas stations. We also need to dramatically expand the number of flex fuel vehicles on our roads.

Question 1. Earlier this year, you testified in front of my Energy & Water Appropriations Subcommittee that we are not developing infrastructure at "rate" and "scale" significant enough to be consistent with the amount ethanol we are on track to produce. Can you talk more about this? Is the current rate of investment in infrastructure sufficient to support a domestic biofuels industry? If not, what needs to change?

Question 2. What is your best estimate of when the production of ethanol will surpass the amount needed for octane enhancement in gasoline (E-10)? How do we pre-

vent the market from collapsing so there is not a revolt against these production requirements?

Question 3. Your testimony mentions that the Department and other federal agencies are examining intermediate fuel blends. Can you describe in greater detail what activities the Department of Energy is pursuing with other agencies to make intermediate blends more widely available to consumers, and what the potential role of intermediate blends might be?

Question 4. How do we make sure that we get the renewable fuels pumps in the right locations near heavy concentrations of vehicles so that they will be utilized? We want to make sure that we get them in the right locations. Does the Administration have an implementation plan for this? What can we, as policymakers, do to better help you expand renewable fuels infrastructure?

QUESTIONS FOR JONANTHAN LEHMAN FROM SENATOR DORGAN

Question 1. EPACT 2005 made available a 30% investment tax credit for installing E-85 pumps. Also, we have put in place various grant and public education programs for E-85. However, at this point, the U.S. has less than 1% renewable fuels infrastructure installed nationwide. Given the pace of infrastructure implementation at this point, and the dramatic expansion of ethanol production do you believe it's necessary for the federal government to send a stronger signal to the market as we anticipate more fuels and vehicles being produced?µ What other market signals would be beneficial?

Question 2. Earlier this year, I introduced the SAFE Energy Bill (S. 875) with Senator Craig. Title II of that bill called for increasing the alternative fuel vehicle refueling property credit from 30% to 35% for E-85 pumps and 40% for blender pumps. It also called for a study to determine the market penetration of renewable fuels infrastructure by 2013. If 10% market penetration had not been achieved by 2013, the Sec. of Energy would do a rulemaking to achieve 10% market penetration by 2020. Do you see this as reasonable yet aggressive approach? Do you have any other legislative ideas that might help this along?

QUESTIONS FOR DAVID TERRY FROM SENATOR DORGAN

Question 1. You heard Senator Klobuchar earlier speak about some of the visionary programs Minnesota has utilized to install hundreds of E-85 pumps in their state. My home state of North Dakota has 16,000 FFVs and only 23 E-85 pumps. Can you give further examples of some of the more aggressive state programs to develop E-85 infrastructure? Would any of those programs accelerate development if implemented on a national scale?

Question 2. Earlier this year, I introduced the SAFE Energy Bill (S. 875) with Senator Craig. Title II of that bill called for increasing the alternative fuel vehicle refueling property credit from 30% to 35% for E-85 pumps and 40% for blender pumps. It also called for a study to determine the market penetration of renewable fuels infrastructure by 2013. If 10% market penetration had not been achieved by 2013, the Sec. of Energy would do a rulemaking to achieve 10% market penetration by 2020. Do you see this as reasonable yet aggressive approach? Do you have any other legislative ideas that might help this along?

QUESTIONS FOR PHILLIP LAMPERT FROM SENATOR DORGAN

Question 1. The NEVC works with station owners around the country to install E-85 pumps. Roughly 57% of retail gas stations around the country are franchisees of a major integrated oil company. Earlier this year, the Wall Street Journal (4-2-07) reported about hurdles and barriers that oil companies like ChevronTexaco, BP and ExonMobil have put in place to make it more difficult for their franchisees to sell E-85 to consumers. In terms of working with station owners to install E-85 pumps, what kind of resistance have you experienced from the oil companies? Would a national policy to remove many of these barriers significantly impact the widespread installation of renewable fuels infrastructure?

Question 2. Could you rank the barriers to entry in the marketplace for expanded infrastructure needed to deliver more and more biofuels to the market?

QUESTIONS FOR CHARLES DREVNA FROM SENATOR DORGAN

The oil industry has become incredibly consolidated and vertically integrated over the years. From exploration, production, refining and even owning a couple thousand retail gas stations around the country. And once again, this week major integrated oil companies are reporting some of the largest corporate profits in U.S. history. It's no secret that the oil industry has not been ethanol's biggest cheerleader. However, many refiners currently work well with several ethanol producers around the country to blend E-10.

Question 1. Can you further describe how maximizing profit for shareholders at oil companies are not at odds with the increased development of renewable fuels and ultimately the national goal of reducing our dependence on imported petroleum?

Question 2. The Wall Street Journal (4-2-07) documented instances of major oil companies putting up barriers for their franchisees to sell E-85. Why not allow the franchise gas station owners the right to sell E-85 as they please at their own stations?

Question 3. WalMart, one of the nation's largest retailers, announced last year that they are interested in selling E-85. While I understand they have not yet begun selling E-85 at their roughly 380 gas stations nationwide. Regardless, if a company such as WalMart, CostCo, etc. were to seek a fuel agreement with some major integrated Oil Company, would that oil company put up these same barriers for a retailer like WalMart to sell E-85?

QUESTIONS FOR DEBORAH MORRISSETT FROM SENATOR DORGAN

The Big Three, including Chrysler, Ford and GM, made a pledge earlier this year that by 2012, 50% of each of your vehicle fleets would be flex-fuel capable. This was welcome news. I hope we can push to make 100% of our vehicles flex fuel capable in the years to come.

Question 1. In terms of the extra costs from converting a regular engine to a flex fuel engine in a vehicle, I have heard a wide range of estimates from $45 to $400. Can you put an industry wide average on the cost of differential between manufacturing a regular engine versus a flex fuel engine capable of running at E-85?

Question 2. Currently, an automaker can receive 1.2 credits toward their CAFÉ requirements if they produce a flex fuel vehicle. How much of a driver is the push by the Big Three, or Chrysler, to produce more FFVs on the road related to the auto industry's desire to get CAFE credits in their fleets rather than focus on other efficiency increases?

QUESTIONS FOR ALEXANDER KARSNER FROM SENATOR MENENDEZ

Question 1. Mr. Karsner, we discussed the technical difficulties of transporting ethanol via pipeline at a hearing before our committee on April 12th of this year. I appreciate your hard work in coordinating with the Department of Transportation to solve the technical problems of transporting ethanol via pipeline. Please provide me a timeline of when this work began, the progress that has been made thus far and when you anticipate these technical issues being overcome for potential commercial application. Please also provide details on how many people comprise the team looking into these problems and who they are partnering with in the private sector. I would also appreciate you detailing any efforts of Department of Energy to work with Brazil (either directly or through the State Department) to license technologies used in Brazil to pipeline ethanol. As you know the United States and Brazil have agreed to work jointly to share technology on biofuels.

Similarly, could you provide me a timeline detailing Department of Energy's work with the EPA to test whether traditional gasoline engines can use ethanol concentrations as high as E25—similar to what cars use in Brazil? During your testimony you said this testing would take 36 months. Please explain why this will take so long and why the work was not started before now. Please also provide details on how many people comprise the team looking into this issue and who Department of Energy and EPA are partnering with in the private sector. I would also appreciate you detailing any efforts of Department of Energy to work with Brazil (either directly or through the State Department) to secure any testing for ethanol use in Brazil.

Question 2. You indicated that the problems were not technical in nature but had more to do with automobile manufacturers not willing to warranty their engines for ethanol use above E10. What efforts has the Department of Energy made to work

with auto manufacturers to address these concerns? Will these concerns be addressed by the planned testing by the EPA?

QUESTIONS FOR DEBORAH MORRISSETT FROM SENATOR MENENDEZ

Question 1. Ms. Morrissett, I noticed in your testimony that Chrysler has committed, by 2012, to have 50% of the cars it manufactures be flex-fuel cars, and I commend you on that. But I'm wondering, how many flex-fuel cars would you be producing if there was no CAFE credit provided? As you know, from 1993 through 2004, every flex fuel vehicle produced by a manufacturer provided a 1.2 mpg credit towards meeting CAFE standards. From 2005 through 2008, the credit is 0.9 mpg. Would Chrysler oppose efforts to eliminate that credit or is Chrysler just using the manufacture of these cars as a way to meet your CAFE obligations?

Question 2. Ms. Morrissett, Assistant Secretary Karsner just testified and he said that running E25 in gasoline burning cars (as they do in Brazil) is not really a technical hurdle, but is instead a question of whether car companies will allow customers to use higher ethanol blends without violating their engine warranty. So I ask you, what needs to be done for Chrysler to allow E20 or E25 to be used in its vehicles without breaking the engine warranty? Is Chrysler doing any of its own testing? Is Chrysler working with the Environmental Protection Agency and the Department of Energy to test these higher blends?

QUESTIONS FOR CHARLES DREVNA FROM SENATOR MENENDEZ

Question 1. Mr. Drevna, I want to ask you about the economics of the refining industry. While consumers are being forced to pay more than $3.00 a gallon for gasoline, oil companies continue to reap record profits. In 2005, refineries increased their prices 255 percent. And whenever there is a spike in gasoline prices experts seems to lay the short term blame at the feet of the refineries.

In your testimony you say that we should let the market decide the price of gasoline, but apparently the market is not working. Earlier this year many of the oil companies who are members of your organization blamed the expansion of biofuels for the high price of gasoline. How can this possibly make sense? Biofuels represent the first real competitor to petroleum in nearly a century. Why would this competition cause prices to rise?

Question 2. Isn't the real answer that since the late 1990's—mergers between the giant oil companies, like Exxon and Mobil, Chevron and Texaco and Conoco and Phillips—have left us with only 10 major oil companies controlling 80 percent of our domestic refining capacity?

Question 3. Isn't it the exercise of that market power that is one of the real causes of high gas prices and not the expansion of biofuels such as ethanol? Why else wouldn't these companies invest their record profits into new refineries or properly maintain existing refineries that are constantly breaking down?

QUESTION FOR PHILLIP LAMPERT AND JONATHON LEHMAN FROM SENATOR MENENDEZ

Question 1. Mr. Lambert, Mr. Lehman—This question is for both of you. What steps can we take to create better access to ethanol in the Northeast and specifically my home state of New Jersey? I noticed that an E85 pump was recently installed in Georgetown here in Washington DC, but the citizens of New Jersey are anxious to help reduce our dependence on oil and reduce our greenhouse gas emissions by using biofuels. Right now there are 129,000 cars in New Jersey that can run on E85, but people do not have access to pumps. I was pleased to support a provision in the Energy Bill we just passed here in the Senate to incentivize further market penetration of E85 pumps by establishing a pilot grant program to create renewable fuels corridors. But will this program be enough?

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