S. HRG. 108–300

CLEAN AIR ACT: ALTERNATIVE FUELS AND FUEL ADDITIVES

HEARING

BEFORE THE

SUBCOMMITTEE ON CLEAN AIR, CLIMATE CHANGE, AND NUCLEAR SAFETY

OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

ON

PROVISIONS OF THE CLEAN AIR ACT TO SUPPORT CLEAN-BURNING FUEL ALTERNATIVES

MARCH 20, 2003

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CLEAN AIR ACT: ALTERNATIVE FUELS AND FUEL ADDITIVES

THURSDAY, MARCH 20, 2003

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN AIR, CLIMATE CHANGE
AND NUCLEAR SAFETY,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:35 a.m. in room 406, Senate Dirksen Building, Hon. George V. Voinovich [chairman of the subcommittee] presiding.

Present: Senators Voinovich, Carper, Clinton, Thomas, Inhofe [ex officio], and Jeffords [ex officio].

OPENING STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

Senator VOINOVICH. One of the things I would like to make clear to my colleagues is that I am going to the very best that I can to get hearings started when we say we are going to start the hearings.

Before I begin my opening remarks, I would like to comment for a minute on the fact that the military action in Iraq that we had hoped and prayed to avoid is upon us. Some of my staff members wanted to know what this ribbon represented. That ribbon is a ribbon that I wore when I was Governor of Ohio during Desert Storm. It was a reminder to the people of Ohio that we had Ohioans overseas that were in harm's way; that we were thinking about them; we were praying for them; thanking them and their sacrifice and hoping that the war would end soon. Those are my sentiments today, and I am sure they are the same sentiments of everybody that is here in the room.

As it is the responsibility of the United States to finish the job begun by the U.N. and end the threat posed by Saddam Hussein's weapons of mass destruction, it is the responsibility of this body to look after the interests of the American people, which is why we are here today. It is no small irony that we are here today to discuss issues affecting our gasoline supply while our troops are engaged in the war on terror in the Middle East.

Our purpose in Iraq is to end a regime that risks becoming the arsenal of terrorism, which has defied the world for more than a decade, to liberate the Iraqi people from oppression and violence. However, our mere presence in that part of the world highlights the fact that we are entirely too dependent on oil that we import from the Middle East. The legislation that we are here to discuss

today, a compromise that will triple the amount of domestically produced ethanol used in America, is one essential tool in reducing our dependence on imported oil.

This legislation is even more important, given that just yesterday this body defeated a proposal to allow exploration of production of another major domestic source of energy, the Arctic National Wildlife Reserve.

It is interesting that if the Arctic National Wildlife Reserve produced the minimum that people expected, it would be the equivalent of what we are getting from Iraq. If it produced the maximum amount, it would be the equivalent of all the oil that we import from Saudi Arabia—just to put it in perspective.

As many of you know, the Senate overwhelmingly passed a fuels package in last year's energy bill that established a five billion gallon renewable fuel standard, repealed the Clean Air Act's oxygen requirement, and phased out the use of MTBE. Fortunately, that energy bill was killed in a House-Senate conference committee, not because of its merits, but because people that put partisan political bickering ahead of getting our energy policy done.

One of the things that is contributing to our sputtering economy is the fact that we do not have an energy policy. As I have often stated, we sorely need to develop a long overdue energy policy for our Nation. The Senate has a responsibility to develop a policy that harmonizes the needs of our economy and our environment. These are not competing needs. A sustainable environment is critical to a strong economy, and a sustainable economy is critical to providing the funding necessary to improve our environment. We need a policy that broadens our base of energy resources to create stability, guarantee reasonable prices, and protect America's security. It has to be a policy that will keep energy affordable. Finally, it has to be a policy that will not cripple the engines of commerce which fund the research that will yield environmental protection technologies for the future.

I believe that increasing our use of alternative and renewable fuels such as ethanol and biodiesel is a key element in our effort to construct a viable energy policy. During the last Congress, I, along with several of my colleagues, worked to develop an ethanol package that provides a tangible benefit for the American people. Passage of an ethanol bill will protect our national security, economy and our environment.

President Bush has stated repeatedly that energy security is a cornerstone for national security, and I agree. It is crucial that we become less dependent on foreign sources of oil and look more to domestic sources to meet our energy needs. Ethanol is an excellent domestic source. It is a clean-burning, home-grown, renewable fuel that we can rely upon for generations to come.

Ethanol is also good for our Nation's economy. Ohio is sixth in the Nation in terms of corn production and is among the highest in the Nation in putting ethanol into gas tanks. Over 40 percent of all gasoline used in Ohio contains ethanol. An increase in the use of ethanol across the Nation means an economic boost to thousands of farm families across my State. Currently, ethanol production provides 192,000 jobs and $4.5 billion of net income to farmers nationwide.

Creation of a five billion gallon renewable fuel standard by 2012 will create new markets for corn, reduce the U.S. trade deficit by $34.1 billion, create 214,000 new jobs, add $51 billion to net farm income, and reduce government subsidies to farmers by $5.9 billion, which will reduce the cost of the farm bill due to the creation of these new markets. Expanding the use of ethanol will also protect our environment by reducing auto emissions, which will mean cleaner air and improved public health.

Earlier this year, along with several of my colleagues, I introduced legislation that is identical to the ethanol title passed by the Senate in last year's comprehensive energy bill. I commented at the time that the legislation was a good starting point for discussions in this Congress on these issues. It is my hope and expectation that we will markup a fuels package similar to that legislation in this committee and take it to the floor. It is crucial that we move this important legislation, I think, immediately. These issues have been on the front of us for a long time—far too long. Now, we have everybody in the same room at the same time and agreeing on the same legislation, by golly, we ought to move it.

I thank Chairman Inhofe for his leadership in this committee. I look forward to working with him, as well as Senator Carper in the minority on these issues as we prepare to mark up legislation that makes sense for our energy security, environment and economy this year.

Our witnesses on the first panel today include Mr. Jeffrey Holmstead, the Assistant Administrator for Air Quality at the Environmental Protection Agency; Mr. David Garman, the Assistant Secretary for Renewable Energy and Energy Efficiency; and Mr. Guy Caruso, Director of the Energy Information Administration at the Department of Energy.

In our second panel, we will hear from various witnesses who represent a wide variety of stakeholder interests.

I would like to thank these witnesses and everyone else who came to the table and worked together on reaching a compromise on these issues that we reached last year. It was a monumental effort; something that we all were very proud of. I really believe that this is the best way, and frankly the only way to get things done in this town. I wish that it happened more often.

I look forward to hearing the testimony from our witnesses and I thank them for being here today.

I would now like to call on the Chairman of our committee, Senator Inhofe.

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. Thank you, Mr. Chairman.

When I chaired this subcommittee in October 1999, I can remember we had a hearing on the EPA's blue ribbon panel findings on the fuel additive MTBE. In that hearing, I said, and I am quoting now, "The safeguarding of the nationwide supply and distribution of gasoline must be the key consideration to any action that is taken to address MTBE." And it could not be any truer than it is today.

As you have said, Mr. Chairman, I firmly believe that what we are dealing with here is a national security issue. This goes all the way back to the early 1980's for me, when I was critical of the Reagan Administration for not having an energy policy that had some type of a cornerstone that would have a minimum of our reliance upon foreign countries for our ability to fight a war. At that time, we were 36 percent dependent; today, we are 57 percent dependent. Any deal that is part of the energy bill should reduce our dependence on countries like Iraq, and we should certainly be sensitive to that today.

With that in mind, there are some fundamental concerns I have with the fuels deal that was a part of the energy bill last year. First, the impact of the fuels deal on small refineries. While I understand large refineries, many of them, are happy with the deal, I know the small refineries were unhappy with the deal. Right now, we are at 100 percent refining capacity. Anything that we do that will change this is going to have a direct effect on the cost to the ultimate consumer.

Second, the potential impacts of the fuels deal on the supply, and therefore the price of fuel to the American people. I think we have talked about it. We know that it has to be a major consideration.

Third, the agreement last year is that the ethanol mandate is to be phased in over 10 years. Mr. Chairman, I want to make sure that agreement stands and that no one tries to accelerate that.

Fourth, as a matter of fairness, I think we need to take a close look at the safe harbors for congressionally mandated products such as MTBE and ethanol. When the government comes along and mandates the use of MTBE, so the market responds to that, and we have MTBE, and then government comes along and mandates we do away with the MTBE, implying that there is a danger out there—that subjects those very individuals that were responding to our demands to start with to frivolous lawsuits. So I believe that we should have some type of liability protection in there, and I will work to do that.

Fifth, the impacts of the fuels deal on the Highway Trust Fund. Right now, we are dealing with the budget. In fact, I am going to be supporting a budget that is going to increase the amount of money that will be there for our roads, our infrastructure, our highways, our bridges. The amount that is in the budget that we are considering now is not adequate. What I have done, Mr. Chairman, and I am sure that you will be interested in this, is I have figured out a way that we could reach that $255 billion over a 6-year period, No. 1, without affecting the tax reductions; and No. 2, without having an increase in the deficit. So I have a broad array of funding capabilities that we can choose from, and I believe that this is something that we are going to have to do.

So with those comments in mind, I regret to say, Mr. Chairman, that we have Mr. Garman's boss in a hearing. I thought since we had Senator Warner as Chairman of the Senate Armed Services Committee and me as the Chairman of this committee that we would not have our meetings coinciding with each other, because we are both on both committees. That did not work out that way, so we do have the Secretary of Energy before our committee, which

is starting at the same time, so I have to be attending that meeting.

Thank you, Mr. Chairman.

Senator VOINOVICH. Thank you, Senator Inhofe.

Senator Carper?

OPENING STATEMENT OF HON. THOMAS R. CARPER, U.S. SENATOR FROM THE STATE OF DELAWARE

Senator CARPER. Thank you, Mr. Chairman.

To our guests, welcome. Thanks for coming by and joining us today.

We all know that the fighting has begun in the Middle East and we hope for a quick conclusion and hopefully one that brings minimal casualties to both sides—to our side and to the civilian population of Iraq.

This hearing today is on MTBE and whether we ought to phase it out or not. I would just say as an adjunct, there is a lot of interest in the Congress. In fact, if you look at the energy bill we passed last year, there is a whole lot of interest in finding other ways to not only reduce our dependence on foreign oil through ethanol, biodiesel fuels, but also to clean up our air, if we are smart, and reduce our reliance on imported oil and reduce our trade deficit.

In the Delmarva peninsula, which I am privileged to represent, we raised a lot of corn and a lot of soybeans. Some interesting stuff is going on, Mr. Chairman, involving one of our major corporate citizens in Delaware. The DuPont Company has won an $18 million Energy Department grant. They will be using that Energy Department grant to create a refinery—I will call it a bio-refinery—that we believe when it is done will be able to create ethanol out of corn so much more efficiently that it will no longer require a tax subsidy to be competitive with gasoline. It is a very promising, creative approach. It has some implications for MTBE utilization going forward.

That is the work that is out there. We also are doing a fair amount with biodiesel. We have just about all of our Delaware government vehicles that are diesel powered these days being run by a combination of soybean oil and diesel fuel. The results are quite good in terms of performance and in terms of what happens to the environment. It is very positive as well. It smells like popcorn, which is always a plus, too.

The other thing I would say just as an observation as we get into this hearing, the idea of using biodiesel fuels—over in Europe, last year about 40 percent of the vehicles that were sold were diesel powered—40 percent. In this country, it was like four tenths of 1 percent. Either we are a lot smarter than they are, or they have figured something out that we have not. As we go forward, the ability to harness clean diesel, not those old diesels that we grew up with back in the 1960's and 1970's—but clean diesel, and vehicles that can meet our tier two requirements, and use some of this biodiesel fuel that is being created, would do good things for the environment, and certainly do good things for reducing greenhouse gas emissions, and might even help our farmers a little bit as well.

That is my statement, Mr. Chairman. Thank you for letting me give it.

Welcome again to our witnesses.

Senator VOINOVICH. We are very fortunate to have with us Mr. Jeffrey Holmstead—Jeff, we are glad to hear from you this morning; and Mr. Garman, who is the Assistant Secretary for Renewable Energy, U.S. Department of Energy. I understand that Mary Hutzler, Director of the Office of Integrated Analysis and Forecasting of the EIA, is here substituting for Mr. Caruso. Is that correct? OK. We look forward to your testimony, and we will begin.

Senator CARPER. Before our witnesses begin, I have four hearings going today and they just sandwiched a leadership meeting in at 10:30 that I am going to attend. So if I am in and out, I apologize. I mean no disrespect, but that is the way this place works. Thank you.

Senator VOINOVICH. The fact of the matter is that we could all be in three places at the same time and justify each one of them.

Senator CARPER. Human cloning is getting to be more interesting.

[Laughter.]

Senator VOINOVICH. Before we begin, and I did not forget, the Chairman asked me to insert in the record the testimony of the National Association of Convenience Stores and the Society of Independent Gasoline Marketers of America. Without objection, those statements will be entered into the record.

[The referenced documents follow:]

Senator VOINOVICH. Mr. Holmstead?

STATEMENT OF HON. JEFFREY R. HOLMSTEAD, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. HOLMSTEAD. Thank you, Mr. Chairman and Senator Carper and the other members of the subcommittee who I know may be in and out, for the invitation to appear today.

I also apologize in advance that I will need to leave the hearing early this morning. I do not have four other hearings, but as I hope you have been informed, I was previously committed to appear before our Appropriations Committee, so I will need to leave by about 10:15. Again, I apologize for that.

Senator VOINOVICH. I understand your priorities. Show me the money.

[Laughter.]

Mr. HOLMSTEAD. Show me the money. I am speechless.

I do appreciate the opportunity to be here this morning and to discuss the vital role that cleaner-burning gasoline plays in improving America's air quality. Specifically, I would like to comment this morning on the gasoline provisions in the legislation introduced by Senator Daschle and cosponsored by the distinguished Chairman of this subcommittee.

The Bush Administration supported and continues to support the fuel provisions of the energy legislation that passed the Senate last year. That legislation would have maintained the environmental benefits of the reformulated gasoline program, known as the RFG program, prevented backsliding in air toxics, removed the RFG oxygenate mandate, imposed a Federal phase-out of MTBE, and created a national renewable fuels standard. The Administration

wants to reaffirm its support of legislation such as S. 385 that is consistent with this approach.

As I think you both know, unhealthy smog levels are a significant concern in this country, notwithstanding the progress that we have made over the last decade. There are still about 50 million people living in counties with air quality that does not mean the 1-hour ozone standard. Since the RFG program began 8 years ago, it has resulted in combined annual reductions of volatile organic compounds known as VOCs and NOx of more than 105,000 tons, and at least 24,000 tons of reductions in toxics air pollution. As I think you know, VOCs and NOx are pollutants which react in the atmosphere to form ozone or smog.

Ambient air monitoring data from the first year of the RFG program, which was 1995, indicate that RFG also had a significantly positive impact on reducing air toxic emissions. One of the major air toxics controlled by the RFG program is benzine, a known human carcinogen. The benzine levels at air monitors in 1995 in RFG areas showed the most dramatic declines, with a median reduction of 38 percent in concentrations of benzine from the previous year, which is very significant over a 1-year time period.

The emission reductions that can be attributed to the RFG program are roughly equivalent to taking 16 million cars off the road altogether, and we estimate that about 75 million people are breathing cleaner air because of the RFG program.

Now, let me just address if I can for a moment the issue of MTBE. MTBE is a high-quality blending component of gasoline, but significant concern continues about its contamination of drinking water in many parts of the country. Most MTBE contamination is the result of leaks from fuel storage tanks, but some contamination has resulted from fuel spills. We now know that MTBE if leaked or spilled can contaminate water supplies more readily than other components of gasoline. Public concern has been focused on the issues of taste and odor associated with MTBE contamination.

Current data on MTBE in ground and surface waters indicates numerous detections of MTBE at low levels. Data from the United States Geological Survey indicates a strong relationship between MTBE use as a fuel additive in an area and finding detections of MTBE in ground and surface water.

While EPA and States have made significant strides to improve the effectiveness of the Leaking Underground Storage Tank Program, MTBE contamination groundwater persists. As a result of the existing MTBE contamination and the potential for future occurrences, 17 States have taken action to ban the use of MTBE as a gasoline additive in the future. Over the next year, MTBE bans go into effect in the States of California, Connecticut and New York.

At the Federal level, EPA published an advance notice of proposed rulemaking in the year 2000 requesting comments on a possible phase-down or phase-out of MTBE from gasoline under the Toxic Substances Control Act, known as TSCA. TSCA is the only administrative mechanism available to EPA for addressing the issue of MTBE use, but the TSCA process is cumbersome and lengthy at best. We believe that legislation crafted to address the

future use of MTBE would be a more timely and effective way of addressing public concerns.

Because actions taken by individual States to control or ban the use of MTBE as a fuel additive are not uniform or coordinated, they can create concerns about the fuel distribution network. For example, when the MTBE bans take effect in less than 12 months in Connecticut and New York, fuel providers will not be permitted to supply MTBE-containing gasoline in those two States, yet neighboring States in the Northeast will continue to allow MTBE in gasoline. Such a patchwork approach of State requirements will likely complicate the distribution of gasoline in that part of the country. A significant portion of the gasoline supplied to the Northeast comes through pipelines from the Gulf region, but variations in State laws affecting gasoline could potentially lead to supply constraints as refiners and distributors struggle to ship complying fuel to individual States.

The provisions of S. 385 would help to address this situation in several ways. The bill would, one, maintain the air quality benefits of the Clean Fuels Program, such as RFG; two, remove the 2 percent oxygenate requirement under the RFG program; three, phase-out the future use of MTBE across the Nation, while allowing sufficient lead time for refiners and MTBE producers to switch production to other gasoline blend stocks; and four, implement a renewable fuel standard that encourages positive life cycle renewability through the use of domestically produced renewable fuels, through a national credit averaging and trading program.

The Administration supports this carefully balanced package of provisions. We and other Federal agencies are committed to working with Congress to explore ways to maintain or enhance environmental benefits of the Clean Fuels Program, while exploring ways to increase the flexibility of the fuels distribution infrastructure, improve fungibility, and provide added gasoline market liquidity. We stand ready to work with this subcommittee as it seeks to enact fuels legislation such as S. 385.

Thank you again for the opportunity to appear before you today, and if I am able to before I leave, I would be pleased to answer any questions you may have.

Senator VOINOVICH. I want to make sure that I—and this is a question for all three of the witnesses. It is the issue of phasing out MTBE and the impact it will have, as you well know. EIA estimates the current MTBE phase-out language could add as much as 10 cents to every gallon of gas sold, if the environmental impacts of MTBE are serious and need to be addressed. What I am suggesting, Mr. Holmstead, is that is there some way that you can sit down and work on this and report back to me with an Administration proposal on a workable MTBE phase-out that will not add a dime of gasoline prices and will still protect our environment. This is an issue that we have to get resolved that is still hanging out there. It would be really great if you folks to get together and come back with some ideas on how we could deal with this problem.

Mr. HOLMSTEAD. If I can say, I do not know of that specific estimate. I think it would be worthwhile for our folks to work with EIA, and we have a very good relationship with them, to determine whether we think there would be that sort of a price impact. I

think, as I said in my testimony, it is important to look at this overall package of things that I think you and others have carefully crafted, which addresses the timing of the MTBE phase-out in relationship to the renewable fuels standard and other things. I think all of us are a little concerned about anything that would upset that balance. But we will respond to your request and work with EIA to get back to you on that issue.

Mr. VOINOVICH. Thank you.

Mr. Garman?

STATEMENT OF HON. DAVID GARMAN, ASSISTANT SECRETARY FOR RENEWABLE ENERGY, U.S. DEPARTMENT OF ENERGY

Mr. GARMAN. Thank you, Mr. Chairman. I apologize for our late arrival. Our letter of invitation had indicated this hearing was to start at 10 o'clock a.m., so we were a little late.

Mr. VOINOVICH. We could not wait.

[Laughter.]

Mr. GARMAN. Nevertheless, our apologies to you for that.

Knowing my full testimony is in the record, I will be brief. The Administration supports legislation such as S. 385, designed to achieve a five billion gallon annual average renewable fuel use target by the year 2012. Getting to this level of production and beyond will be a challenge. The U.S. ethanol industry produced a little over two billion gallons in 2002, and the extended capacity needed to reach the five billion gallon target will depend on grains, primarily corn, at least in the near term.

But there are limits to the amount of ethanol that can be produced from grain before encountering secondary effects such as impacts on food and feed markets and the sustainability of production on marginal agricultural lands. We want renewables to play an even greater role in displacing some of the roughly 136 billion gallons of gasoline and 33 billion gallons of highway diesel we use each year, so we have to look beyond grain-based alcohol.

S. 385 explicitly recognizes the need for new technologies through provisions that provide extra credits for ethanol produced from cellulosic materials and the Department of Energy has been focusing on research and development programs to develop cellulosic-based ethanol that could be produced from many types of agricultural resources, residues, and energy crops. There are about 500 million to 600 million tons of biomass residue and waste generated each year. Much of this could be used for ethanol production if affordable methods of collection, transportation, and conversion are developed.

Success in converting these cellulosic materials into ethanol will depend in part on the continued development of enzymes that break down the cellulosic materials into shorter chains of fermentable sugars. We have demonstrated the ability to do this, but it is a greater expense and difficulty than starch-based approaches. So our R&D program will continue to bring down the costs and the complexity of cellulosic conversion.

Our approach to using the Nation's supply of biomass is not limited to liquid fuels such as ethanol and biodiesel. Biomass can be converted to a multitude of products for everyday use. In fact, there are very few products that are made today from a petroleum base

that cannot also be produced by biomass. Paints, inks, adhesives, plastics, fibers and a variety of value-added products and chemicals currently produced from oil can be produced from biomass.

I have a couple of examples here. This is a polymer of polylactic acid that was produced from corn in Nebraska. These polymers can be used for any kind of plastic application—milk bottles, soda bottles—and they have the ancillary benefit of products made from this plastic break down in landfills in a very, very short time. Here is a fabric that is made completely of polylactic acid made from corn.

So we are thinking beyond ethanol to a full range of power, products and liquid fuels produced from biomass and achieving economically competitive production. Focusing only on producing fuels or only on producing products or only on producing power is extremely difficult. But if one pursues an integrated approach to the production of liquid fuels and power and products simultaneously in an integrated bio-refinery, then process synergies can improve the economics of production significantly.

We are even exploring how to make biomass into hydrogen, and that linkage to hydrogen is one that I would like to stress in particular. As this subcommittee is aware, we have made tremendous progress in reducing pollutant emissions from our cars and trucks, as well as stationary power sources, but we ultimately want a transportation system that is free of foreign energy supplies and that is also emissions-free, and we want to preserve the freedom of consumers to purchase the kind of cars and trucks they want to drive. That is the concept behind the FreedomCar Partnership and the Hydrogen Fuel Initiative that the President announced during his State of the Union.

Producing the hydrogen necessary for the President's vision is going to require a variety of domestic feed stocks, and biomass can play a critical role in this. We believe that the Nation's energy sector may be able to produce from the 500 million to 600 million metric tons of biomass waste we produce each year as much as 40 million tons of hydrogen. That is enough to power 100 million fuel cell vehicles. In so doing, we will not only be producing a clean domestic energy carrier to power emission-free cars, we will also be helping to reverse the economic fortunes of rural America.

With that, I would be pleased to answer any questions that you may have, either today or in the future. Accompanying me is Mary Hutzler who does not have testimony, but is from the Energy Information Administration and can answer questions, particularly related to price and supply.

Thank you, Mr. Chairman, and members of the committee.

Senator VOINOVICH. Thank you very much.

Ms. Hutzler, would you like to make any comments at all?

Ms. HUTZLER. No. I am here to answer any questions and to help Mr. Garman in terms of our price impacts and our supply forecasts.

Mr. CARPER. I don't know if you noticed, Mr. Chairman, her lips moving when he spoke. I don't know if that always happens.

Just kidding.

[Laughter.]

Mr. VOINOVICH. Mr. Jeffords, do you want to make any comments before we ask the witnesses questions, understanding that Mr. Holmstead has got an obligation?

Mr. JEFFORDS. Certainly, I will be very quick. I think it is about 15 seconds that will suffice.

We all know, we are all thinking about the war today, and certainly we all hope this is completed quickly and without loss of life.

I understand the need to carry on the business of the Nation. That is why we are here today. I think renewable fuels and renewable energy is an important part of our Nation's national security. We increase our national security by increasing the use of renewable fuels. That is all I have to say. I will have some questions later.

Mr. VOINOVICH. Mr. Holmstead, you have looked at S. 385. If you repeal the oxygenate requirement, are the backsliding provisions adequate to protect air quality?

Mr. HOLMSTEAD. Yes, we believe that they definitely are. There is an antibacksliding on the air toxic side and the other benefits of the RFG program would be preserved under the legislation as it is now crafted.

Mr. VOINOVICH. How do you go about doing that—the backsliding? What are the things that we are going to do to make sure that that does not happen?

Mr. HOLMSTEAD. Most of the air toxics that come from tailpipes of cars have to do with the constituents in the fuel, particularly the aromatics, the benzine, the toluene. The legislation would explicitly cap those at today's level so they could not be any worse on the air toxic side.

On the other tailpipe emissions that we look at—things like hydrocarbons, NOx, CO—there would be specific performance standards that we now know can be met in another way, other than the oxygenate standard. So we are fully confident that the air quality benefits that we currently get from the RFG program will clearly be maintained under this legislation.

Mr. VOINOVICH. So what you are saying is that if you eliminate the oxygenate requirement, that it can be compensated with using reformulated gas?

Mr. HOLMSTEAD. Yes, that is basically correct. In reformulated gas right now under the current Clean Air Act, socalled RFG has to contain at least 2 percent by weight of an oxygenate. That requirement would effectively be replaced by this national renewable fuels standard. In addition to that, there would be explicit performance standards for the fuel. So that combination would . . .

Mr. VOINOVICH. When you have done your calculation, have you taken into consideration the new ambient air standards that are going to be going in for ozone and particulate matter?

Mr. HOLMSTEAD. That is something we certainly look at. One of the benefits, we think, of this legislation is that it would make RFG more attractive to more parts of the country. As you probably know, the way the law works today areas can opt in. They can choose to participate in the RFG program. It appears that a number of areas have chosen not to do that because of concerns about MTBE and groundwater. So if anything, this will make the RFG

program more attractive and help areas come into attainment with the new national ambient air quality standards.

Mr. VOINOVICH. One of the questions that I have is that I recall when I was Governor, that we had to make a decision on whether we were going to use RFG in the Cincinnati area and some other areas. We went to emissions testing as the alternative. One of the things that I think that you ought to consider is just, they have done some research work on emissions testing to see how valid it is. Of course, some are arguing that with the newer automobiles that it is not needed and there is some controversy there.

But there are some States that are thinking about moving away from emissions testing, frankly not understanding that they are going to be having to achieve higher standards in the next two or 3 years.

Mr. HOLMSTEAD. Yes, we will be designating new areas in April of 2004, so it is about a year from now.

Mr. VOINOVICH. I think that that is something that EPA ought to be getting out across the country, informing Governors and their environmental protection agencies that these things are coming down—and also I would say to write to the leaders of the legislative bodies. Too often in this country, you write to the Governor and sometimes he does not communicate that information to his legislative body. So I think you ought to roll them into it.

The other question I have got is, if we are going to go to more reformulated gasoline, one of the problems that we had a couple of years ago in terms of gas supply was the fact that there were so many varieties of RFG that were out there that we had a lack of supply and so on. It all came together and we had a real crisis in terms of price at that time. Is anybody anticipating this in terms of more use of that, and do we have the capacity to take care of it? We have not built a new refinery in 25 years. Are we ready for this?

Mr. HOLMSTEAD. That has been a significant issue, as you well know. In fact, at the request of President Bush, we did a big report about a year ago on the socalled boutique fuels issue. One of the reasons why we are very supportive of this legislation is because we think that this would help address that issue. As I mentioned a little bit in my opening statement, there are a number of reasons why these different types of fuels have proliferated throughout the country, but one of them is because of concern about MTBE contamination of groundwater; people concerned about the oxygenate requirement. By replacing that with this renewable fuels standard, the RFS, we think it will significantly reduce the concerns about proliferation of boutique fuels.

So we understand that the markets are fairly tight and we will certainly work with Dave and Mary to make sure that we think through all those issues. But we are confident that the compromise that you all have crafted will significantly reduce the pressure toward boutique fuels.

Mr. VOINOVICH. Thank you.

Senator Carper?

Senator CARPER. Thank you, Mr. Chairman.

I have a question before you hit the road, Mr. Holmstead. It is a pretty quick one. Has EPA . . .

Mr. HOLMSTEAD. Depending on the question, I may need to leave a little early.

[Laughter.]

Senator CARPER. You will want to stay for this one.

Has the EPA or any other authoritative body done a comprehensive analysis, to your knowledge, on the environmental impacts of a national ethanol mandate to use ethanol? Are you aware of any?

Mr. HOLMSTEAD. Yes, we actually have looked at that issue. As you know, the mandate would not be specifically on ethanol, it would be on renewables. We anticipate ethanol would satisfy the largest part of that. As is always the case, there are some tradeoffs. We know that we would get significant reductions in CO emissions. There would be significant reductions in air toxics emissions. The one concern has been that in certain areas of the country, it could potentially raise the volatility of the fuel, known as the revapor pressure. We believe, though, that the performance requirements in the gasoline will address that. So we think that on the whole this will be at least as good as, if not better than the current program. But that is something that we have looked at pretty carefully. We would be happy to provide you with more information, if you would like, on that.

Senator CARPER. I would like that very much.

Let me just ask, are the maybe unintended or unforeseen consequences of national mandates part of the impetus for legislation such as S. 385?

Mr. HOLMSTEAD. I think that is fair to say. We have seen consequences that nobody expected back in 1990 with the Renewable Fuels Program, and in particular the oxygenate mandate. One of the appeals of this program is that it allows much more flexibility for the ethanol or the other renewable fuels to be used wherever it can be done the most efficiently. So with the averaging and the banking provisions, we would anticipate there would be greater use of ethanols nearer the sources of ethanol. We just do not have that sort of flexibility under the current program, where every gallon of gasoline has to have 2 percent oxygenate in it.

So even though this is a fairly large amount, we think with the banking and trading provisions that you all have designed into the bill that it would really address many of those issues. But you are correct to say that there have been some unanticipated consequences.

Senator CARPER. Can I reserve my time? Senator Jeffords, Mr. Holmstead has to leave us to be at another hearing. Do you want to ask him a question?

Senator JEFFORDS. I have no questions.

Senator CARPER. I don't know if this is the time that we want to excuse Mr. Holmstead. What do you think?

Senator VOINOVICH. It is fine with me.

Mr. HOLMSTEAD. Thank you very much. I am going to go see if I can get some money from the Appropriations Committee. I appreciate your——

Senator CARPER. Get some for me while you are at it.

[Laughter.]

Senator CARPER. Mr. Chairman, if I could, I have just another question or two for Mr. Garman and Ms. Hutzler as well. Let me

just ask, has the EPA or the Department of Energy connected any kind of analysis of NOx emissions that would result if we established a requirement for biodiesel? Maybe a five or ten or 20 percent blend to be used nationwide?

Mr. GARMAN. We have done some preliminary analysis that shows that a 20 percent blend of biodiesel known as B–20 does slightly increase NOx emissions, even though particulate matter, carbon monoxide and air toxics were all driven down. But I think it is also fair to say that the testing we did was run on older engines, and not the modern diesel engines with improved emissions controls. So we think it is doubtful that the use of biodiesel in percentages of up to 20 percent would have a measurable impact on air quality. At the request of some of the Members in the other body, I want to launch a new round of testing on that question, using the most modern diesel engines that we have available.

Senator CARPER. In the testing was done using Del DOT vehicles, Delaware Department of Transportation vehicles in our State, with the B–20 fuel, 20 percent soybean oil with the diesel, we have had good results on emissions, with everything except NOx. We have seen a little uptick in the NOx. I have actually talked to the folks at DuPont, some of their top scientists, about whether or not they can—you know, they reengineer soybean and corn all the time. I have asked them if they could think about reengineering a different kind of soybean that would address NOx. If I had suggested that to somebody five or 10 years ago, they would probably have thought I was nuts. They may still think that, but at least no one laughed out loud.

One more question for Mr. Garman and maybe Ms. Hutzler, and that is I think the President and maybe Secretary Abraham have described their plans to move us toward a hydrogen economy. I know the President did in his State of the Union. I have talked a little bit with your secretary about that as well. You talked a little bit about this in your earlier statements, but just give us a little bit more on how you might explain establishing a renewable fuel standard for ethanol or biodiesel and how does that fit into a hydrogen strategy? Does it help or does it hurt our progress?

Mr. GARMAN. It helps because some of the same work that we would do, particularly the work on enzymes to break down cellulosic material to make products such as these or ethanol, is precisely the same technology we would use to make synthesis gas from biomass, which is what we would derive hydrogen from. So nothing in this bill precludes or hurts or inhibits our movement toward that hydrogen future in any way.

Plus, the timeframe for that shift is admittedly down the road a ways. We envision for automakers and hydrogen fuel suppliers to even be in a position to make a commercialization decision by 2015, and we do not envision seeing mass market penetration of these vehicles prior to 2020.

Senator CARPER. Mr. Hutzler, do you want to correct anything he said?

[Laughter.]

Ms. HUTZLER. No.

Senator CARPER. Did he do OK? All right.

Mr. Chairman, thanks. I am going to slip out now, but we appreciate very much your attendance and your comments.

Senator VOINOVICH. Senator Jeffords?

Senator JEFFORDS. I appreciate the witnesses being here today to give us testimony on renewable fuels. Mr. Garman, I know that you also have considerable expertise in the use of renewable energy resources such as wind, biomass and solar power for the production of electricity. As you know, Mr. Garman, last session as a part of its comprehensive energy bill, passed a renewable portfolio standard provision that would have required that utilities ensure that by the year 2020, 10 percent of all electricity sold for retail consumption be reduced from renewable sources. This 10 percent standard was actually fairly modest, in my mind. The Department of Energy's own Energy Information Administration has found that even a more ambitious requirement of 20 percent of renewable energy production by the year 2020 will minimally impact consumer electricity costs.

The President's national energy policy states, quote, "renewable energy can help provide for our future needs by harnessing abundant, naturally occurring sources of energy such as the sun and the wind, geothermal heat and biomass. Renewable and alternative energy supplies not only help diversify our energy portfolio, they do so with few adverse environmental consequences. Continued growth of renewable energy will continue to be important to deliver larger supplies of clean domestic power for America's growing industry."

Given the tremendous benefits of renewable energy, including the benefits of diversifying our energy resources in these times of terrorist threats, can you give me your assurance that the Administration will lend its support to this Congress for a strong renewable portfolio standard?

Mr. GARMAN. I am sorry, Senator, the Administration does not support a specified national renewable portfolio standard at this time. We do, however, note that individual States have been adopting renewable portfolio standards. Texas adopted one when President Bush was Governor of that State.

The reason that this approach is appealing to us is that there are differences in the amount of renewable resources available in different regions of the country. I have actually had some advocates of certain renewables, geothermal in particular, say a national renewable energy portfolio standard might actually hurt them because if they are in a State such as Nevada or California with a tremendous geothermal resource, they might be able to exceed a national standard that might be put in place.

So there is a lot of thinking that suggests that letting the States match their own renewable portfolio requirement to the resources that they have in those States might be a good approach to take because it would diminish the regional inequities that might arise with a national renewable portfolio standard.

Having said that, we will obviously work with the Congress as it attempts to move toward a comprehensive energy bill and be open minded on whatever arises from that process.

Senator JEFFORDS. I would hope so because I look at the future and we could do so much if we put more emphasis on those utiliza-

tions, and that we should do that. Just not having real emphasis on it disturbs me.

To date, 13 States have implemented various types of State renewable portfolio standards. This includes Texas, where we just talked about. Texas is now one of the largest renewable energy sources in the United States. These State programs have demonstrated the effectiveness of renewable portfolio standards and estimates are that the States' RPS laws will provide for over 12,000 megawatts of new and renewable power by 2012, an increase of 90 percent over the total of the recent time we measured.

However, State standards alone cannot address the reality of regional electricity generation. Electrons do not stop at the borders, nor can the State standards alone have the impact on national economics or produce the wide scale of environmental effects. Wouldn't you agree that the Federal RPS would provide benefits that individual State RPS's alone cannot deliver?

Mr. GARMAN. Again, it would provide some economy of scale, but it also could provide some regional inequities, particularly in those areas of the country that might not have a renewable energy resource. It also provides a perplexing situation that arises in the context of transmission. For example, there is a tremendous amount of wind resource in the Dakotas that is virtually untapped. There are tens of thousands of megawatts of potential there, but less than 100 or so that has actually been tapped in North Dakota.

The reason is because of transmission constraints. Wind is a great example of where the resource, the wind, tends to blow in areas that are pretty distant from population and load centers, which is why in our R&D approach we are trying to, in essence, provide the kind of wind turban technology that can be economically successful in areas with much lower wind speeds—that would enable us to move the renewable wind generation closer to population and load centers and diminish the difficulties we have with transmission.

So we think a multifaceted approach that embodies advancing the technology has been tremendously successful. Wind generation today in the highest wind-speed areas is around four to six cents a kilowatt hour at the point of generation. That is down from 20 cents a kilowatt hour a decade ago. So we are making great progress in bringing down those costs to make them competitive.

Senator JEFFORDS. Thank you. That is an area of great interest to me, as you know. Thank you.

Senator VOINOVICH. Senator Thomas, would you like to make a statement before you ask questions?

Senator THOMAS. Thank you, Mr. Chairman. I am sorry I was tied up in another meeting before. At any rate, welcome. I am very interested in what you are doing here, Mr. Chairman, in terms of this hearing.

Interestingly enough, however, I have just come from a budget discussion and also from an energy discussion. So I guess we have a real challenge to talk about the things that the Senator from Vermont feels so strongly about, and at the same time talk about the fact that we have unprecedented prices now for gas—very high; where we have not had any increases in refinery capacity for a number of years. We need to talk about both of these things. We

need to talk about where we are going in the future, certainly. At the same time, many of the things we are talking about here are not going to happen right away, and we have some other things that need to be done.

So what we are doing here, what impact it has on refineries and remodeling and increasing capacity I think has to be an issue that we talk about. I just came from the Budget Committee where they are talking about not having enough money in the highway fund, partly because these new fuels and even ethanol does not pay into the highway fund the same as it might.

So I think what we have to do as we look forward to these things is to get some balance to deal with today's needs, as well as the projections for the future.

So I know, Mr. Chairman, that you do that in reality. I just wanted to make that point and urge you to continue with what you are doing. I think it is good. We also have to deal with today's problems and the ones in the short term, and some of them are in conflict, quite frankly.

Thank you.

Senator VOINOVICH. Thank you.

One of the questions that I have, and it is a tactical issue and if you were willing to comment on it, I would appreciate it. We worked very hard to get a compromise on this piece of legislation. It was almost miraculous, and particularly difficult for me because I have a lot of oil people and I have a lot of corn people. Somehow the oil and the corn got together and worked something out, and you folks were helpful in advising and so on.

We are going to have an energy bill on the floor. I am not sure when. What is the urgency in terms of getting this passed? I know there are a lot of States now that they have got the right that the States themselves can eliminate MTBE. Is that correct?

Mr. GARMAN. Yes, and several States have done so.

Senator VOINOVICH. I do not know how many more are going to be doing it, but from a tactical point of view if we have got unanimity, and I know there is a little tweaking here. The Chairman of this committee has got some problems, but if we could work those out, how would you feel about us moving this out as quickly as we can and get it done?

Mr. GARMAN. There is value in getting a national approach on the MTBE phase-out. I know that this was a carefully worked out package, and commend you for your ability to put such a compromise together—a very difficult compromise. We support the package, even though there may be elements that may give us pause from time to time, that is the nature of compromise.

We hope that this will be an element in a comprehensive energy bill that, if you will, helps keep the pressure to pass a comprehensive energy bill sooner in total, rather than later. And it would be our hope that it can be a part of that comprehensive approach, but I would not want to give advice to you all on the tactics. At the end of the day, we would like to see this package passed, and we will have to see how progress on the energy bill—we hope progress on the energy bill happens very quickly, too, and that the whole package can move ahead together.

Senator VOINOVICH. I think the interesting thing about it is in this particular area that there was a good bipartisan support of it. So much of what we are doing around here is not that way. Your opinion is that you would like to see it be part of the overall package.

Mr. GARMAN. That is my understanding of our position. We would prefer to see the package move together in a comprehensive bill. If elements of a comprehensive bill start to get split apart, then of course the enthusiasm for the bill as a whole tends to wane.

Senator VOINOVICH. I would like a statement from you folks on why is it important that we move forward with this, and how urgent is it that we move forward with it. There are a lot of people that are looking at doing things out there right now, but they are not sure what they should be doing because we have not passed this legislation, and they are I am sure watching. It is going to happen or isn't it? So I would really like your opinion on that.

Mr. GARMAN. Yes, sir. We have unequivocal support for this legislation and the President's strong support that we move ahead with comprehensive energy legislation at the earliest possible date. I will elaborate on that in writing for the committee with the proper people making the elaboration, above my pay grade.

Senator VOINOVICH. One last question: I like to refer to Akron, Ohio as the polymer capital of the world. Could you tell me if the University of Akron, or any of our companies in the Akron area, are in touch with you on this work you are doing with using corn for polymers—the product that you just showed us?

Mr. GARMAN. Specifically, we have just this week put out a solicitation. In other words, we put some money on the table inviting private sector entities and consortiums of private sectors and universities and others to work with us on this bio-refinery concept, including polymerization of biomass feed stocks. If your staff can alert us to some of the individuals in Akron who are active in this area, we will endeavor to make sure they are aware of this particular opportunity that they should now work with us on this solicitation.

[Information submitted for the record follows:]

EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF MANAGEMENT AND BUDGET

STATEMENT OF ADMINISTRATION POLICY ON S. 14—ENERGY POLICY ACT OF 2003

The Administration commends the Senate for taking a step toward comprehensive and balanced national energy legislation by including in S. 14 many provisions that are largely consistent with the Administration's National Energy Policy. The bill would improve the Nation's energy security by diversifying our energy sources and reducing energy consumption through greater conservation, while expanding new technology to reduce pollution and increase energy efficiency.

The Administration strongly supports modernizing the Nation's antiquated electricity laws and increasing the amount, efficiency, and reliability of our electricity supply. We commend the Senate for long overdue provisions in its bill to accomplish these goals. In particular, the Administration strongly supports provisions to provide open access for all generators to the transmission grid, repeal the Public Utility Holding Company Act which will increase investment in the energy sector, enhance consumer protection, and increase penalties', for violations of law. We urge the Senate to include the Tennessee Valley Authority consensus language to help the regional wholesale market develop in the Southeast. The Administration would oppose

amendments to set a national renewable portfolio standard (RPS) on power generation and believes these standards are best left to the States. A national RPS could raise consumer costs, especially in areas where these resources are less abundant and harder to cultivate or distribute. We urge the Senate to support the President's proposal to extend and expand the renewable energy production tax credit as a more efficient means to expand renewable energy.

A diverse portfolio of energy sources is vital for energy security, and the Administration believes nuclear power is an essential component of that portfolio. The Administration supports provisions in S. 14 that reauthorize the Price Anderson Act nuclear liability insurance.

The Administration is pleased that S. 14 authorizes funding for two of the President's recent major energy initiatives. The bill authorizes funding for the Hydrogen Fuel Initiative and the Administration looks forward to working with the Congress to refine these provisions further, including clarifying the appropriate roles and authorities for various Federal and State agencies. S. 14 also authorizes the Secretary of Energy to enter into "negotiations aimed at building an international fusion test facility known as ITER, which is an essential step toward developing a commercially viable fusion energy source. In addition to these recent Presidential initiatives, we strongly support research and development on clean coal technologies consistent with the President's Budget proposal to provide $2 billion toward this effort. We commend the Senate", for including incentives to spur the production of alternative and renewable sources of energy and authorities that will help accelerate advances in these and related energy fields.

We urge the Senate to support further expansion and diversification of the Nation's energy supplies to enhance our economic security. In particular, the Administration urges the Senate to adopt a provision, like the one included in H.R 6, to open a small portion of the Arctic National Wildlife Refuge (ANWR) to environmentally responsible oil and gas exploration and development. Opening ANWR is not only key to making energy legislation truly comprehensive by increasing domestic production, but also to creating tens of thousands of new jobs for American workers. In addition, the Administration strongly supports an amendment to adopt, a renewable fuels standard to increase the use of clean, domestically produced renewable fuels like ethanol, which would reduce dependence on imported oil, protect the environment, and benefit the farm economy.

The Administration supports provisions that are consistent with the National Energy Policy and the Department of the Interior's proposed regulations to increase production of traditional energy resources on the Outer Continental Shelf ((CS), Federal onshore lands, and Indian lands. However, we are concerned that the annual trust asset evaluation of the activities of Indian tribes required by section 2604 will hinder the development of resources on Indian lands and is inconsistent with the principles of Indian self-determination and self-governance. In addition, the Administration would object to any coastal impact payments such as those authorized by the bill. Under current law, more than $1 billion annually from OCS mineral leasing receipts is already shared with coastal and noncoastal States.

The Administration supports the construction of a commercially viable Alaska natural gas pipeline and believes market forces should select the route and timing of the project. The Alaska natural gas will provide a significant new domestic energy supply to America for years to come, and will be a key component of our long-term energy security. However, the Administration opposes the price-floor tax subsidy provision in the Senate Finance Committee bill, because it would distort markets and could be very costly.

The Administration is not convinced of the need for additional legislation that would attempt to limit or direct U.S. global climate change, and will oppose any climate change amendments that are inconsistent with the President's climate change strategy. In February 2002, the President committed the United States to an ambitious national goal to reduce the greenhouse gas intensity of the American economy by 18 percent over the next 10 years. The President directed a broad range of domestic and international actions, including new initiatives for scientific research, advanced energy and sequestration technologies, and voluntary reporting of greenhouse gas emissions. The President's climate change strategy provides for a continuing cabinet-level policy process to oversee and direct this comprehensive program. Other provisions in S. 14 that make good energy policy sense—such as expanded use of renewable and nuclear energy, improved energy 'efficiency, and accelerated development of a hydrogen fuel cell transportation infrastructure—w11 themselves reduce the projected growth in greenhouse gas emissions, and we urge the Senate to allow these and the President's strategy to go forward unimpeded.

States and New York v. United States. The legislation must be revised to specify that the participation of States in the programs at issue is strictly on a voluntary basis.

Pay-As-You-Go-Scoring

The Budget Enforcement Act's Pay-As-You-Go requirements and discretionary spending caps expired on September 30, 2002. The Administration supports the extension of these budget enforcement mechanisms in a manner that ensures fiscal discipline and is consistent with the President's Budget. OMB scoring of the bill is under development.

Mr. GARMAN. The staff of the Office of Energy Efficiency and Renewable Energy (EERE) contacted the Committee on Environment and Public Works staff to determine the appropriate contacts in the State of Ohio. Upon receipt of the information, EERE staff telephoned the Senator's constituent on April 2, 2003, to inform him of the Biomass program solicitation.

Senator VOINOVICH. One of the things that—I do not know how it all works out—but this astronomic increase in natural gas today is just impacting negatively on everyone in this country, and it is really hurting our plastic industry. We have just got to start looking around for some other things. So I thank you very much.

Mr. GARMAN. Thank you, Mr. Chairman.

Senator VOINOVICH. Senator Thomas, do you have any questions? OK. Thank you very much for your testimony today.

We will call our next panel. The panel is made up of Fred Yoder, President of the National Corn Growers Association. Fred, we are real happy to hear from you today. Mr. Yoder and I have known each other for a long time and we are proud of the fact that somebody from Ohio is chairman of the organization. Dr. Edward Murphy, Downstream General Manager of API—Mr. Murphy we are glad to have you here today. Mr. Robert Slaughter, President of the National Petrochemical and Refiners Association—nice to see you again. Mr. Scott Segal, partner in Bracewell and Patterson, L.L.P.—Mr. Segal, you are back again. And Mr. Rich Wagman on behalf of the American Road and Transportation Builders Association, Vice Chairman of ARTBA, and President of G.A. and F.C. Wagman from York, Pennsylvania. We are very happy to have you here today.

And Mr. Blakeman Early, consultant from the American Lung Association—Mr. Early, we are very happy to have you here today. And Mr. Paul J. Granger, Superintendent, Plainview Water District, Plainview, New York. We will find out how it really is in the street. We are very pleased that you are here today. And Mr. Craig Perkins, Director, Environmental and Public Works Management of Santa Monica, California. Again, we are very interested in the California perspective on this whole issue.

I want you all to know that we will put your full testimony into the record. Because we have so many witnesses here today, we would like you to adhere to the 5-minute rule if you can, and again thank you for being here.

Mr. Yoder, we will start with you.

STATEMENT OF FRED YODER, PRESIDENT, NATIONAL CORN GROWERS ASSOCIATION

Mr. YODER. Thank you, Mr. Chairman.

Thank you for giving me the opportunity to testify before this subcommittee to talk about a key issue in our world today, and that is energy independence.

My name is Fred Yoder and I am President of the National Corn Growers Association. I have to say that I live and farm in the great State of Ohio. Our mission is to increase opportunities for corn growers in the changing world and to enhance corn's profitability and usage across this country. NCGA represents more than 32,000 members and have made passage of the renewable fuels standard the organization's No. 1 legislative item for 2003.

RFS can help us fix some of those long-term obstacles facing agriculture, while at the same time playing a critical role in our Nation's comprehensive energy policy. We believe ethanol provides energy security for the United States, and we believe the necessary resources are here to make a significant contribution to our domestic fuel supply.

An RFS will more than triple the size of the ethanol market within the next 10 years. On February 13, we took one step closer to making that priority a reality when you joined Senators Tom Daschle and Dick Lugar to introduce the Fuel Security Act of 2003. We are encouraged by this legislation, which bans MTBE nationwide, strengthens air quality regulations, provides refiner flexibility, establishes an RFS, and ensure marketplace certainty to our Nation's farmers.

Under the leadership of Representative Collin Peterson and Tom Osborne, the House of Representatives has introduced companion legislation. Specifically, some of these key provisions include an RFS which, in part of our Nation's fuel supply, growing to five billion gallons by 2012, as provided by renewable, domestic fuels such as ethanol and biodiesel. It also includes eliminating the Federal reformulated oxygen requirement and it phases out the use of MTBE.

Time and time again, we see boosts to local economies when renewable fuels are in the picture. Local labor is hired. Local supply industries are tapped. And crops from local producers are consumed and made into ethanol. Mr. Chairman, one of the most positive developments in the ethanol industry is the huge investment by farmers in ethanol plants. Nine of the last ten plants constructed last year were farmer-owned coops or LLCs. Of the 11 plants coming under construction and implementation this year, 10 of the last 11 are going to be owned by farmers.

The ethanol industry is no longer dominated by one company. Instead, it is dominated by thousands of individual farmer investors seeking a way to add value to their corn. At the same time, these farmers have committed themselves to being a part of our Nation's energy security.

Mr. Chairman, I am also very disappointed that Mr. Garman is concerned that the current ethanol industry cannot meet the requirements of the RFS. Current capacity is in excess of 2.7 billion gallons per year, and by the end of this year U.S. ethanol production will be up to three billion gallons per year. This industry is exceeding 30 percent annual production increases.

Mr. Chairman, as we approach this year's debate on the TEA–21 reauthorization, there is no one issue of greater interest to the

NCGA. That issue is the preservation of the tax incentive for those marketers who blend ethanol with gasoline. Refiners and gasoline marketers who use 10 percent ethanol blends receive a 5.2 cents per gallon reduction from the tax paid on straight gasoline. This tax incentive has made a tremendous contribution to the use of renewable fuels in this country. Our members strongly support full funding of the HTF, and the NCGA is working with Members of Congress to retain this important tax incentive, while also making sure that the HTF is whole.

As I stated earlier, passage of the RFS is the No. 1 legislative priority for the National Corn Growers for 2003. Together, we can continue to grow a healthier U.S. economy and work toward greater energy security and a cleaner environment.

Chairman Voinovich and the rest of the committee, I thank you for this opportunity to comment today and we look forward to working with you in advancing the ethanol-friendly legislation during this 108th Congress.

Thank you.

Senator VOINOVICH. Thank you.

Dr. Murphy?

STATEMENT OF EDWARD MURPHY, DOWNSTREAM GENERAL MANAGER, AMERICAN PETROLEUM INSTITUTE

Mr. MURPHY. Thank you, Mr. Chairman. My name is Edward Murphy. I am the Downstream General Manager for the American Petroleum Institute, the trade association representing more than 400 companies from all sectors of the oil and natural gas industry.

First of all, I would like to particularly extend my thanks to you, Senator Voinovich, for your efforts to put together this historic piece of legislation, and to work with us in passing it through the Senate.

We appreciate the opportunity to address the fuel supply problems facing U.S. fuel proprietors and consumers. Time is of the essence because individual State MTBE bans will start to take effect very soon, with Connecticut starting in October and New York's and California's beginning in January of next year. Differing start dates and gasoline requirements from various States, combined with a Federal oxygenated content requirement for reformulated gasoline will complicate an already tight fuel supply system, increasing the potential for disruptions in the supply and distribution system.

As Congress considers a comprehensive national energy bill, we urge you to address problems with fuel supplies that have plagued the petroleum industry and energy consumers over the last 8 years. Those problems were underscored in recent days by the decision of the New York Mercantile Exchange to suspend gasoline futures trading beginning in 2004 due to uncoordinated State MTBE bans. The New York Merc decision should be seen as a shot across the bow regarding the worsening fuel problems that we will face is Congress fails to act.

Likewise, the U.S. Energy Information Administration has recently concluded, and I quote, "that the increases in RFG prices in California, New York and Connecticut would be significantly higher than the national average of 3.6 cents as the result of State MTBE

bans, and that there was a possibility of supply imbalance and price spikes during the State-level MTBE phase-out."

We believe Congress should repeal the oxygen requirement for RFG that is in the Clean Air Act, and require a national phase-down of MTBE. As part of the package that meets these objectives, we also support the renewable fuels standard that phases out the five billion gallons over several years nationally, with an averaging and credit trading program to allow the use of renewable fuels where most feasible and cost-effective.

In addition, we support provisions that would protect and enhance the environmental benefits already achieved from RFG.

Finally, we support limited liability protection that recognizes that when Congress mandates the use of fuels components, it is reasonable to disallow defective product claims for introducing that product into commerce. This very limited liability relief would not affect liabilities for cleanup costs and a legal regime for cleanup of hazardous spills would be left in full force.

These steps are a much better solution than the alternative, which is continued State MTBE bans and further aggravation of the already troublesome situation of patchwork fuels requirements across the country. A solution that relies on State MTBE bans to fix the problem is not efficient and will exacerbate the supply problems that are likely to arise out of uncoordinated and disjointed State requirements.

Unique State fuel requirements isolate affected markets and in the event of a supply disruption, could cause shortages and price volatility as experienced in two of the last 4 years in Chicago and Milwaukee. Sixteen States have already enacted MTBE bans or caps and additional States are considering bans.

The carefully crafted provisions I have discussed as part of a package that meets our objectives are supported by an historic coalition including API, numerous farm and ethanol interests, Northeast State air quality officials, environmental interests, and they were passed by the Senate last year as part of the comprehensive energy bill. They offer carefully considered solutions to the fuels problems that have challenged fuels providers and burdened American consumers. They protect important environmental benefits achieved by reformulated gasoline. We strongly urge Congress to adopt similar legislation.

Mr. Chairman, the member companies of API are interested in providing clean, environmentally acceptable gasoline to their consumers, which the consumers have a right to deserve. We are asking the Congress to give us the ability to do that.

Thank you very much.

Senator VOINOVICH. Thank you, Dr. Murphy.

Mr. Slaughter?

STATEMENT OF ROBERT SLAUGHTER, PRESIDENT, NATIONAL PETROCHEMICAL AND REFINERS ASSOCIATION

Mr. SLAUGHTER. Good morning, Mr. Chairman. The National Petrochemical and Refiners Association thanks you for the opportunity to offer our recommendations today on an updated energy policy.

We are a national trade association with more than 450 members who own and operate most U.S. refineries and petrochemical manufacturing facilities. NPRA favors a supply oriented national energy policy which has twin goals to increase energy supply and energy security. We believe that energy policy should also recognize, and we thank Senator Thomas for mentioning, the great importance of a healthy and diverse domestic refining industry that produces most products consumed here in the United States.

In that regard, Mr. Chairman, I really want to recognize your commitment to achieve reform of the New Source Review Program, which must occur to maintain a healthy and diverse heavy manufacturing industry like refining and petrochemical manufacture in the United States. We are much closer to real NSR reform today because of your efforts over the last several years, and we thank you for it.

We also appreciate your holding this first-ever Senate hearing regarding highly important and controversial fuels language added to the Senate energy bill last year without benefit of consideration by the committee of jurisdiction. Although we may disagree on some policy issues involved, NPRA appreciates the return to regular order on such important matters as these.

Our specific recommendations—we support prompt elimination of the 2 percent RFG oxygenation requirement. This will give refiners greater flexibility to manufacture and distribute this important environmental product in the most efficient and cost effective manner, and also allow refiners to respond to State and local concerns about MTBE use without subjecting those areas to mandatory use of ethanol, which is inappropriate during the summer ozone season.

I must also admit that we are not part of the group that is supporting the Senate compromise of last year, and feel that it is important on behalf of our association to register our concerns about some of it, including the ethanol mandate. I can only offer in mitigation that I was born and raised in Coshocton, Ohio and hope that you will keep that in mind.

[Laughter.]

Mr. SLAUGHTER. We do oppose the national ethanol mandate in gasoline because fuel mandates, in our opinion, are inefficient, and given experience they are also inflexible and costly policy mechanisms. Many NPRA members already use large quantities of ethanol in their gasoline. They, along with other industry experts and analysts, expect future ethanol usage to increase substantially because of the shortage of available gasoline blend stocks. Thus, there is no need to impose a national ethanol mandate on gasoline consumers nationwide to expand the ethanol market.

One size does not really fit all in diverse America. There is just no need to force gasoline consumers across the country to either use ethanol in their gasoline or pay for the privilege of not doing so. This mandate really creates a tax on consumers who live in parts of the U.S. where ethanol use is impractical. It would be of much greater benefit to everyone to repeal the 2 percent RFG requirement, reject this mandate, and allow consumers to decide for themselves which gasoline is most appropriate for their region's supply profile and environmental needs.

Last year's language also encouraged use of ethanol in the summer months. We are concerned about that because it creates potential environmental and gasoline supply problems. We do not believe that this should be part of our national energy policy.

Whatever its shortcomings, the national ethanol mandate proposal is already responsible for one miracle. It succeeded in uniting the editorial pages of the New York Times, Wall Street Journal and Washington Post in firm opposition to it. NPRA believes that they are right, and it pains us to disagree with the Chairman on this matter, but we urge you to take a second look at it.

We also do not support a Federal MTBE ban. We are concerned about the lack of justification for this step and the impact on supply. The U.S. Energy Information Administration has pointed out that MTBE volumes and desirable blending attributes will be hard to replace, leading to potential gasoline supply problems. We agree, and urge Congress to be conservative on this matter. The States where most MTBE is used are already dealing with it. Several have already delayed or are expected to delay their target dates to limit MTBE use because of supply concerns. Many of the large number of States who are listed as having banned MTBE do not use significant amounts of MTBE.

The fact is, the State of California is in the process of dealing with its own MTBE-related program. The State of Connecticut is scheduled to have a State ban effective October 1 of this year, which is being reconsidered. I know a bill just came out of a subcommittee there to move that back to the first of the year. New York has a ban the first of next year, and as I understand it, the Senate bill does not affect those dates, which are different, because they are the result of State actions. So we do not really understand why these States cannot deal with this problem on their own, in the absence of a Federal ban, with DOE and EPA monitoring the supply and environmental impacts.

We do want to join others in supporting the extension of product liability protection to MTBE and any other mandated fuel component. Those who comply with a government mandate should not be penalized and subjected to large punitive damages just because they obeyed the law.

We would also just ask that you and others evaluate the impact on supply of any fuel-related initiative that is part of this national energy bill. Our experience over the last several years has been that we have a very tight supply and demand balance. We think we need to be very careful to things that make it more difficult to manufacture gasoline for America's consumers, and we do think that given the experience of not just the last few years, but also the last few decades, that it pays to be conservative about some of the expectations that we have about how quickly and smoothly these changes can be made.

Thank you for your time.

Senator VOINOVICH. Thank you.

Mr. Segal?

STATEMENT OF SCOTT SEGAL, PARTNER, BRACEWELL AND PATTERSON, L.L.P.

Mr. SEGAL. Mr. Chairman, my name is Scott Segal. I am a partner at the law firm of Bracewell and Patterson. I am here in my capacity as counsel to the Oxygenated Fuels Association. We, too, look forward to the timely passage of energy legislation.

I want to state for the record that while I am from Texas, my dad was raised in Dayton, Ohio, so that ought to be worth something.

[Laughter.]

Mr. SEGAL. Mr. Chairman, the decision to examine fuel and fuel additives could not be more timely. As today's hearings are underway, disturbing trends are emerging regarding security and supply of motor fuels. In particular, the problems in California have been attributable in part to the decision of some to shift from MTBE to ethanol fuels, given the difficulty—the unique challenges, let me say—that ethanol fuels can sometimes present.

Further, we know, as OFA has noted many times, that the impact of MTBE on the national motor fuels pool is extraordinarily significant. In fact, Mr. Garman's boss testified before the Senate last year that MTBE's contribution is equivalent to about 400,000 barrels a day of gasoline production capacity, or the gasoline output of four to five large refineries. By way of comparison, during the peak of Operation Desert Storm, the 500,000 U.S. military personnel involved consumed approximately the same amount on a daily basis. So it is a significant addition.

I want to say just one or two things to address this concept that the States will continue to ban, and therefore we ought to do the right thing and take the most restrictive possible State action and then nationalize it. That does not seem to make a lot of sense to me. Will States implement these bans? That is an open question, sir. That is an open question. Every time a State that actually uses MTBE to any significant extent has been faced with actually implementing their ban, they have pushed back because they know of the impact of MTBE on energy security, on price, on supply and on the environment. Does anyone believe that on a policy of flexibility what we ought to do is adopt a nationwide mandate and a nationwide ban, because we need more flexibility? That makes no sense, sir. I would put it that it makes no sense.

RFG made with oxygenates has never been a boutique fuel. It currently accounts for over one-third of the national gasoline supply. That is not a boutique, that is a supermarket. It is not a boutique fuel. There is no evidence that concerns regarding MTBE have stopped gasoline supplies from moving across borders. I just wanted to get that on the record.

By every measure, clean-burning RFG blended with MTBE has exceeded all pollution reduction goals, as Mr. Holmstead indicated. It is the equivalent of removing 64,000 tons of harmful pollution from the air we breathe, or taking about 10 million vehicles off the road.

However, objective analysis points to MTBE having become a convenient scapegoat for a collective failure to protect U.S. groundwater resources. An Australian fuels expert recently characterized this phenomenon as shooting the messenger. As Senator Daschle

testified before this committee in September, 1998, inadequate gasoline storage facilities is the cause of this problem, not the RFG program. Simply removing MTBE from the marketplace will not stop gasoline groundwater contamination. It will, however, have major negative effects on other important national priorities—that from the author of the 2 percent oxygen standard.

As Mr. Perkins testified last year in front of the House, a primary focus of MTBE control should be the UST Program, its inspection, training and enforcement. The most recent data has indicated as UST programs have been fully implemented, detections of MTBE have declined.

Mr. Chairman, as you know, last year's energy proposal contained a safe harbor provision applicable only to ethanol fuels, but the same argument as a matter of law, fairness and policy was clearly applicable to MTBE and other ethers. MTBE usage in RFG derives from compliance with a Federal mandate. As Senator Daschle said on the floor defending the 2 percent standard, he said the ethers, especially MTBE and ETBE, are expected to be major components of meeting a clean octane program.

Some have argued that the imposition of strict product liability is a prerequisite for appropriate remedial actions. We respectfully disagree. First, negligence theories more than suffice to address remedial questions. Second, the use and improvement of the UST program provides a far fairer and more efficient mechanism to address the problems of alleged contamination. And third, one can hardly think of a less efficient or perhaps greedier mechanism for addressing water quality concerns than imposition of an inflexible strict liability theory. A recent report from the Council of Economic Advisers found that using the tort system in this way is extremely inefficient, returning only 20 cents of the tort cost dollar for that purpose. Surely, we can construct a policy to address underground storage leaks such that greater than 20 cents out of every dollar actually goes to clean up.

If Congress should choose to adopt some form of ethanol mandate, then policies must be put in place that facilitate such mandates in the most acceptable terms. Mere splash funding of ethanol is likely to prove unacceptable on a number of fronts. One way to address the problem is to incorporate ethanol into other ethers like ETBE, an ether with less affinity for water than MTBE. But ETBE must be treated fairly in tax and regulatory contexts, and we are going to submit a separate statement from Lyondell Chemical Company on that matter for the record, with your permission.

Mr. Chairman, thank you for your continued interest in these matters. These are tough issues to resolve. We do not want them to be a burden on adopting energy policy concerns, and I think we are close. So we look forward to working with you on resolving these energy policy matters.

Senator VOINOVICH. Thank you, Mr. Segal.

Mr. Wagman?

STATEMENT OF RICH WAGMAN, FIRST VICE CHAIRMAN, AMERICAN ROAD AND TRANSPORTATION BUILDERS ASSOCIATION

Mr. WAGMAN. Good morning, Mr. Chairman. I am Rich Wagman, Chairman and CEO of G.A. and F.C. Wagman, Incorporated, a bridge and highway construction firm based in York, Pennsylvania. I also serve as First Vice Chairman of the American Road and Transportation Builders Association. I am representing ARTBA at this hearing.

There is a unique nexus between Federal transportation, energy and environmental policies. All of these have a common thread—the use of Federal tax law involving motor fuels to advance national objectives. Unfortunately, these tax policies are often debated and decided separately, and thus in a vacuum during a transportation bill, an energy bill or an environmental bill. As a result, positive impacts for one policy area sometimes contradict or even undermine goals and objectives in another policy area.

That certainly is what has happened in the case of ethanol tax law, as it impacts the Highway Trust Fund. Since 1979 when gasohol tax preferences were first initiated, the Highway Trust Fund has lost billions of dollars in potential highway user fee revenue. This situation needs to be examined, and hopefully reformed this year.

There is reason and urgency for such action. The 2002 U.S. Department of Transportation report to Congress on highway systems, conditions and performance suggests close to a $50 billion per year Federal highway program is necessary just to maintain current system conditions and performance levels over the period 2004 to 2009. The gap between these documented needs and current Highway Trust Fund revenue forecasts is over $17 billion per year.

Mr. Chairman, the chart that we have brought here illustrates the problem. We have used U.S. Department of Energy forecasts for future ethanol-related motor fuels use to quantify the effect of current ethanol tax policy and the effect of the proposed renewable fuels standard on Highway Trust Fund collections. This chart also appears on page eight of our written testimony.

The orange portion of these bars reflect the impact of current ethanol tax law. Absent changes to the law over the next 9 years, an average of $2.4 billion per year in potential highway user revenue will be lost to the Highway Trust Fund due to ethanol motor fuel sales. Over the 6-year TEA–21 authorization period, the total trust fund loss reflected here in the orange bars would be $13.8 billion. Over the full 9 years depicted, the loss would total $21.5 billion.

The proposed renewable fuels standard would exacerbate the magnitude of the loss if the current ethanol tax stands. That additional loss is reflected in the yellow portion at the top of the bars.

As the ethanol fuel market grows under the proposed standard, so would the potential revenue loss to the Highway Trust Fund—starting at about $200 million in the year 2007, growing to $1.3 billion in fiscal year 2012. The TEA–21 reauthorization period impact of the proposed renewable fuel standard would also total about $1.3 billion in foregone revenue.

As you work to develop a TEA–21 reauthorization bill, we respectfully suggest that $13.8 billion are available by reforming the ethanol tax policy and ensuring that as ethanol use grows in the future, the Highway Trust Fund is not negatively impacted.

I would like to emphasize that ARTBA is not opposed to either ethanol use or the proposed renewable fuels standard. We just want to draw the committee's attention to the negative impact these well-intended tax and energy initiatives will have on the future revenue to the Highway Trust Fund. We believe Federal ethanol initiatives that support agriculture, energy and environmental objectives should be supported through the general fund, not at the expense of transportation improvements funded by highway users through the transportation trust fund.

We applaud the Bush Administration and the Budget Committees of the Senate and the House for proposing to redirect the revenue stream from the $0.025 portion of the gasohol excise from the General Fund to the Highway Trust Fund. We also believe there is a great merit in a proposal that we understand Senators Baucus and Grassley are developing that would establish a General Fund tax credit for ethanol refiners in lieu of an excise tax incentive. We urge the Senate to address the ethanol Highway Trust Fund issue once and for all this year in either TEA–21 reauthorization or the energy bill. We also encourage you to establish a commission to develop recommendations on how to finance Federal highway and mass transit investments in the future, post-gasoline and diesel era. We need to prepare now for future transportation financing needs.

Mr. Chairman, that concludes my testimony. Again, thank you for the opportunity to present our views. I will try to answer any questions you or other committee members might have.

Senator VOINOVICH. Thank you, Mr. Wagman.

Mr. Early?

STATEMENT OF A. BLAKEMAN EARLY, CONSULTANT, THE AMERICAN LUNG ASSOCIATION

Mr. EARLY. Thank you, Mr. Chairman. I am A. Blakeman Early, a consultant appearing on behalf of the American Lung Association. Obviously, a nexus to Ohio is very important and I would like to say I am a proud graduate of Dennison University in beautiful Granville, Ohio, as is Senator Lugar, I might point out.

My testimony reflects that the Lung Association has worked hard for compromise legislation in this area. We supported compromise legislation that this committee reported in the 106th Congress, I would observe, without a liability shield, Mr. Chairman. We also support those elements of S. 385 which was part of a very important Senate compromise that included an increased RFS. We supported all those elements of that bill except the liability shield.

Unfortunately, progress was prevented last year because the House has a very different view. I just want to review what the House offer did. It added a liability shield for MTBE. It removed the MTBE ban. It preempted State bans and it removed the authority for EPA to regulate gasoline additives based on their potential to cause water pollution—essentially gutting the Senate bill.

I am going to move to the key issues that are obviously in play. First, we believe very strongly MTBE must go. Incidentally, Mr. Chairman, we do not think it will be nearly as costly as you suggested in your opening remarks. Ten cents a gallon is more than it costs to product all of RFG. We think that removing MTBE from the fuel supply will be a very modest cost, which obviously is very important.

The presence of MTBE in gasoline undermines public support for the RFG program. It promotes areas adopting boutique fuels and it creates a nightmare for water suppliers and people who own wells, and Mr. Granger's testimony that will be presented just after mine will illustrate that well. As long as MTBE is in the fuel, there will be more plain-view water district problems that Mr. Granger will describe.

We very much oppose a safe harbor for MTBE. It was not in this committee's legislation. My testimony contains information that shows that when manufacturers were advocating the oxygenate standard—MTBE manufacturers and refiners—they knew of the hazards of MTBE and water; they knew that leaking underground storage tanks were leaking all over the country; they continued to advocate the requirement for oxygen which they knew would be MTBE in every gallon of reformulated gasoline and oxygenated fuels; and they never told Congress about the problems.

I think the key element of my testimony includes a quote from a Shell expert who said when asked by API, "Even if it were not a factor to health, MTBE still had to be removed to below detectable amounts in order to use the water." That is a Shell expert reporting to API on the problems with that company.

It is important to understand that the inclusion of the MTBE in the liability shield as in the House language bars people from bringing product liability litigation for spills that occurred prior to 1990. It bars them from bringing litigation on this theory for spills from MTBE in conventional gasoline where refiners are placing the MTBE in the fuel voluntarily. They are not required under the RFG. One of the important elements is that the industry was voluntarily putting in 4.2 million gallons per day of MTBE in fuel before either the oxygenated fuel program or the RFG program rule went into effect. That is half the total use that is occurring under those programs today.

So it is not as if the government made them do it. They certainly share a major responsibility and people like Mr. Granger need every tool available to them to be able to address the contamination problems that they are facing.

The last problem is that history is repeating itself. The OFA testimony advocates promoting ETBE because it is, quote, "has less affinity for water than MTBE." What the testimony does not contain is that while yes, ETBE is 60 percent less soluble than MTBE, it is 30 times more soluble than benzine; it is very resistant to biodegradation which benzine is not; and it has an odor effect in water at one-quarter of the concentration of MTBE. Is it a good idea to shift from MTBE to ETBE? I think not. I would actually recommend legislation that prohibits refiners from using it.

We oppose the liability shield being extended to renewable fuels. It will simply create the potential for another MTBE disaster. We

recommend the Senate remove the liability shield for renewable fuels. They should be asking the refiners and the ethanol manufacturers, what do they know that we do not know, that they need this shield? It is not like there is a tidal wave of litigation out there. Why do they need this shield? Do they know something we do not know, just like they did in 1990? We hope not.

Senator VOINOVICH. Thank you, Mr. Early.

Mr. Granger?

STATEMENT OF PAUL J. GRANGER, SUPERINTENDENT, PLAINVIEW WATER DISTRICT

Mr. GRANGER. Good morning, Mr. Chairman, and thank you for providing me with the opportunity to address the subcommittee today.

My name is Paul Granger and I am a licensed professional engineer and service superintendent for the Plainview Water District. The Plainview Water District is a large water supply system located in Nassau County, New York. My system directly relies on groundwater as the sole source of drinking water for our community. My comments today will specifically address my first-hand experience and knowledge of the adverse impact of the fuel additive MTBE on our drinking water supply.

The widespread use of MTBE in reformulated gasoline and the impact of the compound on the water supply system throughout the country has raised the serious concerns of water purveyors across the Nation. MTBE has unique properties that allow it to travel far into the groundwater system and make it very difficult and expensive to remove with traditional treatment methods. This fact is well documented in scientific literature.

During November, 2000, the MTBE threat to the Plainview Water District became a sudden and unwelcome reality when a large spill containing a very high concentration of MTBE was found only within 450 feet of a vital drinking water supply well facility. The spill will eventually impact two critical supply wells, as indicated on this map over here. There are also more spills discovered since then, unfortunately, and they are unfortunately even closer.

At this time, the polluter has not taken any action to clean up the impacted aquifer, even though it was reported to State environmental authorities during 1997. What is unfortunate and very disturbing is that more than 6 years has elapsed and the contamination continues to migrate unabated toward our vital supply facility.

Due to the failure of the polluter to clean up the contaminated groundwater and lack of State regulatory agency assistance, the water district as a last resort was forced to undertake legal action against the polluter. This action was taken to ensure the cleanup of the spill and to properly shift the enormous financial burden of treatment onto the responsible party, rather than the water rate payer.

As a result of vigilant monitoring by water utilities and regional health departments, the chemical is now being detected in many public and private water supply wells throughout the country. On Long Island, MTBE has been detected in approximately 130 public supply wells. It should be noted that hundreds of shallow private

wells on Long Island have been contaminated with MTBE and have been taken out of service.

In addition, at least 21 States have reported well closures due to MTBE groundwater contamination. To underscore my concern, New York has identified 1,970 MTBE spills as shown on this map, and with 430—approximately one-quarter of them—on Long Island alone. The American Waterworks Association estimates that water suppliers are already faced with a national cost exceeding $1 billion to prevent, cleanup, and treat MTBE-contaminated supplies. It is clearly evident that MTBE must be immediately banned before the problem worsens.

Recent scientific studies concluded that there is no significant air quality benefit to the use of oxygenates such as MTBE and reformulated gasoline. In summary, the studies concluded that MTBE addition has no significant effect on the emissions from modern vehicles, while presenting significant risks and costs associated with water contamination.

It is my understanding that a liability safe harbor provision is under serious consideration as Congress deliberates proposals for amending the Clean Air Act. The proposed provision would unjustly shield the petroleum and ethanol industries from defective product liability. Such a provision would unfairly place the monumental cleanup and treatment costs onto water suppliers and ultimately the customer—both of which are innocent parties that did not create the problem in the first place.

It is respectfully requested that our Federal legislators take careful note of the substantial MTBE drinking water contamination problems facing water suppliers throughout the country. In addition, it is very important to consider scientific facts concerning the use of MTBE and overall the need for oxygenates as legislative proposals are reviewed. The Senate and government as a whole still has time to prevent MTBE from becoming a national drinking water catastrophe if prompt and proper action is taken at this time.

In conclusion, I recommend the following be strongly considered as the Senate deliberates proposals for amending the Clean Air Act. One, based on the present impact and expanding threat to water supplies nationally, MTBE must be swiftly phased out of gasoline. Two, the oxygenate mandate in the present Clean Air Act must be removed based on the conclusions and recommendations made by prominent studies which are scientific in nature and EPA blue ribbon panel. And three, the legal rights of water suppliers and consumers must be upheld so that the vast cleanup burden is not placed on taxpayers. Providing a liability safe harbor eliminates a vital tool to protect the economic, environmental and public health interests of the water consumer.

The rest of my recommendations are contained in my written testimony, so in the interest of time you can refer to that.

In closing, we need immediate help from the Federal Government to ensure that our water supply remains safe and economically viable for public consumption.

Thank you for your time and providing me with this opportunity, and I would be willing to answer any questions that you may have on this topic.

Thank you.

Senator VOINOVICH. Thank you.

Mr. Perkins?

STATEMENT OF CRAIG PERKINS, DIRECTOR, ENVIRONMENT AND PUBLIC WORKS MANAGEMENT

Mr. PERKINS. Thank you, Senator.

I would like to share with you today the MTBE experiences that we have had in Santa Monica. Santa Monica is a city of nearly 90,000 permanent residents, but during any given day with the commuter and visitor population, we rise to about 250,000 people within our boundaries. We have always depended heavily on groundwater supplies. In fact, by 1995 we had maximized those resources and they supplied 70 percent of our water, which was a very high level of self-sufficiency in an arid environment. By using those sustainable resources, we were able to reduce our reliance on Colorado River water and Northern California water.

This all changed in 1996 when we were hit with our MTBE catastrophe. Within a 6-month period, we were forced to shut down most of our water wells, accounting for about one-half of our total daily water supply. We now purchase about 80 percent of our drinking water from outside sources, putting strain not only on ourselves, but on California's already fragile water supply system.

We know what the characteristics of MTBE are. When it leaks from tanks and pipelines, it readily travels through groundwater and travels much farther than the other constituents in gasoline. All of our wells had been in operation since the 1920's. They had never been impacted by any gasoline contaminant until MTBE hit us in 1996.

Really, it strikes at the confidence of our drinking water customers. People are not going to drink water that smells and tastes like turpentine, nor do we believe that they should be required to do so.

Although the effects just from the MTBE contamination have been quite devastating, what is perhaps the most frustrating part of our experience is the recalcitrance with which the companies responsible for the pollution—oil companies and MTBE manufacturers and distributors—their recalcitrance to accept responsibility and cleanup the mess they have caused. Initially, the initial financial burden was borne completely by our water customers, both for evaluating the cleanup alternatives, investigating and identifying the responsible parties, and purchasing outside water.

This is unfair for our citizens and as a result we worked very hard. About 18 months after we had started shutting down our wells, we were able to reach an interim agreement with two large oil companies to reimburse the city for past costs and to pay for the ongoing costs of dealing with the problem. That interim agreement lasted only about two and a half years before it was allowed to fall apart, not by the city, but by the participating oil companies, very likely due to the escalating costs that they were projecting to deal with MTBE remediation. In Santa Monica right now, we are estimating that the cost just to clean up our main well field exceeds $250 million. Current estimates of the total cost of nationwide MTBE cleanup are $30 billion and counting.

With no other acceptable options to us, we filed a lawsuit against 18 companies in June of 2000. We did not want to file this lawsuit. From the start, our motivation has been to reach a settlement and to get on with the task of restoring our drinking water supply, but we do not believe it is right for our water customers to pay for any of those costs to do so.

Two years after filing our lawsuit, just last autumn, we were able to reach a new settlement with two of the major companies that guarantees that Santa Monica's water will be cleaned up as quickly as possible, and the full cost will be borne by the polluters. Our best case projection, however, even with that settlement is that our local drinking water supplies will not be back on line until 2008, which is fully a dozen years after the problem hit us. Our lawsuit against the other companies continues and it has to continue in order to ensure that every responsible party ends up paying their fair share to restore our groundwater resources.

We are going to eventually overcome this, but the price is going to be steep. It is only fair for the costs of the remediation to be borne by the polluters. But we have found through painful experience is that it is frequently only the prospect of a very expensive jury judgment intended probably to punish oil companies for their past misconduct that brings many of these companies to the negotiating table. We need, as public water agencies, every legal tool at our disposal to ensure that polluters ultimately do what is right. If a defective product is sold and manufactured, then the damages caused by that product should not be the responsibility of the customer, but of the people who made it and sold it. There is no legitimate justification for treating MTBE differently than any other product in the economy.

The argument that we were only doing what Congress told us to do just does not hold water—no pun intended. I urge you to review the transcript and the jury verdict from the South Tahoe Public Utility District trial, which took place in San Francisco last year, where a pattern of prior knowledge and wilful misconduct regarding the potential environmental damage that can be caused by MTBE is shown. It came out clearly in that trial proceeding.

We are struggling to ensure that MTBE polluters deal expeditiously with the serious water contamination problems they have caused us, and we need your support. We need the full Senate and House's support to ensure that that progress continues to be made.

Thank you very much for your consideration this morning.

Senator VOINOVICH. Thank you very much.

This testimony this morning has been very interesting and certainly demonstrates a different perspective by some of the witnesses that have come here to testify.

Mr. Wagman, your comment about the issue of ethanol and other renewables is well taken. It seems to me that as we sit down and draft the highway bill, we ought to look down the road to see the different changes that we are going to see in terms of the use of energy. For example, there is a lot of emphasis on renewables, fuel cells, these fuel cells and electric and all the combinations thereof. I think that we really need to look at that, because as you know, the fund did not materialize as well as we had expected in the last couple of years. In fact, it was very light and frankly the general

fund had to make up the difference in order for us to maintain the level that we had committed to in 2003.

So that is a very good point. You are aware, I think you mentioned, that 2.5 cents at least in the Senate budget bill is going into the Highway Trust Fund. I am glad you made that point for us today. Thank you.

I would like to point out one other thing to you, that even if we take care of that problem, the amount of money coming into the trust fund will not adequately do what needs to be done, and anyone who really cares about the infrastructure in this regard has got to step up to the table and understand that we are going to need additional tax money in order to meet this crisis that we have.

Mr. WAGMAN. User fees.

Senator VOINOVICH. User fees. Well, user fees, but I am a debt hawk and I will be darned if we are going to borrow money from our children and grandchildren to pay for highways. We need user fees to take care of it and we need to face up to it. It seems to me that those of you on the outside that are looking in on some of these things understand that and get involved.

I am also interested in the difference of opinion on MTBE. Mr. Granger, would you want to explain more to me? I frankly was not—Mr. Perkins, both of you made a comment on it. What you are indicating is that the MTBE—these are from underground storage tanks. I know we have a law in Ohio that we are moving. One of the things I did as Governor was remove underground storage tanks, so it was a big deal. You are saying that these tanks—these are abandoned tanks or current tanks that are there, that somehow have leaked and this MTBE has gotten into the water supply?

Mr. GRANGER. Let me comment on that. There were various sources. One documented source had to do with leakage at the fuel pump itself, an internal problem. Another issue had to do with leaking fuel tanks, in fact. Also, there are problems with the newer fuel tanks out there. In my particular instance, the one site had an old single-wall tank and it was replaced and I understand that there was another problem with it again.

So these problems with MTBE come from a multitude of sources. Tanks are one of them and components that deliver the fuel are also problematic.

Mr. PERKINS. I just wanted to say it is really important to think of it as a fuel distribution system. It is the tank and it is the pipes leading to and from the tank to the dispensers. What we have found in many cases is that the weak link is the piping, not the tank itself. Prior to the requirement for double-walled fiberglass tanks, our experience was that approximately 25 percent of all tanks put in the ground could be expected to leak during their lives. That percentage goes down significantly with the new tank technology, but we find significant problems in the piping systems. In fact in Santa Monica, we require double containment. We require containment pipes around the distribution pipes, which is above State and Federal standards because that is, in our minds, such a problematic part of the system.

There is no such thing as leak-proof tank. That should go the way of the one-coat paint. It just is not going to happen no matter

how good the system is, failures will occur and they will cause problems if there is a chemical like MTBE in the fuel.

Mr. EARLY. Mr. Chairman, if I may, the unique thing about MTBE is it does not biodegrade. It is 50 times more soluble in water than benzine. So in the past the response to leaking storage tanks was less vigorous because many times the benzine which would leak out, which is of course the most toxic constituent of gasoline, would not move very far and there was time for biodegradation to reduce the benzine. MTBE moves very, very quickly through water. It does not biodegrade. And unlike benzine, it renders drinking water unusable at very low concentrations.

Senator VOINOVICH. I just understand that our committee moved our Senator Chafee's bill which addresses several of the issues of underground storage tanks. That deals with just trying to make sure that there is not more of this that leaks out into the water system. But you, particularly in California, the reason why it has hit California so much is you must rely a lot more on undergroundwater than other States. We get a our water from Lake Erie.

Mr. PERKINS. It is interesting. In California, approximately one-half of the drinking water is supplied by groundwater, underground sources. Actually, if you look at the entire United States, it is pretty close to one-half throughout the United States. It is a surprising statistic.

Mr. GRANGER. In my region in Nassau and Suffolk Counties, New York, we are an island so our three million customers receive groundwater as their strict drinking water source of supply.

Senator VOINOVICH. Mr. Segal?

Mr. SEGAL. Well, sir, I guess I have to disagree with a number of the representations that are being made. Blake is wrong. It is not that MTBE does not biodegrade at all. It depends on whether it is in an aerobic environment or an anaerobic environment, which means it is more of a difficulty in groundwater, that is for sure.

There are other, more persistent, more difficult problems that even the State of California faces with respect to groundwater. That is the opinion of their own California Resources Control Board. The most recent data that has been crunched by the U.S. Geological Survey indicates that all of the terrible rhetoric that you have heard down the table has not occurred; that in fact the problem has stabilized and is declining in terms of numbers of detects.

Now, aside from that I have listened with respect to the two witnesses at the end here, and this concept that they are reluctant litigants—you know, we did not want to be thrown into this; we really wanted to exhaust all administrative remedies before joining litigation—I think does not bear out under the facts. In the case of Plainview, the supply wells, according to Mr. Granger, are free from MTBE contamination and I am quoting him now, "we are strictly being proactive here." What does that mean?

Proactive litigation asking for several billions of dollars in punitive damages for a system that has less than 10,000 accounts. To me, it seems like a tremendous overreach. Santa Monica's own press release said that we have, quote, "assembled our legal dream team," but this is the same legal dream team that is the father of modern asbestos litigation, which has cost States and cities and

counties billions of dollars in resources. That is the price one pays when one overreaches on products liability theories.

We are not asking that all litigation be extinguished. In fact, Mr. Granger argues that there is a discrete spill that they wish to address. That is what the negligence system is designed to do. Mr. Perkins indicates that we know what problem is. He says, and I am quoting him here, just a moment go, "the weak link is the pipes of the tanks; the weak link is not the MTBE in the gasoline." Those are matters for negligence theories and the safe harbor in the legislation does not address the negligence theories at all.

In addition, you are correct, sir, that Senator Chafee has just passed out the underground storage tank bill. As Senator Daschle indicated some years ago, that is the appropriate mechanism to address problems with handling of gasoline. This is a gasoline handling problem. It is not a MTBE problem.

Senator VOINOVICH. Has Santa Monica paid any money out for this yet so far to deal with your problem?

Mr. PERKINS. Meaning the city of Santa Monica?

Senator VOINOVICH. The water system.

Mr. PERKINS. During the first year and a half after we shut down our wells, we were paying for 100 percent of the cost. We raised our water rates 25 percent in order to pay for the additional costs caused by MTBE. It was at that point that we were able to reach a temporary settlement with two of the companies. I might say that we have never received an offer of $1 from the Oxygenated Fuels Association to help pay for the problem. But right now, those costs are not being paid by our customers because there is an order from the EPA requiring that replacement water costs be paid by oil companies, and we have just entered into a new settlement which we hope will be approved by the courts.

Senator VOINOVICH. Well, it seems to me that just like everything else around here, that there is a middle ground. I am working right now to support legislation on medical liability reform, on asbestos reform, on class action reform. It appears to me that this is another area of litigation. You know, instead of people sitting down and saying, well, you can't do this, you can't do this—Mr. Segal, why don't you get together with these people and your organization and lay out something that makes sense, that does hold people that are responsible responsible, but puts some limitation on it so that this does not become another asbestos nightmare that we have got to confront here.

It just seems that, frankly, at this stage—you know, the other thing is that basically what we are saying is this stuff is really bad; it gets in the water; stinks. I have never tasted the stuff, and apparently you have to get rid of it and get something else. So there has got to be some middle ground here. It just seems to me around this place, we don't talk to each other; we talk past each other.

So my suggestion is that if you guys are concerned about this, you ought to sit down and maybe talk about it; get your national organization, Mr. Segal get your people in there and talk about some of these things now, before the next thing you know is—you know, we had the big debate 2 years ago on is this carcinogenic. There was some stuff, some Italian research and that got into a big

hassle back and forth. But in this particular case, the stuff stinks, I guess, and it is a matter of how you deal with it.

Mr. SEGAL. We do think that we have hit a middle ground, though. That is the point, which is negligence theories and new U.S.–TEA legislation is an appropriate way to address the problem. Playing the products liability lotto, we do not think is an appropriate approach to the problem.

Senator VOINOVICH. OK. Let's forget it.

Mr. Murphy?

Mr. MURPHY. Senator, let me suggest, I think there has been sort of a mischaracterization of what is being considered here. We are not talking about removing liability for remediation expenses or cleanup expenses, for the type of expenses being incurred by the city of Santa Monica. That would be unaffected by this. The polluter, the company that spills or leaks or what not, that is responsible for the impact on the groundwater supplies, would in fact have to pay for the remediation expenses. What we are talking about is a very, very limited defective product claim.

Let me suggest, sir, that one of the things when a spill does occur, for whatever reason, the impact of that spill tends to increase over time. It is very, very important when you are going to clean up a spill to move as quickly as you can, in fact many times before you can identify the responsible party. You therefore minimize the impact on groundwater. You minimize the overall expense. The tort liability system right now is impeding that action, because obviously you are exposing yourselves to potential tort liability by taking action very, very quickly.

So I think there is both a good environmental reason, as well as frankly a logical reason why we need to have a very, very limited defective product liability relief.

Senator VOINOVICH. It is like the medical errors issue.

Yes, sir, Mr. Early?

Mr. EARLY. I just wanted to point out that what Dr. Murphy is suggesting is that we put this at the feet of the gas station operator, because they are the ones who own the tanks. The important thing to understand about the product liability concept, which the jury at Lake Tahoe was persuaded of, is that the refiners knew of the dangerous nature of MTBE in groundwater and they failed to warn their customers that if they wanted to use this fuel with this product in it, that they damn well better have tight tanks. They never said anything. So these people who had, as we know, leaking tanks, and it is widely known that the tanks leak across the country, they did not know. So the kind of legal theory that is being suggested with just a little tiny protection essentially puts the water purveyors on the hook; it puts the gasoline station owners on the hook; and it takes the refiners off the hook.

Senator VOINOVICH. I am going to end the debate on this issue. There is certainly a difference of opinion. My suggestion again is that it would be good if people got together and figured out some reasonable way to deal with this, if there is a way to do it, or we will do it for you and God only knows.

[Laughter.]

Senator VOINOVICH. I have a lot of other questions here, but I can tell from the testimony here that the question I asked the

other witnesses about whether or not we ought to move forward with this legislation is problematic. The problem today we have in the country, I think—we are going to have some—we have a very fragile economy right now. It seems to me that those of us in Congress ought to be doing what we can to try to eliminate as much uncertainty as we can.

I guess the real issue is—Mr. Yoder, I will ask you this question. We may have to get into—I was just with Mr. Wagman talking with to some folks the other day about the highway bill. We may have to get into some public works programs around here. I hope not, but we may very well have to do it. For every $1 billion we spend on new highways, they tell me it is 43,000 new jobs or something like that. But we may have to start looking at some of those things.

How does this impact on your farm economy? And the other thing that I am interested in is, we passed this big farm bill. As you know, I had some real problems with it because we are borrowing the $87 billion and at the time it was passed they thought they had a surplus; that is gone. And the interest costs on that bill are another almost $30 billion. It is a lot of money. Part of the problem is that if the price is not right, then you have to go back and take advantage of the guarantee that is in the bill. Would you comment on those two things for me?

Mr. YODER. Well, the great thing about passing a renewable fuel standard is the fact that you could talk about that big farm bill that you had problems with, that has to pay farmers for low prices in commodities. Well, the beauty of this RFS with the five billion gallon usage by 2012 will save almost $6 billion of outlays for farm payments, for subsidizing low prices. This would go and be reflected in the market price.

Not only that, but I think we really underestimate the value of this whole thing is the big picture. I think that is really what we have to concentrate on, and that is the big picture. That is the fact of jobs. I mean, it has already created 192,000 jobs, and look at the jobs it will create over the next 10 years.

The other thing is like I said in my testimony, the amount of money that is regenerated in each community when those communities are reinvigorated in the very rural areas that need jobs, and the amount of money that is turned. In Minnesota alone, they have had proof that each dollar that goes through that is reflected 10 times the amount as it goes through the process. So it reinvigorates our rural communities. This is a great economic stimulus package on its own. It has got great merit for that.

The other thing that we have to look at is the fact that the RFS will give the flexibility to the petroleum blenders to remove MTBE and give them their flexibility in different parts of the country where it makes sense to use ethanol and where there might be some other problems, to go ahead and trade some credits like that. So it is win-win-win. You know, I have fought for a lot of different issues, but this is probably the most logical thing I have ever seen. It helps everything and I think that is the important thing is what it brings to the whole economy. It is good for the blenders. It is good for the farmers. It is good for the economy and it is good for environmental benefits, too, and it is also great for energy security.

The U.S. farmer is anxious and waiting to be a great part of our energy security in this country.

Senator VOINOVICH. How much impact was the compromise that we were to get last year, in terms of its impact on—you are talking about they are building more of these facilities and farmers are actually invested in these ethanol refineries I guess was that you call them, isn't it?

Mr. YODER. How much of an impact it is going to be?

Senator VOINOVICH. Yes. In other words, it seems to me there has been some acceleration of this investment.

Mr. YODER. There has been great acceleration. As a matter of fact, like I said there are 11 plants now working to go on line and there are probably another 20 to 26, the business plans that are sitting there waiting to get ready to go and have some resource funding and so forth, once we get an RSF passed, it's huge, huge.

Senator VOINOVICH. Are they borrowing this money from banks in order to go forward with this? How are you financing these things?

Mr. YODER. Actually, most of them are financed like 30 to 50 percent with the farmer-owned influence, and then the rest is borrowed from a bank. It has to have a business plan to pan out. The reason this is so important, there is a change in agriculture today, I think, where we are going to see a difference. You are going to see the scale of farmers get bigger and bigger, but you are also going to have to see a smaller farm like myself. I farm about 1,000 acres. That was one time considered to be a big farm. It is not anymore. How am I going to survive? Well, the truth of the matter is the only way I can survive is if I get more vertically integrated and invest in that next step. I need to become a middleman.

Ethanol is just the beginning of many identity to preserve opportunities, and also investments that I can go ahead and capture some of that extra value. We have to grow a more valuable product and be rewarded for it on our farms. That, to me, is the concept. This is going to be a template for many, many other types of businesses, and that is why it is so important to make sure that this ethanol industry flourishes and that we build this infrastructure so that farmers get used to investing in that next step of investment, and that is something we have not done in the past.

Senator VOINOVICH. Five billion gallons is very important. I am thinking you are going to a bank and you are saying I want to invest in this, and they want to know, well, are you going to be—is there going to be a need for this product in the future?

Mr. YODER. Well, the five billion gallon in the future, we look at that as a floor and not a ceiling. That is just a guarantee in the market of at least five billion.

Senator VOINOVICH. I am just saying, the fact that we have considered that and it looks like ethanol will be a source of fuel in the future is what encouraged bankers to come to you and say we will be willing to come up with the rest of the money and invest in this, just as we had another issue here—nuclear energy.

One of the reasons why nuclear power plants have not been built is because everyone was concerned about what are you going to do with the nuclear waste. And the fact that we got Yucca Mountain out of the way and looks like we are moving in that direction, now

you are starting to see some other plants go forward because the investment bankers are saying, well, that issue is going to be taken care of and let's invest in it. That is the point I am trying to make. So some of these things that we are discussing here have a big impact on a lot of decisionmaking.

Mr. Murphy, you wanted to speak?

Mr. MURPHY. Yes, I was just going to comment, Senator, that we estimate that if this bill does not pass and the MTBE bans in California and New York and Connecticut go ahead, we are going to have to use roughly three billion gallons of ethanol next year. That is larger than the amount that is called for under the bill. So the impact on the Highway Trust Fund is going to be there in any case, and we do need and do support and strongly are committed to fixing that and working with you and others to fix that and make sure that Highway Trust Fund is made whole.

But in fact, the Highway Trust Fund is going to be adversely impacted to a greater extent in the short term. Even in the longer term, if this bill does not pass, at the end of the period as the States ban MTBE, we are going to end up using 4.3 billion gallons of ethanol as opposed to the five billion gallons under this target, and we still have 2.5 cents per gallon, of course, going into the general trust fund.

So the Highway Trust Fund issue is there confronting us. It is a bigger issue actually if this bill does not pass. It is an issue that we strongly support addressing and will work with you and others to address that.

Senator VOINOVICH. Mr. Yoder, are you aware of that problem that was shown on the board here?

Mr. YODER. Oh, we are very much aware of the Highway Trust Fund, and we think it has to be fixed.

Senator VOINOVICH. You are going to have to be part of this, so we have got to figure that out, too. Maybe we have got—what is it?—there is a supplement of 2.5 cents we have put in then, and the incentive is how much? Another 5.2 cents. If we go forward with additional revenue enhancements, whatever you want to call them—user fees—I think that some real thought needs to be given by your folks in terms of their participating in this.

Mr. YODER. I certainly understand that. We talked earlier about how the efficiencies are greatly going to be increased. I agree 1 day we are not going to even need a subsidy, but the worst thing we can do right now is to undercut the infrastructure formation of the ethanol industry. We need to make sure that that is put in place, and then, yes, obviously there has been a tremendous amount of new efficiencies gained by ethanol production. A few years down the road I can see where it will be self-sufficient, but I do not think we are there yet. So we need to work that out.

Senator VOINOVICH. Senator Clinton has come in. Senator, I have got to terminate this hearing at least by 5 minutes to twelve, so I call upon you to make an opening statement or ask any questions.

OPENING STATEMENT OF HON. HILLARY RODHAM CLINTON, U.S. SENATOR FROM THE STATE OF NEW YORK

Senator CLINTON. I thank you, Mr. Chairman. I apologize for being late. It is one of those mornings in the Senate and this is such an important hearing. It is crucial that we air this and I appreciate this very large panel of witnesses being here, especially Mr. Paul Granger, Superintendent of Engineering and Business Administration of the Plainview Water District. I really appreciate everything you and your colleagues are doing in Long Island, Nassau County to keep our water safe and clean to drink.

As Mr. Granger said in his testimony, the Plainview Water District is located in Nassau County, New York—one of the larger water systems on Long Island. As many of our water systems out on the island are, it relies on groundwater as the sole source of drinking water for the communities it serves.

There is this long aquifer that runs the length of the island, which is a wonderful gift of nature to Long Island, but like so much else it has to be carefully monitored and tended. We have firsthand knowledge and evidence of the problems with MTBE. So I appreciate Mr. Granger being a witness in a very personal way. Mr. Granger, I would like to ask you—you mentioned that the major spill that is threatening your well, the well shown on the map—I am no sure it is this map, but one of the maps—that was reported to the State in 1997. What has been done since then to address this spill, to clean it up, to contain it, by either the responsible party or the State?

Mr. GRANGER. What is disappointing is that the groundwater contamination has not been treated whatsoever. What is very disappointing is that the polluter did not take the first fundamental step of delineating the plume. I want to clarify. We are really not dealing with a threat. We are dealing with a reality, because of the close proximity of the spill and other spills. I kind of look at it in terms of a large tidal wave building its crest and it is just a matter of time before it crashes into our facility here. So that is the issue we are dealing with here, and this photograph speaks volumes of our issue on how close it is.

Senator CLINTON. So you felt that taking legal action was really a last resort?

Mr. GRANGER. We actually found out about the spill in our own volition in 2000. The polluter nor, unfortunately, the State agency took any action to notify us. I personally was driving past the spill site and then conducted my own personal investigation. Despite November, 2000 coming and going, we are here now in the year 2003, and no action has been taken. So if you cannot obtain help from your regulatory agencies and you cannot rely on the polluter to take the proper action, then what choice do you have?

Senator CLINTON. I understand, Mr. Perkins, that legal action was the last resort in the case of Santa Monica. How would the speed at which a spill is addressed affect the cost of cleanup?

Mr. PERKINS. It would address it significantly. Once the genie is out of the bottle, is spreads very quickly and there is an exponential increase in terms of the cost of solving the problem once it has spread into an entire aquifer.

Senator CLINTON. You know, the issue that we are facing here is obviously an important one for I would argue all of the country, but certainly for those of us in New York. We have a lot of concerns about health effects. There are a number of cancer clusters out on Long Island. We are very cognizant of the environmental impact on health. I wanted to ask Mr. Early, could you point out for us, is there a map of New York State that I think was attached to Mr. Granger's testimony, where the RFG areas in New York State are located?

Mr. EARLY. Just in the lower portion of the State. I think one of the fascinating things is that that is not where all the little—there is obviously a very tight cluster in the RFG area, but that is not the only area.

Senator CLINTON. So there is no requirement to use RFG in the upstate areas, even though we are finding MTBE contamination up in the rest of the State as well?

Mr. EARLY. That is absolutely correct. You can see Rochester, Utica, Buffalo—these are not RFG areas. Presumably, the only reason the MTBE is in the fuel in those areas is because the refiners chose to put it there, presumably for octane. Either that, or they chose by themselves to take reformulated gas that they were selling in the lower part of the State and sell it as conventional gasoline in the upper part of the State.

Senator CLINTON. Is there any way we can actually discover what the answer to the question is?

Mr. PERKINS. If I can just interject, it is a very similar situation in California. There are many areas which are not RFG-required. It is really a function of the refining infrastructure. So in California, the main refineries supplying the areas that do need the RFG fuel also supply those other areas. So essentially there has been no choice. If you purchase fuel, it had MTBE in the fuel, even if you did not want it.

Senator CLINTON. Yes, Mr. Yoder?

Mr. YODER. Yes, Senator Clinton, one of the important reasons why we need a Federal phase-down is it is essentially impossible to control MTBE entering a very fungible gasoline supply system. Roughly 50 percent of the gasoline you use in New York comes from the Gulf Coast. It is shipped up through common pipelines. Unless we have a Federal phase-down, it is going to be virtually impossible for us to make sure that there is no MTBE in the gasoline.

Mr. GRANGER. We would argue for a phase-out, Senator.

Senator CLINTON. I argue for a phase-out also, and we have had more than sufficient experience in New York. Our situation on Long Island I think should be an object lesson to anyone around the country of what the consequences are. So I am very responsive to that. Can you respond to those on the panel who have testified that MTBE and other fuel additives should receive a safe harbor from liability, essentially because the Federal Government required their use? Mr. Early?

Mr. EARLY. Well, Senator, you missed a full discussion of this, but to slightly repeat myself it seems to me that the big problem is that refiners used MTBE; they knew it moved very quickly through the water; and they never told either Congress or their

customers about this problem in the fuel, because if they had then some of the customers, at least presumably, might have done a little more to ensure that their gasoline tanks were not leaking and be able to protect themselves and obviously protect the people around them.

Senator CLINTON. I did miss this whole discussion, and I know that my staff will certainly fill me in on all the details, and the Chairman has to depart. So I apologize again for not being able to get here any earlier. This is an issue of great concern to my State. Again, I would just stress, we have an obligation as we learn more about what contaminates our environment, even if it had some initially effective use predicted, but now that we know more about the downsides and the unintended consequences, not to continue making the same mistakes.

I feel very strongly that we are only at the beginning of understanding the impact on health of all of these environmental decisions. I have the greatest respect for the people who initiated this decision for what they thought of as good and efficacious reasons, but I do not think that we can let a decision that has not stood the test of time continue to stand, and then open up all new opportunities for safe havens and freedom from liability going down the same road, which really does not make any sense to me.

So thank you, Mr. Chairman.

Senator VOINOVICH. Thank you, Senator Clinton.

I think I would like to emphasize again that so many of the members of this committee have other responsibilities, and I really appreciate the fact that you came over and indicated your interest in this area, because there is a lot of work that needs to be done.

I would like to thank the witnesses for coming. I am going to hold the record open and may submit some questions to you in writing, if you would be so kind as to respond to them.

Thank you.

[Whereupon, at 11:55 a.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[Additional statements submitted for the record follow:]

STATEMENT OF HON. CHRISTOPHER S. BOND, U.S. SENATOR FROM THE STATE OF MISSOURI

Clean air is a common goal that we strive to reach and well know it can be a challenge in many locations. My home State of Missouri is no exception. We have two major municipalities who continually monitor to ensure that they stay within "attainment" levels of ozone and other air pollutants. We have made great strides in helping these cities and cities all across the Nation cleanup their air. The use of oxygenates in reformulated gasoline, as part of mandated or voluntary clean air plans, has been a great tool in these efforts. Unfortunately for clean water concerns, one of the two most widely used oxygenates, MTBE a known carcinogen, has been found in drinking water supplies.

Of course, clean air concerns are not restricted to the city limits of major municipalities. Missourians in smaller cities and in rural areas are concerned about the air that they breathe, and they obviously do not want clean air to come at the detriment of their clean water. I believe a big part of the answer for across the board clean air in both metro and rural areas lies with increased usage of cleaner burning renewable fuels, such as ethanol and biodiesel.

Ethanol is a preferred motor fuel because of its proven ability to reduce harmful vehicle emissions, thereby protecting the environment and public health. Ethanol contains 35 percent oxygen by weight. By increasing the amount of oxygen in fuel, ethanol enhances engine combustion and reduces harmful tailpipe emissions of carbon monoxide (CO), particulate matter (PM–10), oxides of nitrogen (NOx) and other

ozone-forming pollutants. Ethanol also displaces gasoline additives like benzene, a known human carcinogen, and aromatics that are highly toxic.

Gasoline engine emissions are not the only source of air pollutants. Diesel engines definitely contribute their share, but fixing this source of pollutants has proven challenging. By utilizing biodiesel and biodiesel blends there is opportunity to reduce diesel engine emissions, in both light duty and heavy-duty applications. This can be accomplished without sacrificing engine performance or forcing high costs of operation on truckers, mass transit systems, or other businesses. The use of biodiesel or biodiesel blends in conventional diesel engines results in a substantial reduction of unburned hydrocarbons, carbon monoxide, particulate matter and sulfates compared to emissions from diesel fuel. Also, in its pure form, soy biodiesel reduces lifecycle carbon dioxide emissions by 78 percent compared to petroleum diesel according to a joint DOE/USDA study.

The opportunity for enhancing our clean air efforts lies before us if we incorporate more renewable fuels, made from homegrown crops, into our fuel supplies. Ethanol and biodiesel, both have a proven track record of reducing air pollutants. Ethanol excels at improving gasoline engine emissions for most of the pollutants that we seek to decrease. Biodiesel, a proven fuel for light and heavy-duty diesel vehicles, is highly effective at reducing many of the pollutants that we target—especially particulates and sulfates. I encourage this subcommittee and the Congress to phase-out MTBE, repeal the Clean Air Act's 2 percent oxygenate requirement and replace these clean air tools with a Reformulated Fuels Standard of 5 billion gallons or more.

STATEMENT OF HON. JEFFREY HOLMSTEAD, ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Thank you, Mr. Chairman and members of the subcommittee, for the invitation to appear here today. I appreciate the opportunity to discuss the vital role cleaner burning gasoline plays in improving America's air quality and to comment on the gasoline provisions in legislation introduced by Senator Daschle and cosponsored by the distinguished chairman of this subcommittee.

The Bush Administration supported the fuel provisions of energy legislation that passed the Senate last year. That legislation would have maintained the environmental benefits of the Reformulated Gasoline program (RFG), prevented toxics backsliding, removed the RFG oxygen mandate, imposed a Federal phase-out of MTBE and included a national Renewable Fuels Standard. The Administration reaffirms its support of legislation, such as S. 385, that is consistent with this approach.

Before further discussion of this legislation, I would like to briefly review the history and development of the RFG program, and discuss its air quality benefits. I will also discuss ongoing actions by States to address water contamination resulting from leaks or spills of the gasoline additive MTBE.

History of RFG

When Congress passed the Clean Air Act Amendments of 1990, it established a number of programs to achieve cleaner motor vehicles and cleaner fuels. These programs have been highly successful in protecting public health by reducing harmful emissions from motor vehicles. In the 1990 Amendments after extensive deliberations Congress imposed major reductions from both vehicle and fuel emission control programs. The RFG program was designed to serve several goals. These include improving air quality and extending the gasoline supply through the use of oxygenates.

Congress established the overall requirements of the RFG program by identifying the specific cities in which the fuel would be required, the specific minimum performance standards, and an oxygenate requirement. The oil industry, States, oxygenate producers and other stakeholders were involved in a successful regulatory negotiation that resulted in the development of the RFG regulations in 1991. The first phase of the RFG program introduced cleaner gasoline in January 1995 to help reduce vehicle emissions that cause ozone (smog) and toxic pollution in our cities. Phase 2 of the program began in 2000 and includes more protective emission requirements.

Under the Clean Air Act, the Federal RFG program is required in ten metropolitan areas that have the most serious air pollution levels. Although not required to participate, some areas in the Northeast, in Kentucky, Texas and Missouri have elected to join, or "opt-in," to the RFG program as a relatively cost-effective measure to help combat their air pollution problems. Today, roughly 35 percent of this country's gasoline consumption is cleaner-burning reformulated gasoline. The Clean Air

Act Amendments of 1990 also required that RFG contain 2.0 percent minimum oxygen content by weight. Neither the Clean Air Act nor EPA requires the use of any specific oxygenate. Both ethanol and MTBE are used as oxygenates in the RFG program, with fuel providers choosing to use MTBE in about 87 percent of the RFG. Ethanol is used in 100 percent of RFG in Chicago and Milwaukee, which are close to major ethanol production centers.

Benefits of RFG

Unhealthy smog levels are a significant concern in this country, with over 53 million people living in counties with air quality that does not meet the 1-hour ozone standard. Since the RFG program began 8 years ago, we estimate that it has resulted in combined annual reductions of VOC and NOx of at least 105,000 tons, and at least 24,000 tons of toxic air pollutants. VOC and NOx are pollutants which in the atmosphere form ozone, commonly called smog. Ambient monitoring data from the first year of the RFG program (1995) indicated that RFG also had a positive impact on reducing toxic emissions. RFG areas showed significant decreases in vehicle-related tailpipe emissions. One of the air toxics controlled by RFG is benzene, a known human carcinogen. The benzene level at air monitors in 1995, in RFG areas, showed the most dramatic declines, with a median reduction of 38 percent from the previous year. The emission reductions that can be attributed to the RFG program are equivalent to taking 16 million cars off the road. About 75 million people are breathing cleaner air because of RFG.

Contamination of Water by MTBE

Although MTBE is a high quality blending component of gasoline, significant concern persists about its contamination of drinking water in many areas of the country. Most MTBE contamination is the result of leaks from fuel storage tanks, but some contamination has resulted from fuel spills. We now know that MTBE, if leaked or spilled, can contaminate water supplies more readily than other components of gasoline. Public concern has been focused on the issues of taste and odor associated with MTBE contamination. Current data on MTBE in ground and surface waters indicate numerous detections of MTBE at low levels. Data from the U.S. Geological Survey indicates a strong relationship between MTBE use as a fuel additive in an area and finding detections of low levels of MTBE. EPA's Office of Research and Development is continuing to assess the health effects associated with MTBE exposure. While EPA and the States have made significant strides to improve the effectiveness of the Leaking Underground Storage Tank program, MTBE contamination of groundwater persists. Most recently, Plainview, New York, Ringwood, New Jersey, Rehoboth Beach, Delaware, Yorktown, New York and Roselawn, Indiana, have experienced MTBE contamination of their water supplies. It appears that the Yorktown incident was the result of a 250 gallon spill that occurred during a gasoline delivery at a filling station. In this case the MTBE threatens to migrate into a reservoir that supplies water to roughly one million users.

As a result of existing MTBE contamination and the potential for future occurrences, 17 States have taken action to ban the use of MTBE as a gasoline additive in the future. Over the next year, MTBE bans go into effect in the States of California, Connecticut and New York At least six additional States are considering similar bans. At the Federal level, EPA published an Advance Notice of Proposed Rulemaking in 2000 requesting comments on a phase-down or phase-out of MTBE from gasoline under Section 6 of the Toxic Substances Control Act (TSCA). TSCA is the only administrative mechanism available to EPA for limiting or eliminating the use of MTBE. TSCA gives EPA authority to ban, phase-out, limit or control the manufacture of any chemical substance deemed to pose an unreasonable risk to public health or the environment. But the TSCA process is cumbersome and lengthy at best.

EPA's Perspective on National Fuels Legislation

Because actions taken by individual States to control or ban the use of MTBE as a fuel additive are not uniform or coordinated, they can create concerns about fuel distribution. For example, when the MTBE bans take effect in less than 12 months in Connecticut and New York, fuel providers will not be permitted to supply MTBE-containing gasoline in those two States, yet neighboring States in the Northeast will continue to allow MTBE in gasoline. Such a patchwork approach of State requirements will likely complicate the distribution of gasoline in that part of the country. A significant portion of the gasoline supplied to the Northeast comes through pipelines from the Gulf region, but variations in State laws affecting gasoline could potentially lead to supply constraints as refiners and distributors struggle to ship complying fuel to individual States.

The provisions in S. 385, however, would help to address this situation in several ways. The bill would (1) maintain the air quality benefits of the clean fuel programs, such as RFG, (2) remove the 2 percent oxygenate requirement under the RFG program, (3) phase-out the future use of MTBE across the Nation while allowing sufficient leadtime for refiners and MTBE producers to switch production to other gasoline blendstocks, and (4) implement a Renewable Fuels Standard that encourages positive life cycle renewability through the use of domestically produced renewable fuels through a national credit averaging and trading program. It should be noted that in order to enhance the flexibility of these provisions, States may opt out of the MTBE ban and request waivers of the Renewable Fuel Standard.

The Administration supports these provisions and we may offer additional views on the specifics of S. 385. The changes outlined in S. 385 are needed now and are supported by what we have learned about cleaner burning fuels since 1990. In 1990, the RFG oxygen requirement was established by Congress to meet multiple goals: improve air quality, enhance energy security, and encourage the use of renewable fuels. We now know that there are better ways to achieve these worthy goals.

We and other Federal agencies are committed to working with Congress to explore ways to maintain or enhance environmental benefits of clean fuels programs while exploring ways to increase the flexibility of the fuels distribution infrastructure, improve fungibility, and provide added gasoline market liquidity. We stand ready to work with this subcommittee as it seeks to enact fuels legislation, such as S. 385. The timely enactment of these fuel provisions is essential. The clean fuel programs I have talked about today are critical to our nation's efforts to reduce the harmful effects of air pollution and any legislation must prevent environmental backsliding.

This concludes my prepared statement. I would be pleased to answer any questions that you may have.

RESPONSE OF JEFFREY HOLMSTEAD TO ADDITIONAL QUESTION FROM SENATOR JEFFORDS

Question. Please provide the Committee with an updated list of studies completed or underway, and any other recently published findings, on the public health and environmental effects of ethanol, biodiesel, ETBE, and other renewable fuels, as collected through the use of the authority under the Clean Air Act section 211(b) and (c), or made available through other authorities or means.

Response.

Completed Studies:

"Analysis of the Economic and Environmental Effects of Ethanol as an Alternative Fuel," April 1990, Office of Mobile Sources, U.S. Environmental Protection Agency.

Alternative Fuels Research Strategy [External Review Draft]. Office of Research and Development, U.S. Environmental Protection Agency, Research Triangle Park, NC, EPA report no. 600/AP–92/002, 1992

"Health Risk Perspectives on Fuel Oxygenates," December 1994, Office of Research and Development, U.S. Environmental Protection Agency.

"Auto/Oil Air Quality Improvement Research Program, Technical Bulletin No. 16, Exhaust Emissions of E85 Ethanol Fuel and Gasoline in Flexible Fuel Vehicles," July 1995, Coordinating Research Council.

Proceedings of the "Conference on MTBE and Other Oxygenates: A Research Update," Falls Church, Virginia, July 26–28, 1993. Office of Research and Development, U.S. Environmental Protection Agency, Research Triangle Park, NC, EPA report no. EPA/600/R–95/134, 1995

Oxyfuels Information Needs. U.S. Environmental Protection Agency, Washington, DC, EPA report no. 600/R–96–069, 1996

"Interagency Assessment of Potential Health Risks Associated with Oxygenated Gasoline," February 1996, National Science and Technology Council, Committee on Environment and Natural Resources, and Interagency Oxygenated Fuels Assessment Steering Committee.

Health Effects Institute. The potential health effects of oxygenates added to gasoline: a review of the current literature, a special report of the Institute's Oxygenates Evaluation Committee. Health Effects Institute, Oxygenates Evaluation Committee, Cambridge, MA, 1996

National Research Council; Committee on Toxicological and Performance Aspects of Oxygenated and Reformulated Motor Vehicle Fuels. Toxicological and performance aspects of oxygenated motor vehicle fuels. National. Academy Press, Washington, DC, 1996

"Final Report—CAA 211(b) Literature Search and Summary Information for Diesel Exhaust, Gasoline Evaporative Emissions, and Gasoline Exhaust," March 14, 1997, American Petroleum Institute (API). This report includes the following studies relevant to renewable fuels:

API In-House Literature Electronic Bibliographical Index

Report ID Code 1487—Four week subchronic inhalation toxicity study in rats of ethyl tert-butyl ether (ETBE), 19.91.

Report ID Code 1754—Letter to EPA on 8(d) and MTBE conference on odor threshold studies performed with gasoline and gasoline combined with MTBE, ETBE, and TAME, 1994.

Report ID Code 2168—Disposition and acute effects of inhaled MTBE and ETBE in male volunteers. Reference no. 1594. International Congress of Toxicology—VII meeting abstract form, 1995.

Report ID Code 3483—Acute inhalation toxicity study of ethyl-t-butyl ether (ETBE) in rats. Final report. IITRI project no. L8100. IIT Research Institute, 1989.

Report ID Code 4148—Four-week inhalation toxicity study of Ethyl tert-butyl ether (ETBE) in rats. Final Report. IITRI project no. L08100. Study no. 1544, 1991.

Report ID Code 4370—Odor threshold studies performed with gasoline and gasoline combined with MTBE, ETBE and TAME. Final report. Publication no. 4592, 1993.

Report ID Code 4637—Abbreviated primary eye irritation study of ethyl-tert-butyl ether-(ETBE} irrrabbits. Study.no,.,14931, 1989.

Report ID Code 5616—Service Station personnel exposures to oxygenated fuel components, 1994. Publication no. 4625, 1995.

Report ID Code 6614—The effect of gasoline composition on regulated and unregulated emissions, air toxics and ozone formation. A cooperative program with BMW. Report no. 93.001, 1993.

"Emissions Characterization of Baseline Gasoline and Gasoline Oxygenate Blends Under Tier 1 of the CAA 211(b) Fuels and Fuel Additives Registration Regulations," 1997, Southwest Research Institute.

"Interagency Assessment of Oxygenated Fuels," June 1997, National Science and Technology Council, and Committee on Environment and Natural Resources.

"Biodiesel Tier 1 Requirements, Literature Search, Characterization of Emissions," 1998, National Biodiesel Board.

Oxygenates in Water: Critical Information and Research Needs. U.S. Environmental Protection Agency, Washington, DC, EPA report no. 600/R–98/048, 1998

"Achieving Clean Air and Clean Water—The Report of the Blue Ribbon Panel on Oxygenates in Gasoline," September 1999, Clean Air Act Advisory Committee, U.S. Environmental Protection Agency.

"Biodiesel Tier II: 90 Day Sub-Chronic Inhalation Study of Exhaust Emissions as Required Under Section 211(b) of the Clean Air Act," 2000, National Biodiesel Board.

"Reactivity comparison of Exhaust Emissions from Heavy-Duty Engines Operating on Gasoline, Diesel, and Alternative Fuels," Southwest Research Institute.

"Impact of Biodiesel Fuels on Air Quality and Human Health: Task 2 Report—The Impact of Biodiesel Fuels on Ozone Concentrations," May 2003, National Renewable Energy Laboratory.

Secondary Peer Review of the California Environmental Policy Council Report on Ethanol. Versar, Inc., Contract 68-C–9–238, Task Order 72, for J. Michael Davis, U.S. Environmental Protection Agency, National Center for Environmental Assessment, Research Triangle Park, NC, 2003.

Draft Studies

"A Comprehensive Analysis of Biodiesel Impacts on Exhaust Emissions—Draft Technical Report," October 2002, U.S. Environmental Protection Agency.

"Ethanol Gasoline Vapor Condensate—One Generation Whole Body Inhalation Reproductive Toxicity Study in Rats," October 2002, Huntington Life Sciences.

"Evaluation of the Tier 1 and Tier 2 Biodiesel Health Effects Testing Requirements," October 31, 2002, Versar, Inc.

"Ethanol Gasoline Vapor Condensate—13 Week Whole Body Inhalation Toxicity Study in Rats with Neurotoxicity Assessment and 4 Week In Vivo Genotoxicity and Immunotoxicity Assessments," December 2002, Huntington Life Sciences.

"Ethyl Tertiary Butyl Ether Gasoline Vapor Condensate—One Generation Whole Body Inhalation Reporductive Toxicity Study in Rats," February 2003, Huntington Life Sciences.

"Ethyl Tertiary Butyl Ether Gasoline Vapor Condensate—13 Week Whole Body Inhalation Toxicity Study in Rats with Neurotoxicity Assessment and 4 Week In

Vivo Genotoxicity and Immunotoxicity Assessments," May 2003, Huntington Life Sciences.

Studies Underway for Gasoline/Ethanol and Gasoline/ETBE Blends for Evaporative Emissions: (All or portions of these studies may have been completed in draft form as indicated above.)

Subchronic Inhalation Toxicity Study, with Specific Health Effect Assesments

Fertility/Teratology Assessment which includes animal studies designed to provide information on potential health hazards to the fetus arising from the mother's repeated inhalation exposure to evaporative emissions before and during her pregnancy.

In vivo Micronucleus Assay which is an in vivo cytogenetic test which uses erythrocytes in the bone marrow of animals to detect chemical damage to the chromosomes or mitotic apparatus of mammalian cells.

In vivo Sister Chromatid Exchange Assay to detect the ability of a chemical to enhance the exchange of DNA between two sister chromatids of a duplicating chromosome.

Neuropathology Assessment including histopathological and biochemical techniques designed to develop data in animals on morphologic changes in the nervous system associated with repeated inhalation exposures.

Glial Fibrillary Acidic Protein Assay to determine chemically induced injury to the brain and central nervous system.

Histopathology Assessment including preparation of the animals targeted for pathologic examination of the lungs shall include inflation of the lungs with fixative which will permit later examination of the lung tissues by electron microscopy, if followup to light microscopy is indicated. In addition, respiratory tract histopathology shall be conducted.

Immunotoxicity Screening describing the performance and analysis of the required primary antibody response (IgM) to sheep red blood cell antigen by either the Jerne and Nordin splenic antibody plaque forming cell assay of by an enzyme-linked immunosorbent assay (ELISA).

Inhalation Pharmacokinetic Studies which develop and validate a physiologically based pharmacokinetic (PBPK) model to quantitatively describe test substance disposition (uptake, distribution, metabolism and elimination).

Research on remediation of fuel oxygenates, including monitoring the fate, transport, and/or degradation of ethanol and ETBE. U.S. Environmental Protection Agency, Office of Research and Development, National Risk Management Research Laboratory, in progress.

Screening Life Cycle Assessment of Fuel Additives. U.S. Environmental Protection Agency, Office of Research and Development, National Risk Management Research Laboratory, in preparation.

IRIS, Integrated Risk Information System [data base]. Ethanol. U.S. Environmental Protection Agency, Office of Research find Development, National Center for Environmental Assessment, in preparation.

Pharmacokinetics and odor thresholds of ether oxygenates [including ETBE] in young and older human subjects. U.S. Environmental Protection Agency, Office of Research and Development, National Health and Environmental Effects, in planning stage.

Comprehensive Environmental Assessment of Reformulated Gasoline Oxygenate Options: MTBE, Ethanol, and no oxygenate. U.S. Environmental Protection Agency, Office of Research and Development, National Center for Environmental Assessment, in planning stage.

STATEMENT OF DAVID K. GARMAN, ASSISTANT SECRETARY FOR RENEWABLE ENERGY, U.S. DEPARTEMENT OF ENERGY

Thank you for the opportunity to discuss the prospects for renewable fuels such as ethanol and biodiesel, as well as legislative proposals to promote the use of renewable fuels and additives.

Biofuels can play an important role in reducing our dependence on foreign oil while reducing emissions of criteria pollutants and carbon dioxide. The Administration supports legislation such as S. 385 that phases out the use of MTBE across the country in a reasonable timeframe and in the context of a national Renewable Fuels Standard (RFS) designed to achieve a five billion gallon annual average use target by the year 2012.

Getting to this level of production and beyond will be a challenge. According to the Energy Information Administration, the U.S. ethanol industry produced 2.13 bil-

lion gallons in 2002. According to the Renewable Fuels Association, currently 70 plants have a capacity of producing over 2.75 billion gallons per year, with an additional 500 million gallons of capacity under construction. During the last Congress, the Energy Information Administration prepared several analyses of an RFS and related provisions affecting the use of fuel additives at the request of the Senate.

The expanded capacity needed to reach the 5 billion gallon target will depend on starch, primarily from corn. There is an ongoing debate over just how much ethanol can be produced from feed grains. Secondary effects such as impacts on food and feed markets, by-product market saturation, the sustainability of production on marginal agricultural lands and environmental impacts from agricultural production in general become more acute as biofuels production solely from food grains increases substantially above five billion gallons per year.

Because we want renewables to play an even greater role in displacing some of the roughly 136 billion gallons of gasoline and 33 billion gallons of highway diesel we use each year, we must look beyond starch-based ethanol if we wish to have the impact we desire. S. 385 explicitly recognizes the need for new technologies through provisions that provide extra RFS credits for ethanol produced from cellulosic materials. The Department of Energy (DOE) has been focusing on a research and development (R&D) program to develop cellulosic-based ethanol that could be produced from many types of agricultural resources, residues, and energy crops. In addition, the aggressive fire-supression policies of the past have led to a dangerous buildup of fuels in many of the nation's forests. The fuels reduction efforts will yield cellulosic materials in the form of brush and small diameter trees that could be converted into liquid fuels.

According to the Oak Ridge National Laboratory (ORNL), there are about 500–600 million tons of biomass residue and waste generated per year. Some of these residues need to remain in the fields to maintain soil nutrient levels, but much of the remainder can be used for ethanol production if affordable methods of collection, transportation, and conversion are developed.

Success in converting these cellulosic materials into ethanol will depend in part on the continued development of enzymes that break down the cellulosic materials into shorter chains of fermentable sugars. We have demonstrated the ability to do this . . . but at greater expense and difficulty compared to starch-based approaches. So our R&D program will work to continue to bring down the costs and complexity of cellulosic conversion.

But our approach to using the nation's supply of biomass is not limited to liquid fuels such as ethanol and biodiesel. Biomass can be converted to a multitude of products for everyday use. In fact, there are very few products that are made today from a petroleum base that cannot also be produced from biomass. Paints, inks, adhesives, plastics, fibers and a variety of value-added products and chemicals currently produced from oil can be produced from biomass. In addition, biomass can also be used to produce heat and electricity.

So we are thinking beyond ethanol to the full range of power, products, and liquid fuels that can be produced from biomass. Achieving competitive production focused only on producing fuels or products or power is extremely difficult. However, if one pursues an integrated approach to the production of liquid fuels, power and products simultaneously in an integrated biorefinery, process synergies can improve the economics of production significantly.

Put another way, we are working toward the day when rural economies are revitalized through the domestic production of biomass feedstocks used to produce a wide variety of products, fuels and power in integrated biorefineries—displacing fuels and products we currently derive from imported petroleum.

Pursuant to the Biomass R&D Act of 2000, the Department of Energy has been working with the Department of Agriculture (USDA) to expand the economic prospects and environmental promise of biomass. I am privileged to serve as the Co-Chairman of the Biomass R&D Board with Agriculture Undersecretary Mark Rey. Other members of this Federal agency biomass coordination group include the Department of Interior, the National Science Foundation, the Environmental Protection Agency, the Office of Science and Technology Policy, and the Office of the Federal Environmental Executive.

The counterpart group created under the Act is the Biomass Research and Development Technical Advisory Committee. This committee consists of 31 members from the biomass community that include high-level representatives of industry, academia the farming community, technology developers, States and environmental and conservation entities. Last year, after a collaborative public process, the Technical Advisory Committee developed a Roadmap for Biomass Technologies in the United States. That roadmap is focused, among other things, on achieving the chal-

lenging goal of deriving 20 percent of our transportation fuel from biobased sources by 2030.

We are also taking direction from the Food Security and Rural Investment Act of 2002, commonly referred to as the 2002 Farm Bill. Title IX of the Farm Bill includes sections addressing the Federal procurement of biobased products; biorefinery grants; biodiesel education; the continuation of the Bioenergy program to provide up to $150 million for farmers to produce ethanol and biodiesel; and further funding under the Biomass R&D Act of 2000.

This last provision under the Biomass R&D Act has led to a joint solicitation between USDA and DOE to competitively award funding for breakthrough technology development. This is an unprecedented level of cooperation between our two agencies. The Departments have issued this week a solicitation with the same scope of work with individual agency program selection priorities based on their respective departmental missions. One merit review committee will review all proposals, and source selection officers from each department will make selections from the same merit review evaluation. This has required a much higher level of interaction between the Departments, and a much closer working relationship. DOE also learned a great deal from last year's competitive biomass solicitation, although it was not nearly as coordinated with USDA as this year's solicitation. As a consequence of last year's solicitation, we received almost 200 proposals for work to be 50 percent cost-shared with industry. After careful review, we are funding $75 million to six projects, mostly tied to the production of inexpensive sugars from cellulosic sources that can be converted to fuels and chemicals—work that is critical to the development of integrated biorefineries.

Prior to last year, DOE biomass programs had been organized in a fragmented way with separate offices for the production of biofuels, biopower, and bioproducts. I reorganized my office last year, placing this scattered work under a single biomass office. Research within the new office is now organized and focused on two technology platforms, with the intent of advancing the technology needed for integrated biorefineries. These platforms are known as the "Sugars Platform" and the "Syngas Platform." The Sugars Platform follows the biochemical route and involves the breakdown of biomass by enzymes into component sugars, which are fermented to produce a potentially wide range of fuels and products. The Syngas or Synthesis Gas Platform involves gasifying biomass to simple chemical building blocks which can be transformed to fuels, products, power, and hydrogen. The linkage to hydrogen is one I would like to stress in particular.

As this subcommittee is aware, we have made tremendous progress in reducing pollutant emissions from our cars and trucks as well as our stationary power sources, and we will continue to make incremental gains through regulatory approaches such as EPA's Tier II tailpipe and fuel standards for passenger vehicles. But we ultimately want a transportation system that is free of dependence on foreign energy supplies and emissions-free. We also want to preserve the freedom of consumers to purchase the kind of vehicles they want to drive. That is the concept behind the FreedomCAR partnership and Hydrogen Fuel Initiative, which are designed to develop the technologies necessary for hydrogen fuel cell vehicles and the infrastructure to support them.

Secretary Abraham unveiled the FreedomCAR partnership in January 2002 at the North American Auto Show in Detroit with the major U.S. automakers by his side. And President Bush unveiled the Administration's Hydrogen Fuel Initiative during his State of the Union address in January. As the President put it:

"With a new national commitment, our scientists and engineers will overcome obstacles to taking these cars from laboratory to showroom, so that the first car driven by a child born today could be powered by hydrogen and pollution free."

Producing the hydrogen necessary for the President's vision will require a variety of domestic feedstocks, and biomass can play a crucial role. We believe that the Nation's energy sector may be able to produce, on an annual basis, as much as 40 million tons of hydrogen—enough to power 100 million fuel cell vehicles—from 500–600 million tons of biomass residues and waste.

In so doing, we will not only be producing a clean, domestic energy carrier to power emission free cars, we will be helping to reverse the economic fortunes of rural America. This is indeed an exciting prospect that I appreciate the opportunity to share with you this morning. With that, I will be pleased to answer any questions you may have today or in the future.

STATEMENT OF FRED YODER, PRESIDENT, NATIONAL CORN GROWERS ASSOCIATION (NCGA)

Chairman Voinovich, Ranking Member Carper, thank you for giving me the opportunity to testify before this subcommittee talk to you about a key issue in our world today—energy independence.

My name is Fred Yoder, President of the National Corn Growers Association (NCGA). I farm 1,100 acres of corn, soybeans and wheat, Mr. Chairman, in our home State of Ohio.

NCGA BACKGROUND

As a little background, the National Corn Growers Association is a federation of State organizations, corn boards, councils and commissions.

The National Corn Growers Association's mission is to create and increase opportunities for corn growers in a changing world and to enhance corn's profitability and usage across this country.

NCGA was founded in 1957 and today represents more than 32,000 dues-paying corn growers from 48 States, with 25 affiliated State corn grower organizations and hundreds of thousands of growers who contribute to State checkoff programs. NCGA, and its member States, have made passage of a renewable fuels standard the organization's No. 1 legislative priority for 2003.

For more than 20 years, the NCGA has worked side by side with farmers, industry and government to build the ethanol industry from the ground up. There can be little debate that the results add up to a bona fide success story.

RENEWABLE FUELS STANDARD

The No. 1 legislative priority for NCGA for this year is the implementation of renewable fuels standard (RFS) legislation.

The NCGA has long been a proponent of the expansion of ethanol, and encourages grower investment as new facilities come online—and we will continue to educate growers on the process required to build an ethanol facility.

Over the last few years, the NCGA has worked hard in Washington, DC, to get an RFS. In fact, this week, NCGA sponsored a rally where Members of Congress, growers throughout the country, and industry leaders united around a specific message. The message being, an RFS can help us fix some of our long-term obstacles facing agriculture, while at the same time playing a critical role in our nation's comprehensive energy policy, thus making us less dependent on foreign oil.

There are other positive impacts an RFS will have. With an RFS we will reduce the cost of the Farm Bill by raising the price of corn, creating more value added opportunities through farmer owned cooperatives, making us less dependent on foreign oil, and strengthening our sagging rural economy.

NCGA believes ethanol provides energy security for the United States and we have the necessary resources to make a significant contribution to our domestic fuel supply. If successful, an RFS will more than triple the size of the ethanol market within the next 10 years.

On February 13, we took one step closer to making that priority a reality, Mr. Chairman, when you joined Sens. Tom Daschle (D-SD), and Dick Lugar (R-IN) to introduce the Fuels Security Act of 2003.

The NCGA is encouraged by this legislation, which was introduced by a bipartisan group of Senators who are united in supporting a bill that bans MTBE nationwide, strengthens air quality regulations, provides refiner flexibility, establishes an RFS, and marketplace provides certainty to our nation's farmers. Under the leadership of Reps. Collin Peterson (D-MN) and Tom Osborne (R-NE), the House of Representatives introduced companion legislation.

One part of this legislation is a national RFS, which will triple the use of ethanol over the next 10 years. The key provisions of this bill are identical to RFS legislation introduced in the 107th Congress. The legislation is the Fuels Security Act of 2003 (S. 385/H.R. 837).

Specifically, these key provisions are:

- An RFS in which part of our nation's fuel supply, growing to 5 billion gallons by 2012, is provided by renewable, domestic fuels such as ethanol and biodiesel;
- Eliminating the Federal reformulated (RFG) oxygen requirement;
- Phasing down the use of MTBE in the U.S. gasoline market over 4 years; and
- Enhancing the air quality gains of the reformulated gasoline program.

BENEFITS

There is an evolution taking place across America's corn belt. A vision is being created to enhance value added agriculture. Investments in value added agriculture will foster a healthier agricultural structure and are necessary for thriving rural communities.

Time and time again we see boosts in local economies when renewable fuels come into the picture. Investment capital comes to "Rural-Town USA" when an ethanol plant is built. Local labor is hired. Local supply industries are tapped. And crops from local producers are consumed and made into ethanol.

Paid wages paid, and extra income from crops come back into the community, stimulating economic growth needed to create opportunities and revitalize many sagging rural economies.

A study by the Minnesota Department of Agriculture estimated that the State's push to blend 10 percent ethanol in all gasoline created about 5,000 new jobs in less than a decade, and boosted payrolls by $115 to $124 million. Overall, the State's ethanol production, which is produced largely through farmer co-ops, generates $403 million to $437 million for the local economy.

The passage of the renewable fuels legislation is a start in this process. Increasing the use of renewable fuels from the current 1 percent to 5 percent of motor vehicle fuel would displace 302 million barrels of crude oil annually between now and 2016.

Farm income and the economies of rural communities would receive a significant boost in the process. As investments in farmer-owned ethanol co-ops and higher grain prices generate new income, farmers could receive an extra $6.6 billion of net cash income over the next 15 years.

FARMER OWNED COOPERATIVES

Growth in farmer owned cooperatives continues to expand vastly. Coupled with an RFS, we must also continue to expand incentives for smaller ethanol producers.

Under current law, small ethanol producers are allowed a 10-cents-per-gallon production income tax credit on up to 15 million gallons of production annually. The credit is capped at $1.5 million per year per producer. The provision applies to all small ethanol producers except those organized as farmer cooperatives.

Unfortunately, due to their unique structure, farmer cooperatives are precluded from taking advantage of this credit. Farmer cooperatives are businesses, owned and controlled by farmers. The credit was created as an incentive for farmers' involvement as small ethanol producers.

Unfortunately, the effect of the credit as currently designed actually works as a disincentive to farmers organized as a cooperative.

At the beginning of the 108th Congress, a stand-alone measure was introduced by Sens. Peter Fitzgerald (R-IL), and Tim Johnson (D-SD) that would allow small ethanol producer cooperatives to take advantage of this tax incentive. You may recall, similar legislation that would modify the Small Ethanol Producer Tax Credit was included in the Senate's energy bill during the 107th Congress.

Specifically, this legislation would:

- Allocate the ten-cents-per-gallon production income alcohol fuels credit to the members of a farmer cooperative;
- Change the definition of a "small ethanol producer" from 30 million gallons per year to 60 million gallons per year;
- Allow the credit to be claimed against the alternative minimum tax; and
- Repeal the rule that the amount of the credit is included in the income of the small ethanol producer.

Additionally, I am very encouraged that recently the chairman of the Finance Committee, Sen. Charles Grassley (R-IA), and Sen. Max Baucus (D-MT) made this part of their energy tax package, which will be part of the next energy bill. They deserve credit for this important and key step.

HIGHWAY TRUST FUND

Mr. Chairman, as we approach this year's debate on TEA–21 reauthorization, there is one issue of great interest to the NCGA. That issue is the preservation of the tax incentive for those producers who blend ethanol with gasoline.

As you know, in order to encourage the use of renewable fuels, Congress provided blends of gasoline and ethanol with a lower rate of tax than that imposed on gasoline. More specifically, refiners and gasoline marketers using 10 percent ethanol blends receive a 5.2 cent per gallon reduction from the tax paid on straight gasoline.

This tax incentive has made a tremendous contribution in rebuilding rural America through the building of farmer-owned cooperatives, which has provided localities

with jobs and extended the tax bases, while increasing the value of corn. Taxpayers benefit because reduced farm program costs and increased income tax revenue attributable to the Federal ethanol program provide a net savings to the U.S. Treasury of $3.6 billion a year.

Since Federal motor fuel taxes are a primary source of funding for highway programs, the issue has arisen as to the revenue impact of ethanol-blended fuels on the Highway Trust Fund (HTF). The NCGA fully understands the concerns Members of Congress may have about retaining this tax incentive, as it may divert funds from the HTF.

Our members strongly support full funding of the HTF and are committed to resolving this matter. The NCGA is working with Members of Congress to retain the important tax incentive, while also making sure the HTF is whole.

CLOSING

As I stated earlier, passage of an RFS is the No. 1 legislative priority of the National Corn Growers for 2003.

I know we can work together in developing a comprehensive energy package that includes possibilities for renewable fuels like ethanol. I believe we can work together to make the RFS part of America's long-term energy policy. Together, we can continue to grow a healthier U.S. economy. And work toward greater energy security and a cleaner environment.

In closing, energy independence is a vital component to our national security. The NCGA stands ready to play its part. Renewable fuels like ethanol can contribute to that security, by making us less dependant on foreign oil.

Chairman Voinovich, Ranking Member Carper, and members of the committee, thank you for the opportunity to testify today on this timely and important issue. The NCGA looks forward to working with you in advancing ethanol friendly legislation during the 108th Congress. Thank you.

STATEMENT OF DR. EDWARD MURPHY, AMERICAN PETROLEUM INSTITUTE

Thank you, Mr. Chairman and members of the subcommittee. My name is Edward Murphy and I am the Downstream General Manager for the American Petroleum Institute (API), a trade association representing more than 400 companies from all sectors of the oil and natural gas industry.

API appreciates this opportunity to address the fuels supply problems facing U.S. fuel providers and consumers. Time is of the essence because individual State MTBE bans will start to take effect soon, with Connecticut's starting in October and New York's and California's bans beginning in January 2004. Differing start dates and gasoline requirements from various States, combined with a Federal oxygen content requirement for reformulated gasoline (RFG), will complicate an already tight fuels system and increase the potential for disruptions in the supply and distribution system.

As Congress considers a comprehensive national energy bill, we urge it to address problems with fuel supplies that have plagued the petroleum industry and energy consumers over the last 8 years.

Solutions Needed to Fuels Problems Facing the Nation

We believe Congress should repeal the oxygen content requirement for reformulated gasoline that is in the Clean Air Act and require a national phase-down of MTBE. As part of the package that meets these objectives, we also support a renewable fuels standard that phases up to 5 billion gallons over several years nationally, with an averaging and credit trading program to allow the use of renewable fuels where most feasible and cost-effective. In addition, we support provisions that would protect and enhance the environmental benefits already achieved from reformulated gasoline.

Repeal of the oxygen requirement and a significant reduction in the use of MTBE were two of the key recommendations of the U.S. Environmental Protection Agency's 1999–2000 Blue Ribbon Panel on Oxygenates in Gasoline. The report is also important because it recognizes that refiners today can provide clean-burning reformulated gasoline without the oxygen requirement. Three years have passed since those recommendations were made.

These steps are a much better solution than the alternative—which is continued State MTBE bans and further aggravation of the already-troublesome situation of a patchwork of fuels requirements across the country. A solution that relies on State-by-State MTBE bans to fix the problem is not efficient and will exacerbate supply problems that are likely to arise out of uncoordinated and disjointed State

requirements. Unique State fuel requirements isolate affected markets and, in the event of a supply disruption, could cause shortages and price volatility, as experienced in two of the last 4 years in Chicago and Milwaukee. Sixteen States already have enacted MTBE bans or caps and additional States are considering bans.

In addition, there needs to be recognition that even without Federal legislation, ethanol is going to be in our gasoline system in increased amounts—at a minimum to fulfill the Federal oxygen content requirement for RFG. But the current rules allow little flexibility in how, when, and where ethanol would be used. We need a Federal solution that phases down MTBE in a uniform manner and allows the use of renewable fuels where it makes the most economic sense.

The Federal RFG Oxygen Requirement and State MTBE Bans

Let me briefly review the situation we face: In 1990, Congress amended the Clean Air Act to require the use of RFG in areas with the worst ozone pollution. Congress decided that RFG had to meet certain emissions performance standards but also had to include a specific amount of oxygen. The two most widely used oxygenates at the time were MTBE and ethanol. Most of the RFG oxygenate demand was on the coasts, where ethanol use faced significant economic, transportation, and handling challenges relative to MTBE. As a result, as Congress full well expected, MTBE became the most commonly used oxygenate in areas near the coast. Ethanol became the oxygenate of choice in the Midwest due to favorable economics and proximity to ethanol supply. However, when gasoline was spilled or leaked and MTBE came into contact with water supplies, odor and taste issues arose with even very small concentrations of MTBE.

Many State governments reacted by banning the use of MTBE. Unfortunately, there is considerable variation in the start dates and requirements for these laws. For example, Connecticut's ban starts on October 1, 2003, while neighboring New York's starts on January 1, 2004. Some allow incidental amounts of MTBE to remain, while others do not. Differing State gasoline requirements will complicate and increase the likelihood of disruptions in the supply/distribution system; this will place considerable stress on the efficiency and, therefore, the reliability of the gasoline distribution system—unless Federal legislative changes are made to the fuels provisions of the Clean Air Act.

Harmful Effects of State MTBE Bans

In the absence of Federal legislation, consumers will be subject to the uncertainties posed by uncoordinated State actions. Individual States are restricting the use of MTBE, but they cannot change the Federal RFG oxygen content requirement. That requirement is unnecessary, uneconomical and inflexible. It requires the use of an oxygenate in each gallon of gasoline in RFG areas. It is driving New Hampshire, for example, to opt-out of the Federal RFG program and try to impose a State oxy-flexible RFG program, which could add yet another boutique fuel to the system if they are successful. Maintaining the status quo—with the Federal RFG oxygen requirement in place and States continuing to ban MTBE—will require using ethanol in RFG areas where it may not be cost-effective. Alternatively, other States may pursue solutions that further fragment the market in new and different ways.

Currently, most of the RFG is required on the east and west coasts, yet ethanol is predominantly manufactured in the Midwest. As additional State MTBE bans start to take effect, RFG markets will, by default, need to use ethanol in each and every gallon of RFG in order to meet the Federal oxygen content requirement. The Connecticut, California and New York MTBE bans alone are expected to result in ethanol demand in those States of about 1.1 billion gallons in 2004. There are no assurances that the full extent of the infrastructure needed to transport the added amount of ethanol will be in place in time to assure a smooth transition. As States get closer to the implementation date for their fuel programs, the greater the temptation to change the date rather than deal with the uncertainty. California has already delayed its ban once. Such a changeable environment does not make the investment decision process easier. A Federal solution would remove much of the uncertainty that exists now.

Individual State bans have the effect of balkanizing the fuels markets, requiring that fuels with different characteristics be moved through the limited distribution system. With more types of fuels comes more complexity and less flexibility as the fuels used under one set of requirements may not be used to supply an area with other requirements. This is a problem where adjacent States require different grades. It is also harder to ensure that gasoline with MTBE does not intermingle with other gasoline volumes since all gasoline is moved via the same pipelines.

These factors all argue for a national phase-down of MTBE. In order for such a phase-down to have the least impact on supply, it needs to be done over a 4-year timeframe.

Increasing Use of Renewable Fuels

While oxygenates are not necessary to make clean-burning fuels, there is a public desire to increase the use of renewable fuels, such as ethanol. We believe this goal and that of a flexible gasoline distribution system can be met by a repeal of the Federal oxygen requirement, a uniform nationwide phase-down of MTBE, and a renewable fuels standard rising to 5 billion gallons over several years. However, for the renewable fuels standard to function effectively, it is absolutely critical that refiners be allowed to freely buy and sell credits for renewable fuels under a national average and credit-trading program. That would allow for flexible and economical use of renewable fuels.

Let me emphasize that the cost of an approach that includes a Federal phase-down of MTBE, repeals the Federal RFG oxygen content requirement and includes a renewable fuels standard with a flexible national averaging, banking and trading program, would be less than maintaining the status quo of State MTBE bans and maintaining the Federal RFG oxygen requirement. A study by the U.S. Department of Energy (DOE) revealed that the cost of the renewable fuels standard would be minimal, between 0.5 and 1.0 cents per gallon and likely less with an effective banking and trading system. Importantly, a state-of-the-art study in 2002 by MathPro, Inc., a leading economic analysis firm, concluded that replacing the 2 percent oxygen requirement with the renewable fuels standard would be less costly than the status quo outcome of continued State MTBE bans and continuation of the Federal RFG oxygen requirement.

The Need for Limited Liability Protection

Finally, we support limited liability protection that recognizes that when Congress mandates the use of fuels components, and when those components have been studied and approved by EPA, it is reasonable to disallow a case in which the mere presence of a renewable fuel or additive in the gasoline makes it a "defective" product. We believe the coalition's safe harbor provision strikes a balance between the interests of providing limited liability protection for using an additive that was approved for that purpose and providing legal remedies to injured parties. This narrowly tailored provision only applies to design and manufacturing defective product claims under products liability law. It would not affect the "failure to warn" defective product claim or other tort remedies, such as negligence, trespass, and nuisance.

Moreover, the safe harbor provision would not affect liability under Federal and State environmental laws, and therefore would not affect response, remediation and clean-up. Federal and State environmental statutes such as the underground storage tank laws under RCRA would still apply if gasoline was released and got into a well or contaminated a drinking water supply. There are legitimate concerns about the potential risks of renewable fuels, and Congress may address those concerns by including a requirement that the EPA take a more active regulatory role than it has in the past. The protection afforded by a safe harbor provision would apply only to renewable fuels and additives that had been approved by EPA.

Conclusion

To conclude: If Congress fails to act, consumers are likely to face the increasing costs of uncoordinated State MTBE bans—leading to increased strains on the fuel distribution system. While individual States are restricting use of MTBE, they cannot change the inflexible Federal RFG oxygen requirement. Maintaining the status quo of the Federal oxygen requirement and State MTBE bans will force the use of large volumes of ethanol in a very inflexible and unnecessarily costly fashion—and it could severely burden, if not disrupt, fuels distribution and supply.

The carefully crafted provisions I have discussed, as part of a package that meets our objectives, are supported by an historic coalition including API, numerous farm and ethanol interests, Northeast State air quality officials and environmental interests and were passed by the Senate last year as part of the comprehensive energy bill. They offer carefully considered solutions to the fuels problems that have challenged fuel providers and burdened American consumers. They protect important environmental benefits achieved by reformulated gasoline. We strongly urge Congress to adopt similar legislation.

STATEMENT BOB SLAUGHTER, PRESIDENT, NATIONAL PETROCHEMICAL AND REFINERS ASSOCIATION

Chairman Voinovich, Senator Carper and other members of the subcommittee, thank you for the opportunity to appear before you today to discuss the need for a comprehensive U.S. energy policy and particularly issues involving fuels and fuel components. My name is Bob Slaughter, and I am President of NPRA, the National Petrochemical & Refiners Association.

NPRA is a national trade association with about 450 members who own or operate virtually all U.S. refining capacity, as well as petrochemical manufacturers who operate similar manufacturing processes. NPRA's refining members include large integrated refiners, large independent refiners, and regional independents as well as small refiners.

Needed: A Focus on Increased Supply

To summarize our message, today NPRA urges policymakers in Congress and the Administration to encourage production of an abundant supply of petroleum products. A healthy and growing U.S. economy needs a steady, secure and predictable supply of petroleum products, at reasonable cost. NPRA believes that Federal policy in recent years has drifted away from the need to emphasize the supply side of the energy equation, and that an adequate energy supply has been largely taken for granted. We need to reinstitute an energy supply ethic in Federal policy to provide both national energy security and maintain U.S. economic growth.

To summarize our energy policy recommendations, NPRA urges Congress to: repeal the 2 percent RFG oxygenation requirement; reject calls for an ethanol mandate; avoid a Federal ban or mandatory phase-out of MTBE; extend product liability protection to MTBE and ethanol; and avoid unnecessary changes in fuel specifications. We will discuss these recommendations in more detail in subsequent sections of this statement.

Domestic Refining is a Critical Asset, But a Challenging Business

We also ask policymakers to extend the concern over petroleum product supply to include the domestic refining industry. Total daily U.S. demand for petroleum products is approximately 20 million barrels, and only 17 million barrels of this is supplied by U.S refineries. The remaining 3 million barrels of demand is supplied from a combination of several sources: the Caribbean, South America, Canada, Europe, and more rarely, the Middle East and Asia.

No new refinery has been built in the United States since 1976, and it is unlikely that one will be built here in the foreseeable future, due to economic and political considerations, including siting costs, environmental requirements, industry profitability and public concerns.

U.S. refining capacity has grown somewhat in recent years, but it is becoming harder to keep pace with growth in demand for petroleum products. As it is, refiners have increased capacity at existing sites to offset the impact of capacity lost elsewhere due to refinery closures.

It is also more difficult to add capacity at existing sites due to increasingly stringent environmental regulations and the challenging economic climate faced by the refining industry. EIA projects that U.S. refining capacity may grow by 2 million barrels per day by 2010; this would still not keep pace with the rise in U.S. demand for petroleum products, which EIA estimates will grow by 1.6 percent per year each year through 2025.

Product Imports Could Increase

This means that the United States, which has had a hard time adjusting to the fact that 60 percent of its crude is now imported, may have to become accustomed to another unpleasant fact: a larger percentage of petroleum products such as gasoline, diesel, jet fuel and heating oil may also come from imports.

NPRA suggests that balanced and temperate actions, adopted now, can prevent excessive dependence upon foreign refined products. It seems clear that it is in the nation's best interest to manufacture a significant portion of the petroleum products we need here in domestic refineries. Reduced U.S. refining capacity clearly affects the amount of control we have over our supply of refined petroleum products and the flexibility of the supply system, particularly in times of stress or disruption.

Currently, about 95 percent of such products are manufactured in U.S. refineries. (U.S. exports of refined products to non-U.S. destinations are relatively insignificant.) This indicates that this is a good time to adopt a policy to maintain a healthy and diverse U.S. refining industry. Although the precise percentage of refined product manufactured here will vary, adopting this policy now will help mitigate or pre-

vent any abrupt slide in U.S. refining capacity and any adverse impact on the nation's energy security. And that policy is founded in good common sense.

Refiners Are Investing Billions to Improve the Environment

Refiners currently face a massive task of complying with four regulatory programs affecting fuels with significant investment requirements, all in the same timeframe. Refiners must invest about $20 billion to sharply reduce the sulfur content of gasoline and both highway and much of off-road diesel. Refiners face additional investment requirements to deal with State and possible Federal limitations on ether use, as well as compliance costs with Mobile Source Air Toxics reductions and other limitations. This does not include additional significant investments needed to comply with stationary source regulations affecting refineries.

On the horizon are other environmental requirements which will necessitate significant investment. They are: the challenges and cost of increased ethanol use, expected Federal or State programs mandating changes in diesel fuel properties (cetane and aromatics content, lower gravity), and the potential for significant proliferation of new fuels caused by the need to comply with the new 8 hour ozone NAAQS. These factors will also significantly impact fuel manufacture and distribution.

Average Refining Returns Are Modest

Refining earnings have recently been more volatile than usual, but refining returns are generally quite modest when compared with other industries. The average return on investment in the industry is about 5 percent; this is about what investors could receive by investing in government bonds, with little or no risk. This relatively low level of return, which incorporates the cost of investments required to meet environmental regulations, is one reason why domestic refinery capacity additions are difficult and new facilities are unlikely to be constructed here.

A Key Government Advisory Panel Urged Prudent Regulation

The National Petroleum Council (NPC) issued a landmark report on the State of the refining industry in 2000. Given the limited return on investment in the industry and the crushing investment required for environmental regulations, the NPC urged policymakers to pay special attention to the timing and sequencing of any changes in product specifications. Failing such action, the report cautioned that adverse impacts on the industry with fuel supply ramifications could result. As the above discussion shows, this warning has been widely disregarded.

Refiners Face Additional Facility Investment Requirements

In fact, release of the NPC report was roughly concurrent with a problematic "enforcement effort" under the New Source Review Program, an effort that threatens to add additional billions of unanticipated cost to refiners just to stay in business. The enforcement initiative went forward despite near-universal agreement that the NSR program requirements were hopelessly confused and thus fertile ground for arbitrary enforcement. The refining industry has been struggling to resolve the enforcement issue on top of the many other challenges it faces. (Going forward, the recently effective final rule reforming NSR will add much-needed clarity and consistency to that program's requirements. That rule, and the current proposal to clarify the definition of routine maintenance under NSR, are rare instances in which policymakers heeded the NPC's warning.)

Refiners Will Meet the Challenges, But Some Facilities May Close

Petroleum refining has never been an industry for the faint of heart. Domestic refiners will rise to meet the challenges of the current situation. They have demonstrated the ability to adapt to new challenges and keep the flow of critical fuels going to consumers across the Nation. But certain economic realities cannot be ignored and they will impact the industry. Thus, refiners will, in most cases, make the investments necessary to comply with the environmental programs outlined above. In some cases, however, where refiners are unable to justify the costs of investment at some facilities, those facilities may close.

EIA summarizes the impact of past and future refinery closures: "Since 1987, about 1.6 million barrels per day of capacity has been closed. This represents almost 10 percent of today's capacity of 16.8 million barrels per calendar day . . . The United States still has 1.8 million barrels of capacity under 70 MB/CD (million barrels per calendar day) in place, and closures are expected to continue in future years. Our estimate is that closures will occur between now and 2007 at a rate of about 50–70 MB/CD per year . . . All refineries face investments . . . But smaller refiners may find their lack of economies of scale and the size of the investments required put them at a competitive disadvantage and would keep them from earning

the returns needed to stay in business." (EIA, J. Shore, "Supply Impact of Losing MTBE & Using Ethanol," October 2002, p. 4.)

Reasonable Regulation Will Help Refiners Maintain Supply

As the committee can see, the domestic refining industry has major challenges ahead. NPRA's members ask that policymakers help by insisting that future fuel specification changes be carefully timed and sequenced consistent with the National Petroleum Council's recommendations. This should be adopted as part of the nation's energy policy revisions.

In addition, NPRA asks that an updated energy policy adopt the principle that in the case of new environmental initiatives the environmental objectives must be balanced with energy supply requirements. As explained above, the refining industry is in the process of redesigning much of the current fuel slate to obtain needed improvements in environmental performance. This trend will persist because consumers desire higher-quality and less-polluting fuels. And our members want to satisfy their customers. We ask only that the programs be well-designed, appropriately timed and cost-effective. The committee can advance both the cause of cleaner fuels and preservation of the domestic refining industry by adopting this principle as part of the nation's energy policy.

Industry Diversity Benefits Consumers and the Nation

As demonstrated above, a healthy and diverse U.S. refining industry best serves the nation's interest in maintaining a secure supply of energy products. Rationalizing and balancing our nation's energy and environmental policies will protect a key American resource, the domestic refining industry. Given the challenges of the current and future refining environment, the Nation is fortunate to retain a refining industry that has many diverse and specialized participants. Some of the largest companies in the world maintain their positions in U.S. refining, while a vibrant set of entrepreneurial independents, among the largest in the industry, are increasing their prominence and importance in that industry. At the same time, regional and smaller independents reliably and conveniently serve regional or smaller niche markets. The U.S. refining industry has experienced difficult periods before, but the continuing diversity within the industry suggests that it has more than enough vitality to continue the industry's important work, especially with the help of a supply oriented national energy policy.

The Market Situation Demonstrates a Need to Focus on Supply

NPRA believes that a new national energy policy initiative is long overdue. And our testimony thus far has shown why that new policy must be supply oriented, and why it should view the need for a healthy and diverse domestic refining industry as a cornerstone of a pro-supply policy. We believe that any neutral observer would see the wisdom of these two policy elements, especially because current events in the crude oil and product markets demonstrate the need for them.

As this testimony is written, speculation about crude and product price and supply is a hot topic in the media. Once again, the supply of crude and products is stretched tight due to a confluence of external factors. In this case, those factors are: the consequences of a strike in Venezuela that crippled that country's export capability for months; weather much colder than normal in parts of the country where energy use is extremely sensitive to temperature; and uncertainty over crude oil supply in the immediate future due to the international situation involving Iraq.

The U.S. Energy Information Administration (EIA) Helps Explain the Market

NPRA urges anyone interested in how we got where we are to take a look at EIA's webpage in order to read the articles "This Week in Petroleum" since the beginning of this year. They will find each step in the process explained, along with accurate predictions of subsequent developments.

In summary, according to EIA, these are the facts: the strike in Venezuela deprived the U.S., that country's largest customer, of a significant amount of crude imports for several weeks. This happened when crude oil inventories were at modest levels because OPEC lowered production quotas for most of 2002. That action had already limited the supply of crude.

Refiners tried to keep up refinery runs, and hence production, by utilizing the crude available in the market and by drawing on crude stocks. This delayed the impact of the Venezuelan disruption for a short period and helped meet strong product demand. That is a considerable achievement, given the extent of the crude supply impact and the difficult time of year in which it occurred. It is another example of the expertise and resourcefulness of the domestic refining industry.

As crude inventories fall, crude runs to refineries decrease because less crude is available. When crude runs are reduced, product output declines. This may require

tapping product inventories to meet demand. The reduced product inventories then give rise to concerns about the sufficiency of gasoline, diesel and heating oil supplies. EIA refers to these possible occurrences as "Dominos" in its January 15 "This Week in Petroleum." Subsequent issues of that analysis described what happened as the domino scenario unfolded. We have attached the January 15 publication for your information.

Strong evidence such as this, and broad agreement that these are the key factors should answer questions about the genesis of today's crude and product supply situation. The fact that the Nation is on the brink of war in Iraq certainly offers an additional reason to believe that these are uncertain times when concern about crude availability and supply are understandably present. And those concerns have impacts in the marketplace.

Refiners are Working Hard to Supply Needed Products

Unfortunately, some of the media and a few policymakers have alleged that industry misconduct is somehow responsible for the current situation. This is not so now, just as it was proven not so in past supply disruptions and uncertainties. Refinery runs are close to where they were last year at this time, despite general agreement that crude supplies are tight. Slightly lower utilization rates this time of year are often due to planned maintenance when product demand is usually low. Refinery maintenance is often nondiscretionary and scheduled well in advance of a largely inflexible date. The need for the refining industry to run at high rates of utilization, 92–93 percent on average, well above the 85 percent utilization rate considered full utilization in other industries, is an important reason why the time available for turnarounds is at a premium and hard to change. Another factor is that some maintenance cannot be postponed for safety reasons, which cannot be compromised.

This is also a difficult time of the year for refiners to face so many market uncertainties. They will soon implement the required changeover from winter to summer grade gasoline, which often requires a delicate balance as winter product is drawn down to make way for summer gasoline in time for the required certification date.

Many California refiners will experience the first seasonal turnaround involving CARB3 and California RFG with ethanol, due to the partial phase-out of MTBE in California this year. Please do not misunderstand this point. It is not clear that today's market conditions reflect problems involving seasonal changeovers. We mention this subject to remind nonindustry observers that this time of year is an especially sensitive one if available crude supplies are stretched thin and demand remains high, which is the case at present.

The current situation is not totally dissimilar to the summer of 2000 and early summer of 2001, when supply problems surfaced due to market-related and operational difficulties beyond industry's control. Investigations conducted of industry behavior at that time found no basis for legal action against the industry. We are certain that the investigations now being called for will result in the same findings which exonerate the industry. And please bear in mind that resources spent to answer these charges every time prices increase could be spent to improve industry operations and production. EIA responded very effectively to recurrent charges of "price gouging" in last week's issue of "This Week In Petroleum" which is attached.

Refiners are constantly responding to difficult situations like the present one, which make it a challenge to maintain adequate product supplies. Modern energy policy has given them a tool which helps them determine the most efficient way to continue meeting consumer demand. The free market swiftly provides the industry with price and supply information which they can respond to. Refiners also need maximum flexibility to respond to this market information in their decisions about product manufacture and distribution. Mandates and other command-and-control policy mechanisms reduce flexibility and add unnecessary cost to gasoline manufacture. Congress should remove existing mandates and avoid legislating new ones, such as the proposed ethanol mandate.

A modern, supply oriented fuels policy would give refiners greater flexibility to meet fuel demand within broad performance standards. Such a fuels policy would also rely on the free market to determine appropriate product supply and allocation. It would avoid inflexible command-and-control regulation such as prescriptive mandates, and emphasize the development of new fuel legislation and regulation through an open process involving all stakeholders, aimed at obtaining the best practical answer rather than one that satisfies temporary political aims. But most importantly, such an energy policy must focus on balancing the dual goals of increased energy supply and continued environmental progress.

NPRA Policy Recommendations

With this concept of a supply oriented energy policy as a backdrop, NPRA has reviewed the National Energy Policy legislation approved by the House in 2001 and by the Senate last year. The Association offers the subcommittee these specific recommendations regarding the fuels provisions that may be under consideration for inclusion in this year's energy bill.

First: Repeal the 2 percent by weight RFG oxygenation requirement [Clean Air Act section 211(k)] to provide refiners with more flexibility to meet supply and air quality requirements.

Elimination of this 2 percent requirement will give refiners increased flexibility to deal with changing market conditions. It will also allow them to blend gasoline to meet the standards for reformulated gasoline most efficiently and economically, without mandated oxygenate content. In some cases, refiners would probably continue to use some MTBE, because of its good blending qualities and demonstrated ability to reduce air emissions. The overall volume of MTBE in gasoline would very likely decline, while providing relief to those who are concerned about MTBE usage.

Second: Reject calls for an ethanol mandate

Imposing an ethanol mandate on gasoline suppliers will make it more difficult and expensive to manufacture gasoline and provides no compensating benefit to consumers or the environment. An ethanol mandate immediately creates winners and losers among fuel providers and regional consumers based on their geographic location and history of ethanol usage or nonusage. It is thus both highly arbitrary and unfair. Inclusion of a credit trading mechanism in the mandate proposal does nothing to temper the injustice and economic inefficiency of the provision, because it requires fuel manufacturers and their customers to pay for the "privilege" of not using ethanol in their gasoline.

Many NPRA members already use significant volumes of ethanol, and they expect to increase their ethanol usage in the years ahead. EIA and other policy analysts also predict a large increase in ethanol markets in coming years, without a mandate. In short, given the relative scarcity of quality gasoline blend stocks, ethanol has a bright future without any need to resort to the dubious policy of a national ethanol mandate.

Ethanol already enjoys a generous subsidy in the form of a 52 cent exemption from the gasoline excise tax; this subsidy costs the Highway Trust Fund in excess of $1.2 billion annually. A Federal tariff offsets the benefit of the gasoline tax exemption for most imports, making them uncompetitive with domestic ethanol production. Ethanol also receives tax incentives in 17 States.

The 5 billion gallon ethanol mandate included in last year's Senate ethanol bill was the product of private discussions among a limited group of stakeholders. It was never considered by the committee of jurisdiction in the Senate. NPRA opposes that provision. We urge the subcommittee to make a clean break with the market intervention theory typified by both the existing 2 percent requirement and proposals for a cumbersome, expensive and unnecessary ethanol mandate.

The Senate-approved language includes language intended to require widespread usage of ethanol even in the summer months, when ozone concerns are most severe. This despite the fact that the increased volatility of ethanol blends requires additional investment and extraordinary measures to allow ethanol use in gasoline during these periods. Extra pollution caused for the local environment, supply problems for fuel suppliers, or cost problems for consumers should be no less important than the desire of one industry for consistent demand.

Few proposals on any subject unite the editorial pages of the Wall Street Journal, New York Times and Washington Post. But the ethanol mandate is one of them. All three papers have denounced the ethanol mandate proposal in no uncertain terms. NPRA agrees with this unusual consensus, and hopes that the Senate will reject the mandate proposal.

Third: Avoid a Federal ban or mandatory phase-out of MTBE use in order to maintain adequate gasoline supplies at reasonable cost; direct DOE and EPA to work with any States that implement limitations on MTBE usage to coordinate the implementation of these restrictions and to maintain adequate supply.

NPRA is concerned about proposals to ban MTBE nationally or to mandate a national phase-down of MTBE. Last year's Senate bill called for an MTBE ban in 4 years. (A Governor could allow continued use of MTBE in his own State, but this would be unlikely.) EIA predicts that an MTBE ban would raise the national average price of RFG in 2006 by several cents per gallon and reduce supply. ("Supply Impacts of an MTBE Ban," September 2002)

MTBE elimination may cause an 11 percent reduction in some gasoline volumes when fully implemented. (MTBE provides over 10 percent of RFG volume in many

RFG areas.) NPRA is concerned about the possible impact of this change on supply and manufacturing costs. The supply and demand balance in the nation's gasoline market is increasingly tight. Supply and price can be affected by weather, unforeseen outages, and accidents, resulting in economic losses and negative public reaction, and we are seeing this happen with increasing frequency.

Therefore, we should not exacerbate a tight supply situation by arbitrarily eliminating a significant contributor to the nation's gasoline supply. If concerns about MTBE usage continue, more deliberate but responsive measures can be taken. But recent experience in the gasoline market suggests that such significant changes should be taken only with caution, and with full disclosure to the public regarding any possible supply and cost impacts.

NPRA also does not believe that current evidence warrants the drastic step of a national ban on MTBE. Taking such action based on limited current knowledge would set a dangerous precedent for all chemicals in widespread commerce. EPA is currently evaluating MTBE's status under TSCA (the Toxic Substances Control Act), and NPRA suggests that is the only appropriate course of action based on the evidence today.

As EIA noted in a presentation last October: "MTBE is a very clean component from an air emission standpoint. It contains oxygen and has no sulfur, no aromatics, no olefins and an RVP that is very close to the RVP of the remaining gasoline components."

The author also wrote: "What is not appreciated by many people outside of the petroleum business, is that losing MTBE is more than just losing the volumes of this blending component . . . no other hydrocarbon or oxygenate equals the emission and engine performance characteristics of MTBE. Hence, losing a barrel of MTBE results in losing more than a barrel of gasoline production. When you remove a clean, high performance gasoline stream from the gasoline pool, it is difficult to find material to replace its volume and quality contributions." (EIA, J. Shore, "Supply Impact of Losing MTBE & Using Ethanol," October 2002, pp. 10, 12)

Recent EIA studies confirm that elimination of MTBE will also affect many refiners' abilities to comply with the Mobile Source Air Toxics rule, which requires refiners to maintain their average 1998–2000 gasoline toxic emission performance levels. Loss of MTBE would make it difficult to match historical toxics performance, and the result might be that those refineries would have to reduce their production of RFG to achieve compliance.

NPRA believes that these circumstances support a policy of considerable caution toward any proposal to eliminate the option of continued MTBE use, at least until there is certain and convincing evidence that adequate supplies of replacement fuel components are available.

Some stakeholders advocate a Federal ban or phase-down of MTBE as a means of securing an "orderly" market transition away from that product in States where large quantities of MTBE are currently used. This is a largely theoretical argument that assumes that Federal regulators and those who seek to eliminate MTBE can choose the one appropriate date when MTBE usage should end. This argument ignores actual experience in which affected States have modified their plans to limit MTBE usage as they become aware of the difficulties inherent in replacing it without adverse impact on gasoline supply.

In short, imposition of a uniform Federal scheme to restrict or eliminate MTBE usage runs a considerable risk that the decision will be uniformly wrong. Experience with the 2 percent RFG oxygenation mandate has taught us that if this occurs, political power can be brought to bear to block the changes necessary to meet unanticipated problems.

For example, even the largest State in the Nation found it impossible to obtain a waiver of the 2 percent provision under similar conditions, when it was clear to most observers that a waiver was justified. This suggests that supply problems arising from an arbitrary Federal phase-out or ban of MTBE might be difficult or impossible to correct, or that they might only occur accompanied by dubious new policy initiatives influenced by the politics of the moment.

Fourth: Extend product liability protection to MTBE and any mandated fuel component

When it passed the Clean Air Act Amendments of 1990 with the 2 percent RFG oxygenation requirement, Congress clearly understood that MTBE would be widely used to comply with that provision. In fact, the percentage of oxygen required by weight was selected to allow MTBE and perhaps other ethers to be used for that purpose. It was so clear that MTBE usage would predominate, in fact, that the Clinton Administration came forward with a rule that would have required some of the oxygen content to be met by "renewable" oxygenates, i.e. ethanol, to ensure usage

of that product in the RFG pool. [That attempt, a clear end-run of the statute and subsequent reg-neg agreement, was overturned by the U.S. Court of Appeals for the District of Columbia in the case API and NPRA v. EPA, 52 F.3d 1113, 1119 (D.C. Cir. 1995). In the decision, the court also noted that U.S. EPA had "conceded that use of ethanol might possibly make air quality worse."

The amendment establishing the reformulated gasoline program was added to the Clean Air Act amendments in the Senate by Senator Daschle. When the 2 percent requirement became part of the final bill, the refining industry acted to comply. As foreseen, MTBE became the oxygenate of choice because of its good blending characteristics, the fact that, unlike ethanol, it could be shipped in pipelines, and the reality that the higher volatility of ethanol blends makes their use in RFG during the summer ozone season problematic.

U.S. MTBE production increased from 146 thousand barrels per day in 1993 to roughly 230 thousand barrels per day in both 2001 and 2002. The air quality improvements made possible by RFG use in the cities where it has been required are well known. MTBE has contributed to those air quality improvements.

In recent years, product liability suits have been brought against refiners and petrochemical manufacturers due to MTBE contamination found in groundwater. Those suits seek to overlook the fact that the Clean Air Act amendments clearly required and contemplated widespread usage of MTBE in the RFG program. As discussed above, Congress was also aware that large quantities of MTBE would be needed in the RFG program.

No one should be penalized for obeying the law. Yet this is the position in which refiners and petrochemical producers find themselves because of these liability suits. Money spent to defend against these unfair suits could be better used to produce additional supplies of petroleum and petrochemical products for consumers and the nation's economic benefit.

During the energy bill conference last year, the House recognized the need for product liability language that would help fuel suppliers defend themselves against these unfair charges. NPRA encourages Congress to include the same or similar language in the energy bill this year. It is only fair that any fuel producer who responds to a congressional mandate for use of a product be protected against legal action based solely upon production or use of the mandated product.

Fifth: Avoid unnecessary changes in fuel specifications

As discussed previously, the refining industry faces significant investment requirements in order to comply with regulations to improve the environmental performance of both gasoline and diesel fuel in coming years. Significant investments will also be required to respond to regulations affecting facilities. NPRA urges the subcommittee and committee to limit additional fuel specification changes while work is in progress to comply with these existing requirements. Although we do expect a proposed rule this year to reduce the sulfur level in off-road diesel over the period 2007–10, industry has been consulting with EPA and OMB in the hope of coordinating the off-road requirements with the existing highway diesel rule. We ask that this subcommittee monitor developments on that regulation.

Particular care should be used in considering so-called "boutique fuel" gasoline programs. In many cases these programs represent a local area's attempt to address its own air quality needs in a more cost-effective way than with reformulated gasoline. NPRA welcomes further study of the "boutique fuels" phenomenon, but urges members of the committee to resist imposition of additional fuel specification changes in a vain attempt to curtail State and local experimentation.

NPRA is also concerned about provisions in last year's bill that facilitated certain opt-ins to the reformulated gasoline program. In creating the RFG program, Congress established requirements for RFG opt-ins that recognized the need to limit access to that program due to supply and investment considerations. If anything, the reasons underlying those concerns are stronger now than they were 10 years ago. Therefore, NPRA urges that current Clean Air Act language regarding access to the RFG program be retained, rejecting any changes to current language that limits participation in the RFG program to those areas with a demonstrated need for that fuel.

NPRA looks forward to working with the subcommittee and full committee to accomplish these and other objectives as part of a supply driven national energy policy. I would be glad to answer any questions raised by our testimony today.

ATTACHMENTS

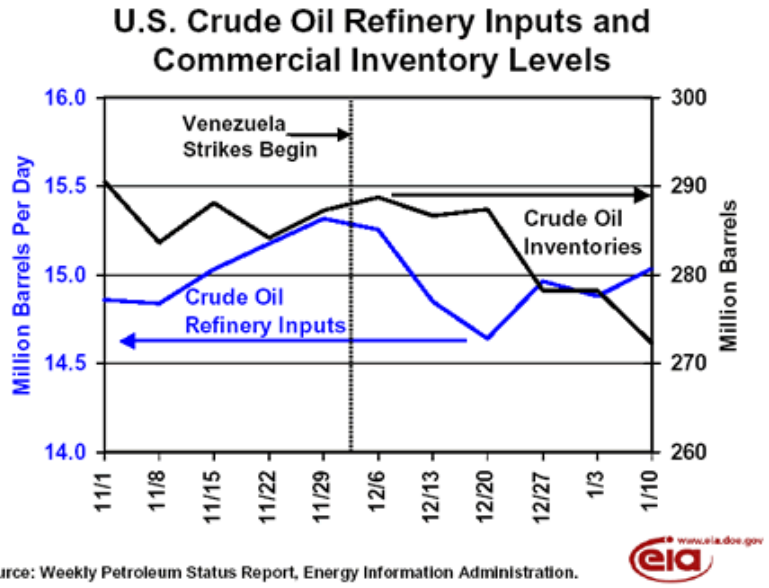
[From the Energy Information Agency]

"THIS WEEK IN PETROLEUM"

(Released on January 15, 2003)

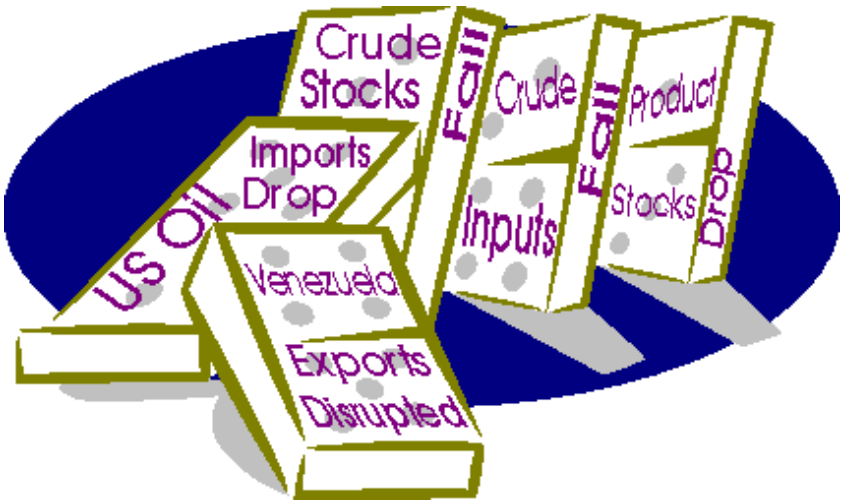
Dominoes

Many of us remember when as kids we would stand dominoes up, one in front of the other, and then tip the first one so that it would fall into the one behind it, starting a chain reaction in which all of the dominoes fell down, one after another. Well, one theory is that this image is analogous to what is currently happening in the U.S. oil market following the disruption in Venezuela oil exports.



Although the origins of weekly crude oil imports are very preliminary and thus not published, it appears that some crude oil from Venezuela continues to arrive into the United States. And, while crude oil imports from Venezuela have increased some over the last 2 weeks, they continue to be much lower than normal. As Venezuela's largest customer, a dramatic cut in oil exports from Venezuela as a result of their ongoing strikes, has led to U.S. oil imports declining. U.S. crude oil imports over the last 3 weeks are more than 300,000 barrels per day less than over the same period a year ago. With U.S. oil production relatively flat and unable to increase to make up for the lost Venezuelan imports, less supply into the U.S. crude oil market means either that less crude oil gets processed through refineries, crude oil inventories are drawn down to replace the lost supply, or a combination of both. As the accompanying graph shows, while crude oil refinery inputs did initially decline following the Venezuela disruption, they recovered somewhat, while inventories have continued to drop. U.S. crude oil inventories now are less than 3 million barrels above the Lower Operational Inventory level of 270 million barrels. While there is nothing to prevent inventories from falling below 270 million barrels, were that to occur, less flexibility would be expected, and according to the National Petroleum Council, localized disruptions in refinery operations could be expected. Clearly, refiners, for many reasons (healthy refinery margins, expectations of higher prices ahead encouraging stock building for the future, building product inventories ahead of schedule refinery maintenance, etc.), have decided to use inventories to maintain refinery inputs.

But just as the reduction of Venezuela imports led to lower U.S. oil imports, which led to lower crude oil inventories, if the situation continues, the next likely domino to fall could be a reduction in crude oil refinery inputs. If crude oil inventories fall further, they will be down to levels that couldn't be drawn down much further, forcing refiners to curtail crude oil inputs into refineries. If this happens, refinery output would also fall and product inventories would need to be drawn down to supply demand for these products. So while all of the dominoes haven't fallen yet, unless additional crude oil supply arrives in the near future, we could be watching the dominoes topple each other over the next month or two.



Retail Gasoline Price Increases For Fifth Week In A Row

The U.S. average retail price for regular gasoline rose for the fifth week in a row last week, increasing by 1.0 cent per gallon as of January 13 to end at 145.4 cents per gallon. This price is 34.3 cents per gallon higher than last year. Prices throughout most of the country were up, with the largest increase occurring in the Midwest, where prices rose 2.3 cents to end at 144.2 cents per gallon. The Gulf Coast was the only region that saw a price decrease, with prices falling by 0.2 cent to end at 139.9 cents per gallon.

Retail diesel fuel prices decreased last week, falling to a national average of 147.8 cents per gallon as of January 13. Retail diesel prices were down throughout the country, with the largest price decrease occurring in the Midwest, where prices dropped 2.8 cents per gallon to end at 146.7 cents per gallon.

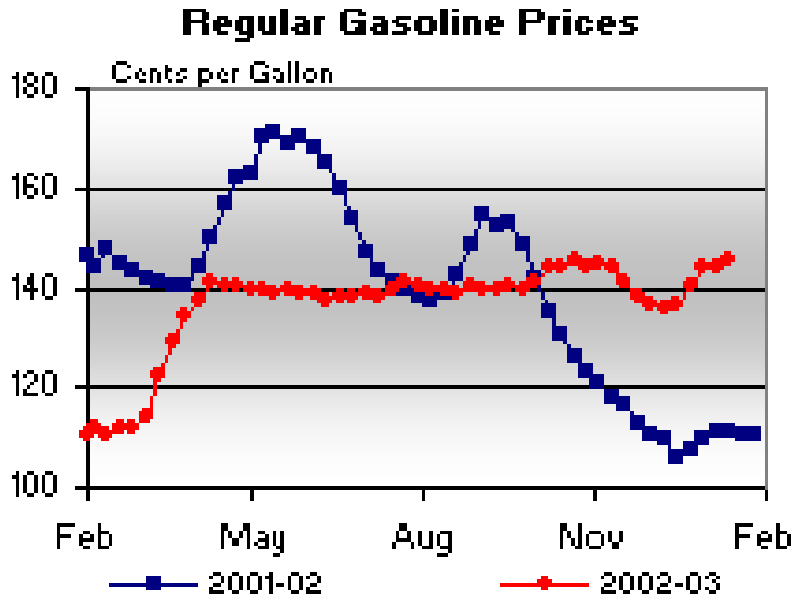
Heating Fuel Prices Show Modest Gains This Week

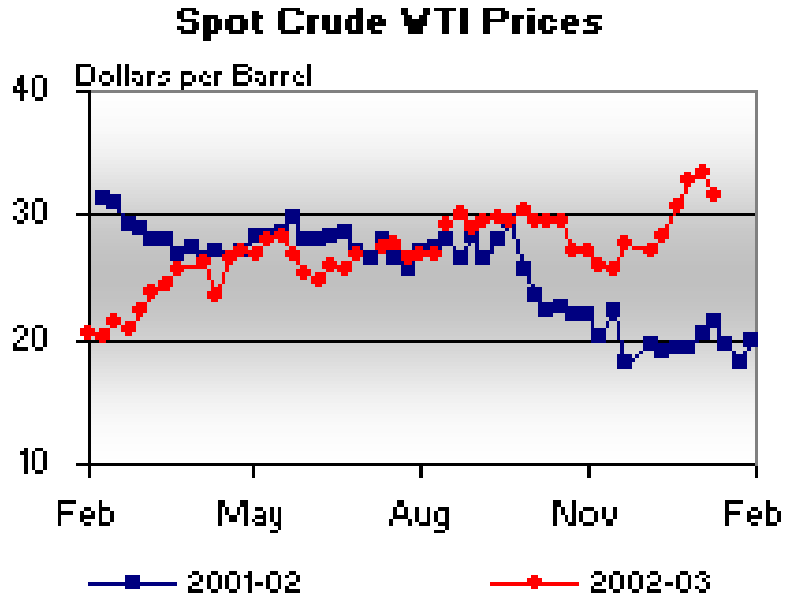
Residential heating fuel prices increased slightly for the period ending January 13, 2003. The average residential heating oil price was 143.1 cents per gallon, up 0.3 cent per gallon from the previous week. Residential propane prices also continued to move upward by 0.7 cent per gallon, rising from 126.8 to 127.5 cents per gallon. Heating oil prices are 26.5 cents per gallon higher than last year at this time while residential propane prices are 14.1 cents per gallon higher than 1 year ago. Wholesale heating oil prices decreased 6.3 cents per gallon this week, to 88.5 cents per gallon, while wholesale propane prices decreased from 62.9 to 62.0 cents a gallon, down 0.9 cent per gallon.

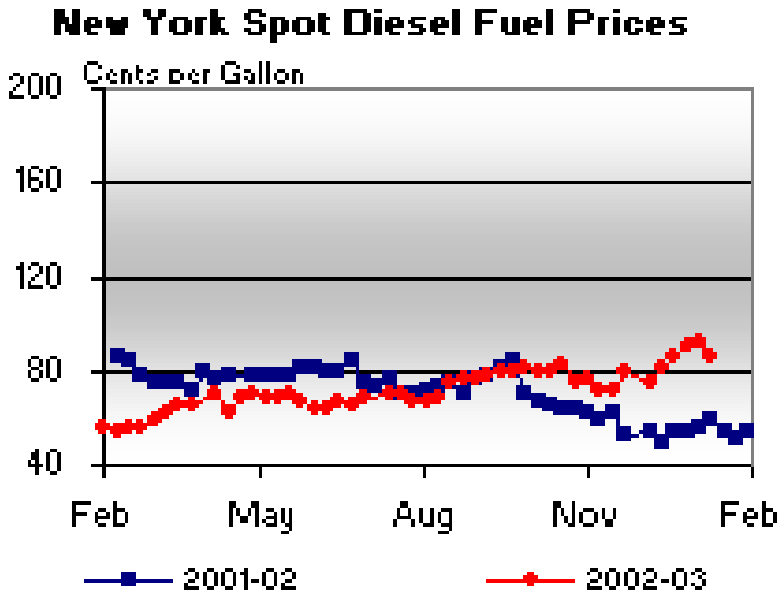
Propane Inventories Sharply Lower

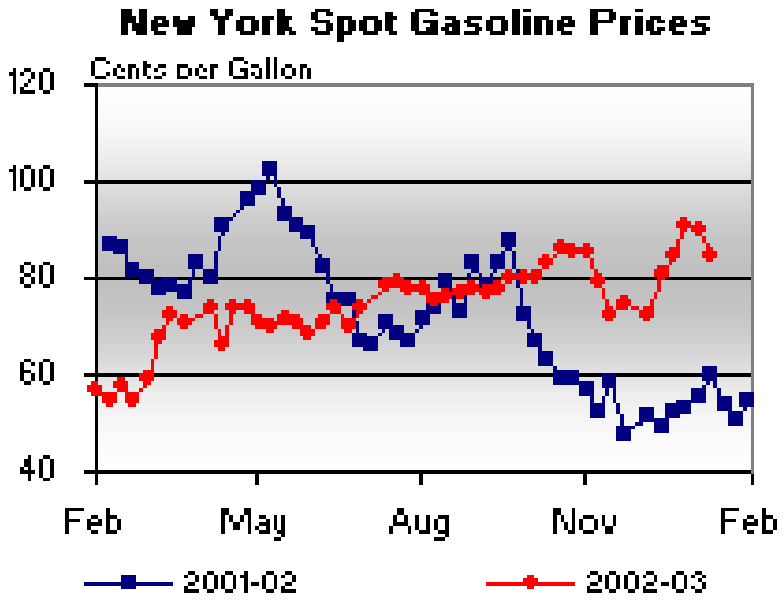
U.S. inventories of propane reported the largest weekly decline of the heating season last week, dropping by more than 3 million barrels just ahead of an arctic air mass that swept through most areas east of the Rockies. As of the week ending January 10, 2003, U.S. inventories stood at an estimated 47.6 million barrels, a level that continues to track within the average range for this time of year. Regionally, Gulf Coast inventories accounted for about two-thirds of the weekly stock draw with a nearly 2.0 million decline, followed by a 0.5 million-barrel drop in the Midwest and a 0.4 million-barrel decline in the East Coast during this same period. All regional inventories remain within their respective average ranges as of last week.

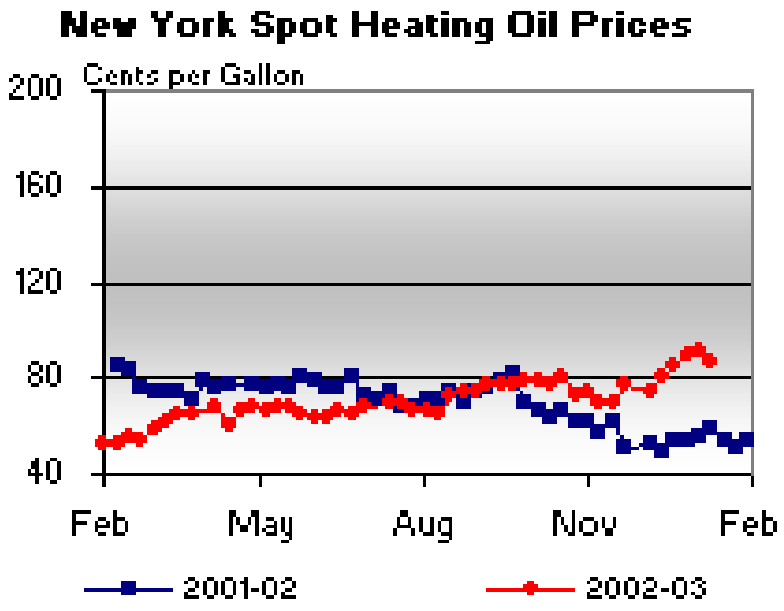
Note: Text from the previous editions of "This Week In Petroleum" is now accessible through a link at the top right-hand corner of this page.

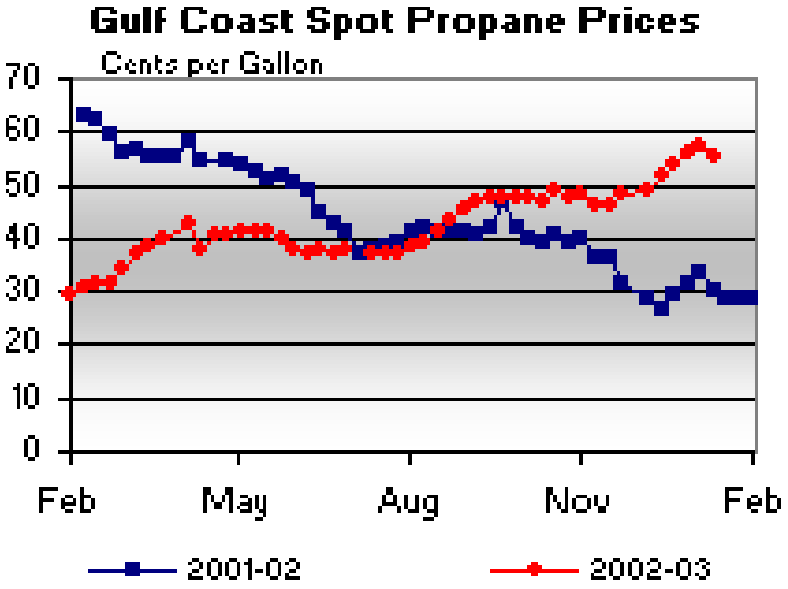


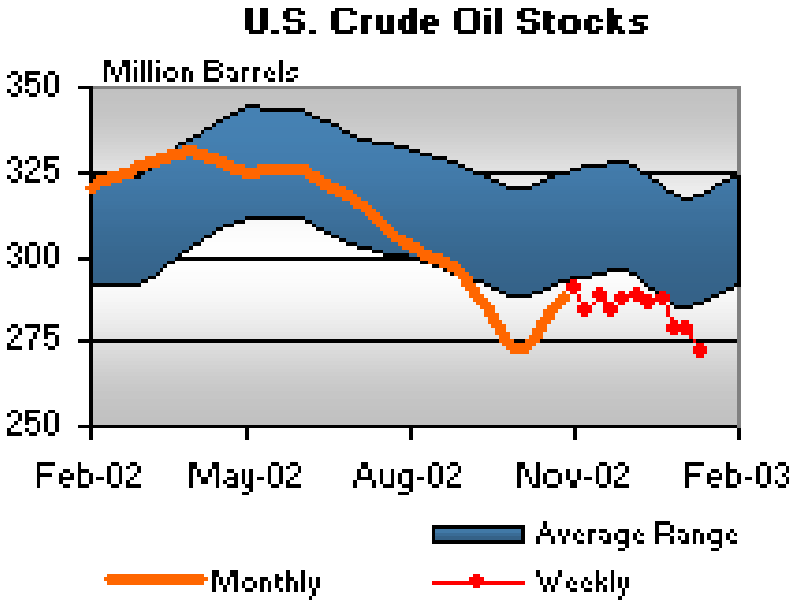


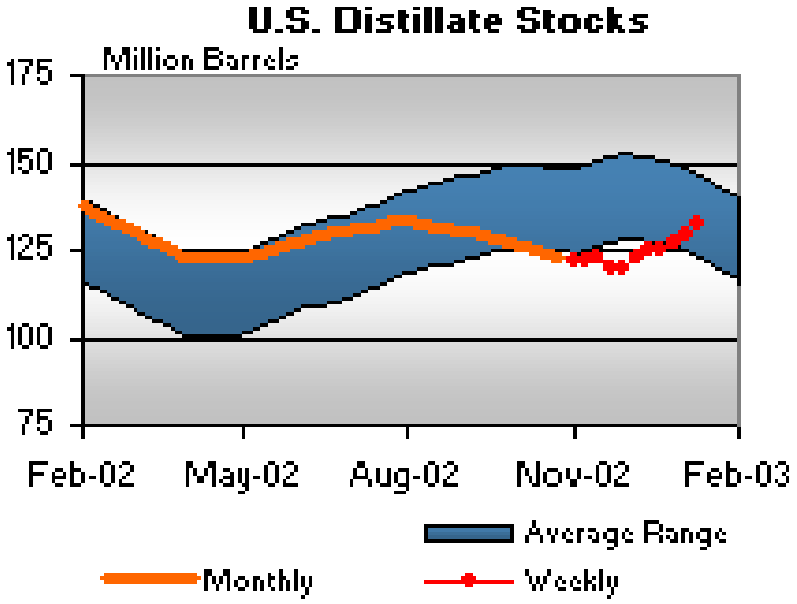

New York Spot Diesel Fuel Prices
Cents per Gallon
200
160
120
80
40
Feb
May
Aug
Nov
Feb
2001-02
2002-03

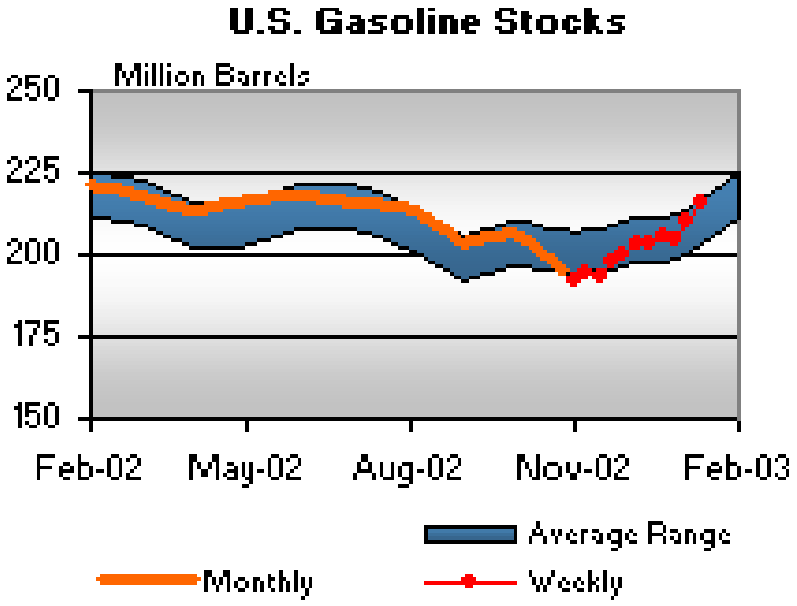

New York Spot Gasoline Prices
Cents per Gallon
120
100
80
60
40
Feb
May
Aug
Nov
Feb
2001-02
2002-03

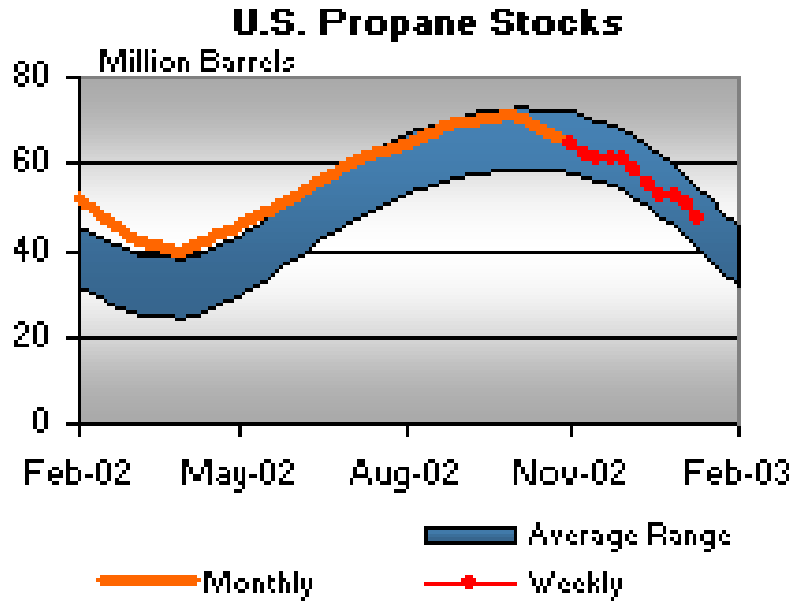

New York Spot Heating Oil Prices
Cents per Gallon
200
160
120
80
40
Feb
May
Aug
Nov
Feb
2001-02
2002-03


Gulf Coast Spot Propane Prices
Cents per Gallon
70
60
50
40
30
20
10
0
Feb
May
Aug
Nov
Feb
2001-02
2002-03


U.S. Crude Oil Stocks
Million Barrels
350
325
300
275
250
Feb-02
May-02
Aug-02
Nov-02
Feb-03
Average Range
Monthly
Weekly


U.S. Distillate Stocks
Million Barrels
175
150
125
100
75
Feb-02
May-02
Aug-02
Nov-02
Feb-03
Average Range
Monthly
Weekly


U.S. Gasoline Stocks
Million Barrels
250
225
200
175
150
Feb-02
May-02
Aug-02
Nov-02
Feb-03
Average Range
Monthly
Weekly


U.S. Propane Stocks
Million Barrels
80
60
40
20
0
Feb-02
May-02
Aug-02
Nov-02
Feb-03
Average Range
Monthly
Weekly

THIS WEEK IN PETROLEUM

(Released on March 12, 2003)

Do Current High Petroleum Product Prices Reflect Price Gouging?

As of Monday, March 10, EIA's weekly survey of retail gasoline prices showed the U.S. average price for regular grade at $1.712 per gallon, only a tenth of a cent below the highest nominal (not inflation-adjusted) national average price on record. On the same day, EIA's weekly retail diesel fuel price survey reported a national average of $1.771 per gallon, setting a new record price (in the history of this survey, which dates from 1994) for the fourth consecutive week. Residential prices for heating oil and propane are also near record levels. With prices this high, and tight supplies and the possibility of war in Iraq raising fears that they may go still higher, some have raised the question of whether price gouging is occurring.

"Price gouging" is a term laden with emotion, and is in fact difficult to define objectively. In a technical sense, it refers to a situation where a seller attempts to extract a higher price (and profit) than would normally result from underlying supply and demand fundamentals. It is that last phrase, however, that makes gouging so hard to define, because in a free market, when supply and demand are out of balance, prices change to restore equilibrium. What consumers seem to expect is that no matter how much demand may exceed supply in the short run, prices should not rise to more than an "acceptable" level, which may leave sellers unable to cover their own increased costs, or fail to provide sufficient incentive to bring increased supplies into the market.

So do current prices for petroleum products, particularly gasoline, reflect gouging? In EIA's estimation, the answer is "no." EIA continually monitors and analyzes data and trends in the U.S. petroleum markets. Gasoline prices are currently elevated largely due to high crude oil prices, and to a lesser extent, strong refining margins. Distribution and marketing margins are not unusually high, and there is no evidence of price gouging at any level. There are a number of factors driving gasoline prices higher:

- The price of crude oil on the world market. Increases or decreases in crude oil prices, based on global supply and demand, translate almost instantly into changes in petroleum product spot and futures prices. Crude oil prices have recently reached their highest levels since October 1990, and are more than $8 per barrel higher than when the previous record gasoline price was set in May 2001.
- Seasonal price patterns, also driven by supply and demand. Gasoline tends to be more expensive in the spring and summer, when demand for it is highest.
- Other supply/demand factors, such as refinery output, availability of imports, and inventory levels. Inventories are significant both as an indicator of a tight supply demand balance, and as a buffer supply source, and are now significantly below their normal seasonal range.

At $1.712 cents per gallon as of March 10, 2003, the U.S. average retail price of regular gasoline is at its highest level ever at this time of year, and 49 cents higher than a year ago. However, it should be noted that West Texas Intermediate crude oil is up about $13 per barrel (31 cents per gallon) over the same period, and average spot gasoline prices are up 38 cents. Thus, about two-thirds of the year-over-year increase in gasoline prices can be ascribed to crude oil, while refining margins are up about 7 cents over year-ago and distribution/marketing margins are up 11 cents (from unusually low levels in March 2002).

The Energy Information Administration has found that retail gasoline and diesel fuel prices are almost entirely driven by changes in spot prices over the previous few weeks, to such an extent that near-term retail prices can be predicted with accuracy. (See Gasoline Price Pass-Through and Diesel Fuel Price Pass-Through.) Price gouging, when it occurs (which is rare), is usually a very localized phenomenon, and only at the retail level. As long as retail prices conform to the predicted pattern of pass-through, it can be assumed that no significant gouging is occurring.

Unfortunately, incidents of apparent gasoline price gouging have been seen, most recently in the wake of the terrorist attacks of September 11, 2001. In that case, a few local marketers quickly raised retail prices to exorbitant levels, apparently fearing that supplies would be interrupted, and/or that wholesale prices would rise dramatically, making replacement supplies much more expensive. Reassurances by major suppliers, that they would hold the line on prices, quickly stabilized the markets, and reportedly some of those marketers that had briefly raised prices granted refunds to customers who had bought during that period. A number of States now have anti-gouging laws and enforcement programs in place to prevent this type of

problem. Unfortunately, the greater test would come if there were indeed a major global, national, or even regional supply interruption. While anti-gouging laws, if enforceable, might keep prices under control, they cannot assure continuity of supply.

The Department of Energy maintains a toll-free hotline for consumers to report suspected gasoline price gouging, at (800) 244–3301.

U.S. Retail Gasoline Price Continues To Climb

The U.S. average retail price for regular gasoline rose last week for the twelfth time in 13 weeks, increasing by 2.6 cents per gallon as of March 10 to reach 171.2 cents per gallon, which, as noted above, is 48.9 cents per gallon higher than a year ago. This price is only 0.1 cent lower per gallon than the highest price in nominal dollars since EIA began recording this data in August 1990. While the outlook could go either way, strong gasoline demand ahead of the normal seasonal increase, extensive refinery maintenance, and still tight crude oil supply, may be pointing to added price pressure in the months ahead. Prices were up throughout the country, with the largest increase occurring in California, where prices rose 7.2 cents to end at 208.4 cents per gallon, the highest price ever in our survey, which for California goes back to May 2000. This is the second week in a row that California prices have been above $2 per gallon. Prices for all of the West Coast are on the brink of that $2 mark, hitting 199.3 cents per gallon on March 10, and prices in PADD 5 appear to be an important driver in the increase of national prices.

Retail diesel fuel prices increased for the eighth straight week, rising 1.8 cents per gallon to a national average of 177.1 cents per gallon as of March 10. This is the highest diesel price since EIA began recording this data in March 1994, and the fourth week in a row that diesel fuel has topped its previous record price. Retail diesel prices were up throughout most the country, with the largest price increase occurring on the West Coast, where prices rose 8.1 cents per gallon to end at 188.6 cents per gallon. Prices in New England rose again, by 4.7 cents to reach 200.1 cents per gallon, the highest price in the Nation. The Gulf Coast was the only region that saw a price decrease, with prices falling by 0.3 cent to end at 169.7 cents per gallon.

Heating Oil Price Shows Slight Increase While Propane Price Begins to Decline

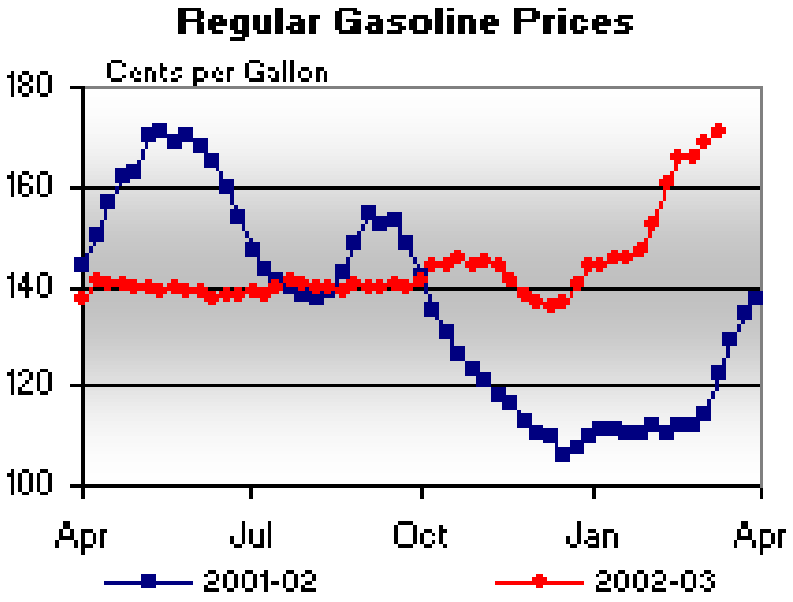
Residential heating oil prices increased 1.6 cents per gallon for the week ending March 10, 2003, averaging 185.4 cents per gallon, and are 68.6 cents per gallon higher than last year at this time. Meanwhile, wholesale heating oil prices decreased 2.3 cents per gallon this past week, reaching 127.0 cents per gallon.

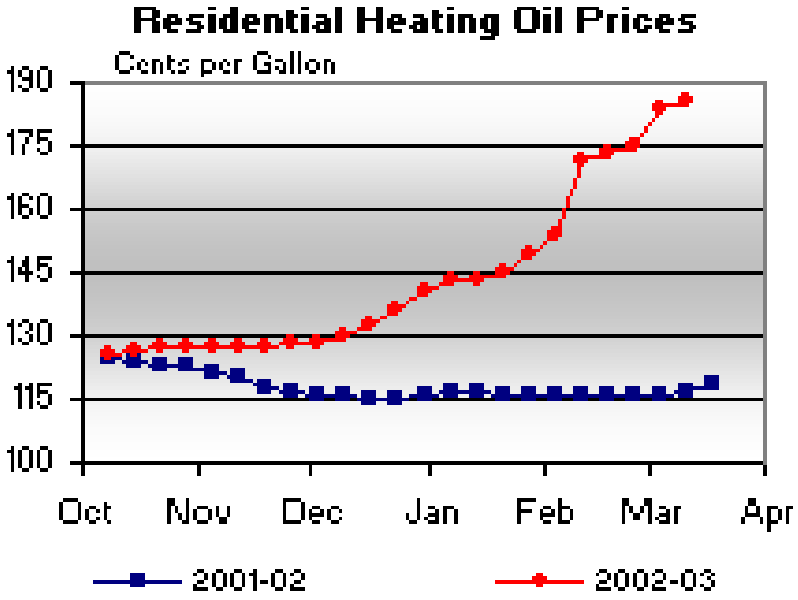
Residential propane prices decreased 6.9 cents per gallon for the week ending March 10, 2003 to reach 165.3 cents per gallon, but are still 53.2 cents higher than 1 year ago. Wholesale propane prices decreased 34.4 cents per gallon, from 114.8 cents per gallon to 80.4 cents per gallon, reversing the increase seen in the previous week.

Propane Inventories Continue Lower

Continued bouts of cold weather in some areas of the Nation contributed to last week's robust stock draw that positioned U.S. inventories of propane as of the week ending March 7, 2003 at an estimated 18.9 million barrels, just 0.4 million barrels above the Lower Operational Inventory (LOI) for propane. While not implying shortages or operational problems, an inventory level below the LOI is indicative of a situation where supply flexibility could be constrained. Since March stockdraws typically average about 3 million barrels during the month, last week's relatively hefty 2.1 million barrel stockdraw accounted for about 70 percent of the average monthly total, perhaps setting the stage for yet another record monthly draw following those reached during January and February 2003. But with inventories at or near historical lows in most regions, the March record of 7.4 million barrels reached during 1999, may not occur as the industry struggles to overcome sporadic operational and/or distribution problems associated with inventories at these low levels. Nevertheless, the severe winter of 2002–03 may prove to be the new benchmark against which future winters will be gauged.

Note: Text from the previous editions of "This Week In Petroleum" is now accessible through a link at the top right-hand corner of this page.


Regular Gasoline Prices
Cents per Gallon
180
160
140
120
100
Apr
Jul
Oct
Jan
Apr
2001-02
2002-03


Residential Heating Oil Prices
Cents per Gallon
190
175
160
145
130
115
100
Oct
Nov
Dec
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Feb
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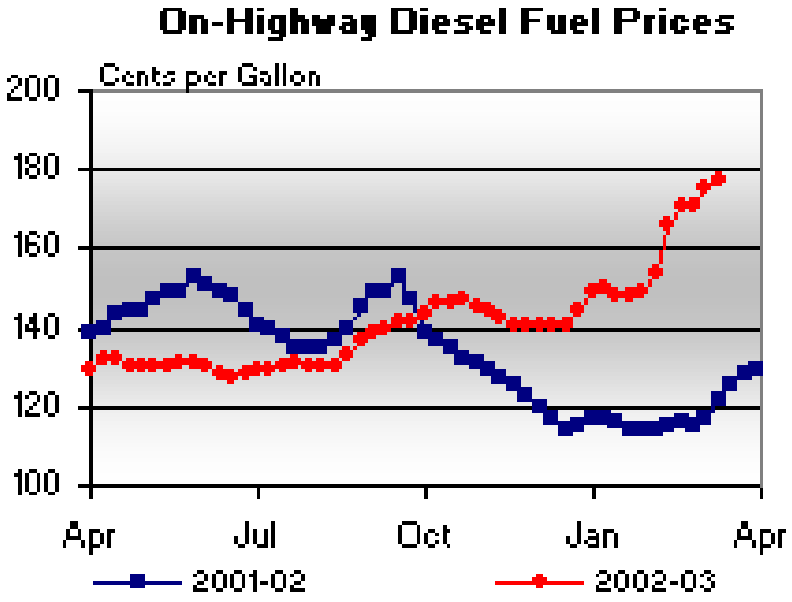
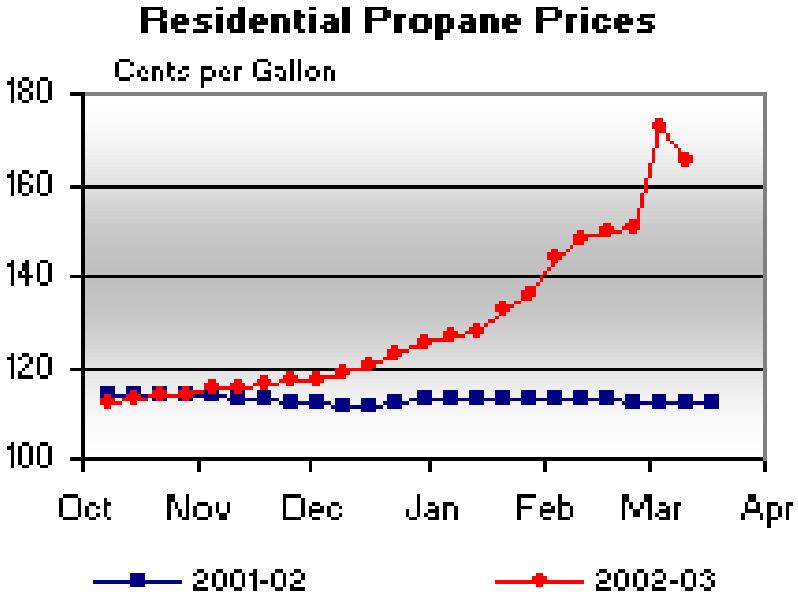
Apr
2001-02
2002-03


On-Highway Diesel Fuel Prices
Cents per Gallon
200
180
160
140
120
100
Apr
Jul
Oct
Jan
Apr
2001-02
2002-03


Residential Propane Prices
Cents per Gallon
180
160
140
120
100
Oct
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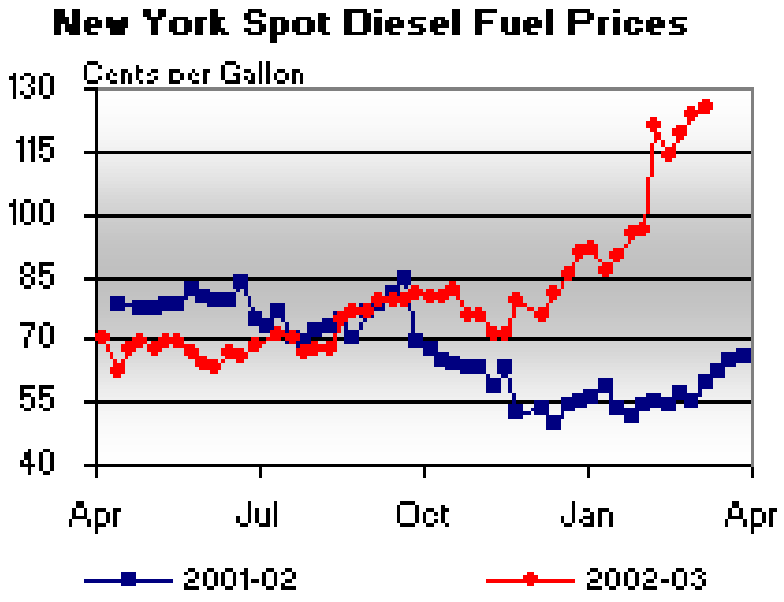
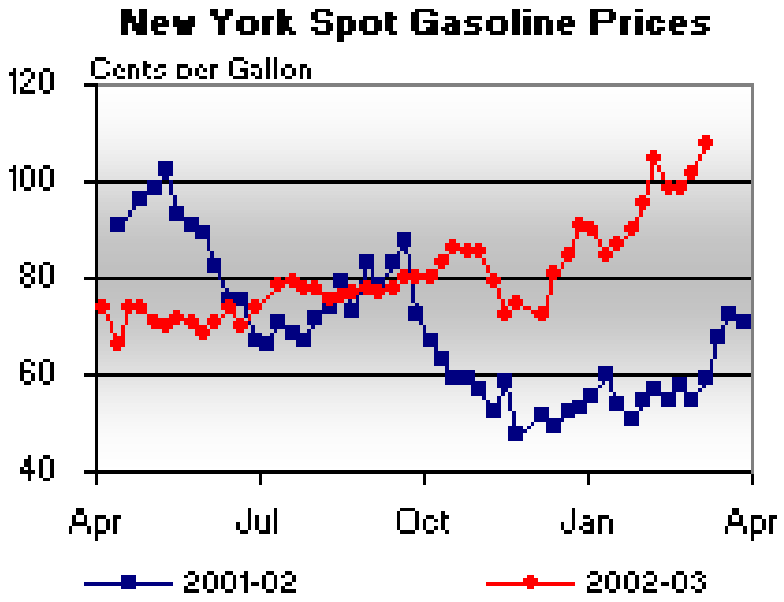
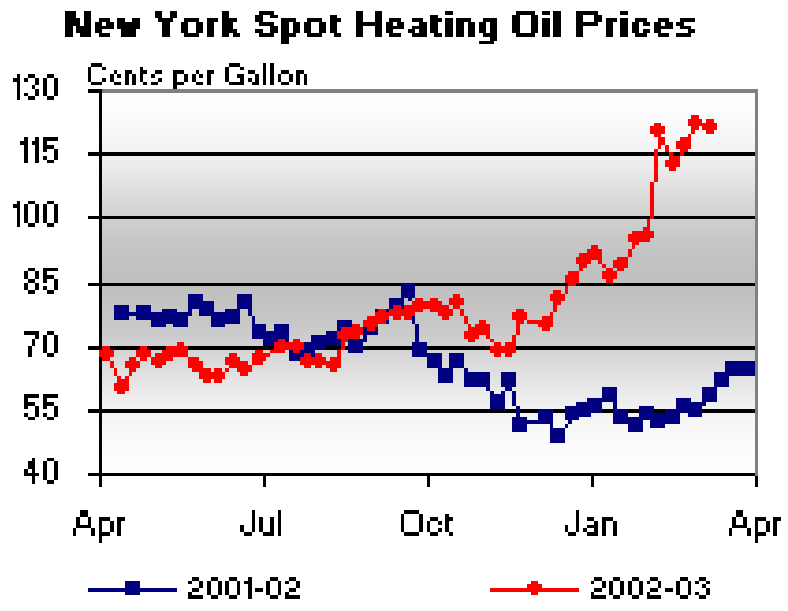
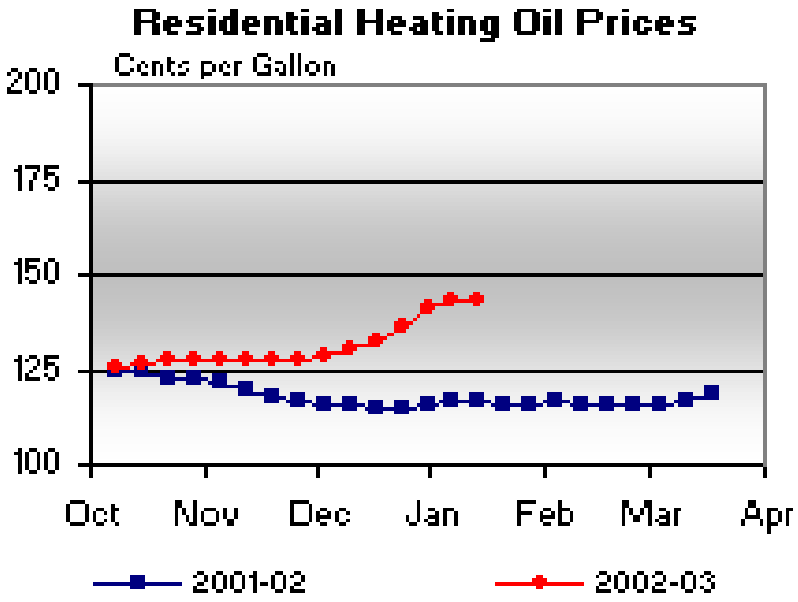
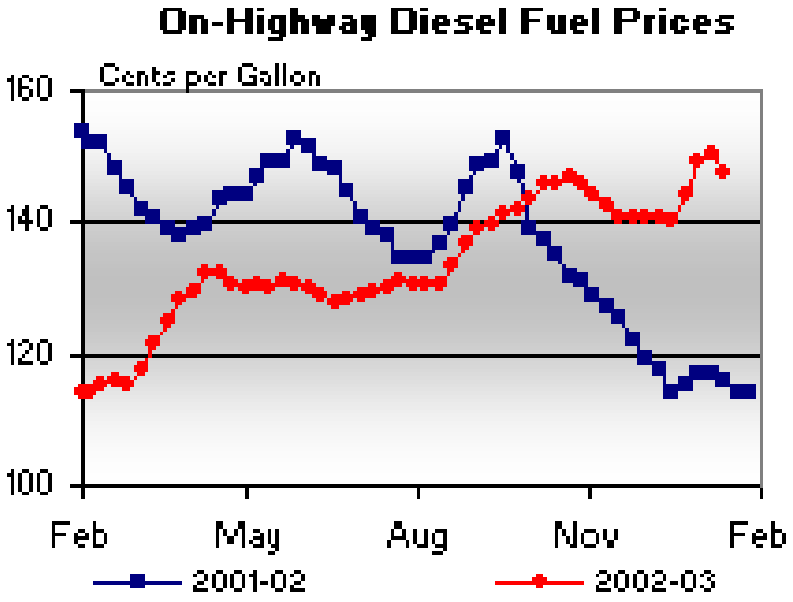
Mar
Apr
2001-02
2002-03

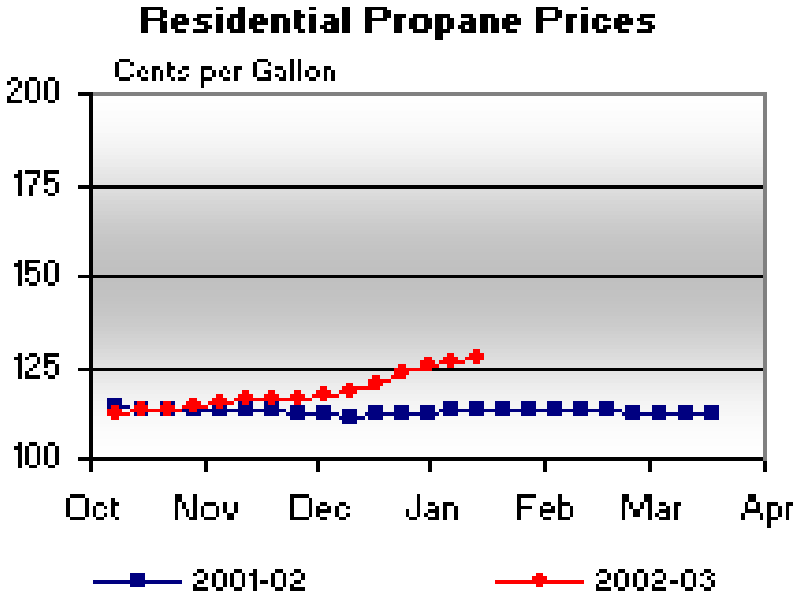

New York Spot Diesel Fuel Prices
Cents per Gallon
130
115
100
85
70
55
40
Apr
Jul
Oct
Jan
Apr
2001-02
2002-03


New York Spot Gasoline Prices
Cents per Gallon
120
100
80
60
40
Apr
Jul
Oct
Jan
Apr
2001-02
2002-03


New York Spot Heating Oil Prices
Cents per Gallon
130
115
100
85
70
55
40
Apr
Jul
Oct
Jan
Apr
2001-02
2002-03


Residential Heating Oil Prices
Cents per Gallon
200
175
150
125
100
Oct
Nov
Dec
Jan
Feb
Mar
Apr
2001-02
2002-03


On-Highway Diesel Fuel Prices
Cents per Gallon
160
140
120
100
Feb
May
Aug
Nov
Feb
2001-02
2002-03


Residential Propane Prices
Cents per Gallon
200
175
150
125
100
Oct
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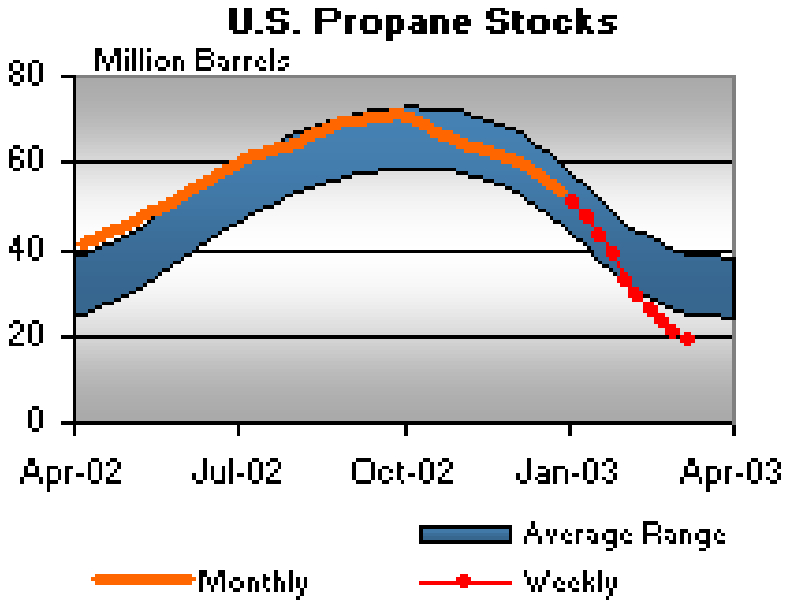
2002-03



STATEMENT OF SCOTT H. SEGAL, BRACEWELL & PATTERSON, L.L.P., COUNSEL, OXYGENATED FUELS ASSOCIATION

Chairman Voinovich, Senator Carper and members of the subcommittee, thank you for this opportunity to testify regarding national motor fuels policy and the Clean Air Act. My name is Scott Segal, and I am a partner at the law firm of Bracewell & Patterson. In that capacity, I have represented clients here in Washington on environmental policy matters for 13 years. Today, I am here in my capacity as counsel to the Oxygenated Fuels Association. In addition, I serve on the adjunct faculty of the University of Maryland (University College) in the area of Science and Technology Management.

Founded in 1983, the Oxygenated Fuels Association (OFA) is an international trade association established to advance the use of oxygenated fuel additives to improve the combustion performance of gasoline, thereby significantly reducing automotive tailpipe pollution.

OFA gathers, develops and analyzes technical information on the blending, performance, handling, health benefits and environmental properties of oxygenates used in gasoline. OFA works with Federal, State and local governments, national health organizations, environmental groups and major allied industries, such as automotive manufacturers, oil companies, and gasoline marketers and other interested parties. OFA sponsors numerous technical analyses and health science studies showing the automotive performance and health benefits of oxygenated fuels.

1. General Considerations for U.S. Motor Fuels Policy

Mr. Chairman, the decision to examine the impact of energy policy on U.S. motor fuels issues could not be more timely. As today's hearing is underway, disturbing trends are emerging regarding the security, supply and price of motor fuels. Despite the fact that the spring driving season is not yet upon us, gasoline prices at the pump are already elevated. While much of the blame for gas prices rests squarely on crude oil prices stimulated by current international uncertainties in the Middle East and Venezuela, other self-imposed policy decisions are also playing a role.

Recently, one analyst at the Oil Price Information Service described current prices this way, "It's Ash Wednesday, and we're going to be asked to give up disposable income for Lent." The analyst noted that "high fuel prices rob consumers of money to pay for computers, cars, home improvements and other economy-boosting goods

and services." ("No Stopping Gas Prices," USA Today, March 5, 2003, citing Tom Kloza). The article in which he was cited went on to assess complicating factors. And one of these was:

Conversion to ethanol instead of potential pollutant MTBE as an ingredient in summer-season gas. The change is cumbersome, and States such as California rely on distant States for corn-based ethanol. "Not a lot of folks can help them out if they get into trouble" with ethanol supplies, says Joanne Shore, senior analyst at DOE's Energy Information Administration. (Id.)

In particular, problems in California are complicated by conversion from MTBE to ethanol fuels. The noted oil analyst Trilby Lundberg put the California situation in a national context, stating in part that, "The increase of just over a nickel in the U.S. average is nearly entirely due to California refineries switching over to corn-based additives . . . Some refineries are changing over to a more expensive blend of gasoline and ethanol, which temporarily cut the State's gasoline supply by 10 percent." (Gas Prices Up to Near-Record Level, Associated Press, March 10, 2003). Californians familiar with the State's energy situation question whether moving away from MTBE makes sense right now, particularly in light of the international situation. The Daily Bulletin of California's Inland Valley reported:

Rising prices now are not due to a true shortage . . . but simply to uncertainty. "We've been living the good life for 22 years. We've had some of the cheapest gas in the world," said Bob van der Valk, bulk fuels manager for Cosby Oil in Santa Fe Springs. Market factors like the major oil companies' decision to start blending their summer gas a different way are playing a role as well, van der Valk said. Gas blended for summer usage has always required more refining than the winter variety, he said. But starting Monday, the major companies will mix their summer gas with ethanol additives instead of MTBE (methyl tertiary butyl-ether) for the first time—an added cost, and complication, at a time when a potential war in Iraq throws the reliability of Middle Eastern crude oil into question. "The last Persian Gulf War when hostilities broke out, we had an interruption in crude oil supply, and there was an instant spike in the price of gas on the street 25 to 30 cents. That hasn't even happened," van der Valk said. "That time we didn't have the MTBE-to-ethanol switch. Last time it was just strictly crude oil." ("Gas prices keep pumping up: No end in sight as a gallon climbs to $1.97," March 3, 2003).

One problem associated with ethanol blends of gasoline is simply that such blends lessen volumes because ethanol contains comparatively greater amounts of oxygen than MTBE. According to Jeremy Bulow, a Stanford University economist, the transition to ethanol simply means California will be able to make less of its own gasoline and will have to increase the amount of supply it imports from elsewhere. "It reduces the capacity of the refiners in California to produce gasoline," Bulow noted. (Alan Zibel, San Mateo County Times, Mar. 14, 2003). Further, making gasoline with ethanol can be tricky and expensive, necessitating changes in blendstocks that are quite expensive. David Hackett, president of Irvine-based consulting firm Stillwater Associates, said spot market prices for gasoline meant for blending with ethanol jumped up 10 cents last week and 17 cents amid a "dramatic shortfall" of that fuel in recent weeks. Ethanol-blended gasoline is "tough to make. It's trading at very high levels," Hackett said. "The correct kind of gasoline is in short supply." (Id.)

A consensus of studies confirms the price-supply impact of switching from MTBE to ethanol. Noted petroleum economist Phil Verleger puts it this way: removal of MTBE from the California market could push the retail price of gasoline to levels previously unseen across the United States. Research on price elasticity of gasoline—confirmed in over 300 studies—means that high prices in California will pull gasoline from the rest of the country, leaving everyone short of supply. Verleger is a principal at PKVerleger LLC and BP Senior Fellow at the Council on Foreign Relations.

As OFA has noted many times, the impact of MTBE on the national motor fuels pool is extraordinarily significant. Today, many of America's drivers use cleaner-burning gasoline designed to cost-effectively reduce harmful motor fuel emissions and improve the air we breathe. Introduced in 1995, Reformulated Gasoline (RFG) is used today in the most polluted urban areas in 17 States and the District of Columbia. RFG usage accounts for about 34 percent of the total U.S. gasoline market (i.e., 2.5 million barrels/day or 100 million gallons/day).

While the undeniable environmental benefits of RFG will be discussed later in this statement, I want to keep our eyes on the impact of MTBE volumes on fuel supply. DOE Under Secretary Bob Card testified before the U.S. Senate in 2001 that,

MTBE's contribution to gasoline supplies nationally is equivalent to about 400,000 barrels a day of gasoline production capacity or the gasoline output of four to five

large refineries. Additionally, a loss of ability to use MTBE may also affect the ability of the US gasoline market to draw gasoline supplies from Europe, the major source of our price-sensitive gasoline imports, since those refiners widely use MTBE, albeit typically at lower concentrations than in the U.S. (Statement before the Senate Energy and Natural Resources Committee, June 21, 2001).

Not only do policies designed to hasten MTBE's exit from the marketplace, therefore, complicate the existing picture for gasoline price and supply; they also undermine our clear and present needs for national security. It is no secret that as these hearings are occurring, hundreds of thousands of U.S. men and women are being mobilized in the Middle East. What few recognize is that a robust supply of motor fuels is an essential prerequisite for a safe and effective mobilization. The National Defense Council Foundation (NDCF) noted that five different Presidents—Eisenhower, Kennedy, Nixon, Ford and Carter—recognized that maintaining a healthy refining sector was essential to national security. (National Defense Council Foundation, The Growing Refining Gap, A Threat to National Security vi—Apr. 29, 1994).

As mobilization continues, one would be hard pressed to think of a worse time to remove 10 percent of the capacity of motors fuels capacity in the nation's most populous cities. The amount of refined products required to supply a modern military far exceeds the amount required in the past. For example, during the peak of Operation Desert Storm, the half million U.S. military personnel involved consumed more than 450,000 barrels of light refined products per day, nearly four times the amount used in World War II by the two million strong Allied Expeditionary Force that liberated Europe.

While ethanol currently has a significant and growing share of the fuel pool, some have suggested that mandating its further use could answer price and supply questions. We believe that an ethanol mandate does not provide an acceptable answer to U.S. energy security needs, given ethanol's heavy dependence on fossil fuel inputs and its net negative energy yield. David Pimental of Cornell University further noted that, "Numerous studies have concluded that ethanol production does not enhance energy security, is not a renewable energy source, is not an economical fuel, and does not insure clean air. Further its production uses land suitable for crop production and causes environmental degradation." (The Limits of Biomass Utilization, August 16, 2001 at 9). In a new study, published in BioScience in December 2002, Pimental and his associates at Cornell analyzed 10 alternative energy sources. Of the ten, two—ethanol and geothermal production—were found to be "not sustainable." The studies authors stated that, "Ethanol production requires more than 30 percent more fossil energy to produce a gallon of ethanol than the energy yield in a gallon of ethanol." Also, the ethanol technology causes serious environmental problems, including air, water, biological and soil pollution, the study found (for a review, see Geotimes, Feb. 2003, at http://www.agiweb.org/geotimes/feb03/resources.html) John Krummel, a senior research analyst at the Argonne National Labs, funded by the U.S. Department of Energy, said that Pimental's work on ethanol efficiency "shows the Achilles' heel of renewable energy: large land areas are needed for full deployment." Id.

2. The Role of RFG in Environmental Protection

By every measure, clean-burning RFG blended with MTBE has exceeded all pollution reduction goals and substantially and cost-effectively improved the nation's air quality. RFG has cut smog-forming pollutant emissions by over 17 percent, the equivalent of removing 64,000 tons of harmful pollution from the air we breathe or taking 10 million vehicles off our roads. RFG has reduced emissions of benzene, a known human carcinogen, by some 43 percent, while reducing total toxic air emissions by about 22 percent. Cleaner-burning MTBE accounts for a large part of the overall emission reductions from RFG. In 1998, the Northeast States for Coordinated Air Use Management found that RFG with MTBE substantially reduced "the relative cancer risk associated with gasoline vapors and automobile exhaust compared to conventional gasoline," concluding that today's RFG reduces cancer risk by 20 percent over conventional gasoline. More recently, the California Bay Area Air Quality Management District (BAAQMD) concluded that a substantial reduction in cancer risk in the region is directly attributable to MTBE.

OFA has consistently taken the position that an essential prerequisite for substantive revision of the Clean Air Act is that the actual reductions in air emissions that result from use of oxygenated RFG be preserved in any subsequent formulation of fuel.

3. Issues Related to Water Quality

Opponents of the continued use of MTBE point to allegations regarding MTBE in certain water sources. Is this fair commentary? The answer is—no—providing gaso-

line is properly contained and accidental spills and leaks promptly cleaned up. In 1996, MTBE was discovered at low levels in groundwater sources in California. MTBE has also been detected at low concentrations in other parts of the country. MTBE has since received an inordinate amount of attention from US public officials who have attempted to ban MTBE in their jurisdictions.

Initially, the US problem resulted almost entirely from a serious lapse in the regulation of underground gasoline storage tanks (UGSTs), which resulted in thousands of leaking UGSTs by the late 1980's. So widespread was the problem that the EPA established a program in 1988, the Leaking Underground Storage Tank (LUST) Trust Fund, to provide financial assistance to close down or bring these tanks up to standards. Yet by 1999, over 10 years later, only 80 percent of leaking tanks had been closed down or repaired. By 1999, EPA also estimated that almost 400,000 releases from regulated USTs had been identified. In spite of these sobering statistics, however, US public debate has focused only on MTBE detected at some of these leak sites, and not on larger problems associated with gasoline.

Claims have been made that MTBE is more water-soluble than other gasoline components. What has been completely overlooked, or ignored is that MTBE can only be introduced into the environment mixed with much larger quantities of the gasoline in which it is blended, usually through gasoline leaks or spills. The much larger problem in fact, is that where you find MTBE, which is not toxic or hazardous to health and the environment, you also find gasoline, containing compounds that are. More information on toxicity is attached as an addendum to this statement.

This committee itself has recently considered material improvements in the UST program, and OFA looks forward to working with you on such legislation. Frankly, UST implementation, enforcement and recently introduced legislation are the most direct and appropriate ways to deal with instances of gasoline components appearing in water.

Objective analysis points to MTBE having become a convenient scapegoat as the one entity to which blame for a collective failure to protect US groundwater resources can be conveniently transferred. An Australian fuels expert recently characterized this phenomenon as "shooting the messenger", a reference to the fact that some countries, such as Canada, actually use MTBE detections in water as an "early warning" of potentially significant gasoline leaks into the ground that need to be cleaned up as quickly as possible.

Citizens in the Americas are well aware that gasoline and water do not mix. Many countries around the world have safely and securely used MTBE extensively as an octane enhancer since the early 1970's, and ethanol enriched gasoline—another water soluble, but toxic oxygenate—since the 1980's. Where strict compliance with and strong enforcement of gasoline storage and handling regulations is observed, MTBE and other water-soluble additives have a statistically insignificant likelihood of ever contaminating water supplies.

Recent California experience also suggests that MTBE water quality issues have been overstated. At a National Groundwater Association conference held June 6–7, 2002, Kevin Graves of the California Water Resources Control Board gave the address at lunchtime. His question to the crowd: "What are you doing at an MTBE Conference? MTBE is not the big water quality problem in California." He told the story of a recent investigation done in their office to verify an environmentalist press statement that 4,000 drinking water wells had been abandoned in California due to contamination. His investigators found that, in actuality, only 1,200 of those wells had ever experienced an exceedance of any contaminant. They further found that the majority of the exceedances were from natural, not manmade contaminants—such as arsenic and metals. They also found that of the wells closed due to synthetic contaminants, the vast majority were solvents from dry-cleaning, pesticides from agriculture, or nitrates, from either agricultural or other industrial use. Only 10 of the closed wells had ever had exceedances of gasoline constituents of concern constituents, and only 10 had had exceedances of the MCL for MTBE"

4. Product Bans Set Dangerous Precedents

Mr. Chairman, it is our understanding that you do not support product bans, as a general rule, and that the case for a ban of MTBE is unacceptably weak. Yet there are some who would urge the adoption of a ban as a matter of political expediency. We urge the subcommittee in the strongest terms not to ban MTBE.

While Congress has acted to ban certain toxic chemicals, it has never done so without an extensive scientific record of confirmed risks and, in some cases, with an opportunity for the appropriate administrative agency to revisit the prohibition based on additional factual information. Congress has enacted only one statutory prohibition on a toxic chemical, a ban on PCBs in the Toxic Substances Control Act,

enacted in 1976. Even this prohibition allowed EPA to permit the use of PCBs where it could be shown that there was no unreasonable risk. Furthermore, while EPA has taken regulatory action before to take chemicals out of commerce or limit their use, such as asbestos, lead, and a few major pesticides, EPA only exercised its authority after substantial scientific analysis and an opportunity for public review and comment. None of the product bans thus far proposed allows EPA to make additional findings concerning the actual risk to human health nor allows EPA to exercise its regulatory expertise to provide for exceptions or changes based on changed circumstances. In fact, the data cited in the addendum below disproves toxicity claims. In this respect, a ban of MTBE is both arbitrary and unprecedented.

A ban of MTBE is also objectionable because of the typically short phase-in periods for such actions (some to be implemented in 4 years or less). In other parts of the Clean Air Act, Congress has taken action to prohibit the sale of certain chemicals or change the design of certain products, but never according to such an abrupt schedule. In Title VI of the 1990 Clean Air Act Amendments, for example, Congress mandated a phase-out of Class I chlorofluorocarbons (CFCs) over a 10-year period, and a phase-out of Class II CFCs over a 30-year period. Likewise, in Title IV of the 1990 Clean Air Act Amendments, Congress ordered a reduction in emissions of sulfur dioxide over a 10-year period. Title II of the 1990 Clean Air Act Amendments provides for a tightening of standards for automobile emissions that extends in a two-step process over 11 years. Indeed, the investments required to make the Clean Air Act RFG work were substantial enough to warrant a 5-year planning and implementation period alone.

Restrictions on MTBE not only harm MTBE manufacturers, but they also set a dangerous precedent that could inhibit the success of federally mandated environmental programs in the future. To encourage the development of environmentally protective products and processes in the future, Congress must ensure that the rules for participating in markets are clear and fair, and that the participant has a reasonable expectation to earn a return on an investment. Proposed bans on MTBE in 4 years or less send a disquieting message that Congress can arbitrarily change the rules at any time, with potentially ruinous consequences for those who have taken risks and made good faith investments.

5. Liability Issues

Mr. Chairman, as you know, instances of alleged contamination of water sources by gasoline containing MTBE have recently been the source of a number of lawsuits. These suits are now ongoing, and I am not in a position to comment on any particular lawsuit or settlement discussions. However, I would like to address some of the underlying issues relevant to public policy on litigation.

By way of review, I would note that last year's Senate energy proposal contained a safe-harbor provision applicable only to ethanol fuels. That provision stood for the proposition that because the government would be mandating renewable fuels, no plaintiff's attorney should be able to sustain the legal argument that merely complying with the law—that is, making gasoline that satisfies the requirement—could be the basis for strict products liability. If the government tells you to make a particular fuel, it makes little sense to regard such a product as "unreasonably dangerous." If the purpose of products liability is to deter unwanted behavior, such liability cannot do so when the government mandates the product.

When the House entered into conference discussions with the Senate last year, House negotiators correctly realized that the same argument, as a matter of law, fairness and policy, was clearly applicable to MTBE and other ethers.

First, it is important to recognize that MTBE usage in RFG derives from compliance with a Federal mandate—the requirement that RFG contain 2 percent (by weight) oxygen in order to achieve the goals of the Act to clean the air. An honest assessment of the conditions surrounding the adoption of the 2-percent oxygen standard leaves little doubt but that Congress intended substantial use of MTBE. For example, Senator Tom Daschle, the author of the floor amendment that established the 2-percent standard, stated during debate, "The ethers, especially MTBE and ETBE, are expected to be major components of meeting a clean octane program." (Clean Air Act Amendments of 1989, Cong. Rec., March 29, 1990 at S3511). Under certain forms of an oxygenate mandate, Senator Daschle went as far as to note that, "EPA predicts that the amendment will be met almost exclusively by MTBE , a methanol derivative." (RFG: Whose Recipe Is It Anyway, and Will It Work?, Cong. Rec., May 16, 1990 at S6383).

Senator Daschle recognized what we all know: there are substantial benefits to using MTBE as far as environmental protection is concerned. In the floor debate on the 2 percent standard, Senator Daschle cited evidence that, "NOx, hydrocarbons,

and carbon monoxide are dramatically reduced by adding the oxygenate MTBE to gasoline." (Id.).

Even opponents of MTBE concede that the Federal mandate lies at the heart of MTBE use. California Governor Gray Davis wrote to EPA, "The only reason such MTBE-free gasoline is not being made available today is U.S. EPA's enforcement of the 2.0 percent oxygen requirements." (Letter from Hon. Gray Davis, Governor of the State of California, to Hon. Carol M. Browner, Administrator of U.S. EPA, April 12, 1999).

Some argue that because the text of Clean Air Act is silent as to which oxygenate should be used, that somehow there was no intention to use MTBE. However, the overwhelming consensus of those supporting the 2-percent standard was that the provision was intended to be satisfied in a cost-effective manner that would not cause unacceptable price and supply disruptions. Given the dynamics of ethanol price and supply, it is inconceivable that the 2-percent standard was intended to be a de facto ethanol mandate. In fact, farm-state proponents of the 2-percent standard vigorously denied such an intention throughout the debates on the standard.

Given that the action of the Congress clearly underscored the requirement for MTBE use, it makes little sense to allow for the propagation of a legal theory that complying with Congress' wishes is sufficient for products liability. Of course, if gasoline containing MTBE is negligently spilled, liability may still be an issue. Last year's debate on liability did not extend to negligence theories, and every MTBE case thus filed contains in whole or in part such negligence theories. The safe harbor provision in question here is narrowly tailored and does not interfere with the ability of plaintiffs to obtain relief for truly negligent behavior that results in diminished value of resources.

There are many examples of the Congress adopting such narrowly tailored provisions dealing with liability in specific contexts. We have included a short list of such examples as an addendum to this statement. Perhaps the closest fact-pattern deals with a flame retardant, TRIS. The Federal Government required its use in children's sleepwear, only to learn that the retardant was carcinogenic, whereupon it was banned. The Federal Government not only limited liability, but it set up a settlement fund to deal with claims made by companies that manufactured TRIS.

Some have argued that imposition of strict product liability is a prerequisite for appropriate remedial actions. We respectfully disagree. First, negligence theories more than suffice to address remedial questions. Second, the use and improvement of the UST program, as discussed above, provides a far fairer and efficient mechanism to address the problems of alleged contamination. Third, one can hardly think of a less efficient mechanism for addressing water quality concerns than imposition of inflexible strict liability theories. A recent report from the Council of Economic Advisors found that using the tort system in this way "is extremely inefficient, returning only 20 cents of the tort cost dollar for that purpose." (Council of Economic Advisors, Who Pays for Tort Liability Claims? An Economic Analysis of the U.S. Tort Liability System, April 2002, at 9). Surely we can construct a policy that addresses UST leaks such that greater than 20 cents out of every dollar spent goes to actual cleanup!

6. A Look to the Future

The problems of tightness in supply and refining capacity are likely to be with us for the time being. The need to maximize energy security will continue as well. As new fuel choices present themselves, we should adopt public policies that do their best to minimize external costs associated with new fuels and fuel additives. We must maintain a robust and competitive market in fuel additives, and not allow one particular approach to dominate.

One thing we can do is adopt responsible liability protections when fuel choices are or have been mandated. Failure to do so undermines the introduction of new fuel additives that will be essential for a competitive marketplace. The Council of Economic Advisors is clear on this point: "At higher levels of expected liability costs, however, firms will choose to forgo innovation or to withhold a product from market, resulting in a net negative effect of expected liability costs on innovation." (Id. at 6). Given the current dynamics of the fuel market, we can ill afford less alternatives.

Another approach to consider is support for transition assistance for additive manufacturers. In the event that policies are adopted that make continued use of MTBE less likely, Congress should make clear that it will make adequate resources available on a timely basis to transition current additive manufacturers to new and different products capable of meeting America's energy needs.

If Congress should choose to adopt some form of ethanol mandate, then policies must be put in place that facilitate such mandates on the most acceptable terms.

For example, mere splash blending of ethanol is likely to prove to be unacceptable on a number of fronts. The volatility of splash-blended ethanol will cause unacceptable environmental and performance complications, particularly in certain regions of the country not currently using the product. In addition, ethanol's requirement for segregated pipeline transportation poses high hurdles to efficient movement and allocation of product to distant markets. As both coasts are enforced to embrace ethanol, this problem will only get worse.

One way to address the problems with splash-blended ethanol is to incorporate ethanol into an ether, ETBE. An ether with less affinity for water than MTBE, ETBE addresses both the volatility and pipeline transportation issues. However, in order to facilitate greater ETBE use, ETBE must be placed on equal-footing with splash-blended ethanol. This means that ETBE must be treated fairly in tax and regulatory contexts. For more information, please see a separate statement submitted for the record in this hearing by the Lyondell Chemical Company.

Mr. Chairman, Senator Carper, and other members of the subcommittee, thank you for your careful attention to these matters. OFA and its members look forward to working with you on a fair and effective national fuels policy—one that protects consumers, human health and the environment.

ADDENDUM ONE: SUMMARY OF CRITICAL RISK ASSESSMENTS: MTBE DOES NOT POSE HUMAN HEALTH RISKS; JANUARY 2003

STATEMENT BY JOHN KNEISS, OXYGENATED FUELS ASSOCIATION

Methyl tertiary-butyl ether (MTBE) is an oxygenated compound blended in gasoline as: 1) an octane enhancer, and 2) a cleaner-burning fuel component used to reduce harmful air pollution from automotive emissions, particularly as part of the Reformulated Gasoline (RFG) program. RFG is used today in the most polluted urban areas of the U.S. Overall, RFG accounts for about 33 percent of the total U.S. gasoline market (about 105 million gallons per day). About 85 percent of the RFG program relies on MTBE blending to achieve the substantial reductions of vehicle emissions that lead to improved air quality and public health.

MTBE is one of the most widely studied chemicals in commerce. Numerous government and world-renowned independent health organizations have conducted assessments of MTBE—none found sufficiently compelling reasons to classify MTBE as a possible cancer-causing agent for humans. This brief summary of critical risk assessments and related studies (e.g., taste/odor characteristics and drinking water occurrence) help demonstrate that incidental exposure to MTBE due to its use in gasoline does not pose increased human health risks.

European Union Risk Assessment/Risk Reduction Strategy for MTBE

In 1997, methyl tertiary-butyl ether (MTBE) was included in the third Priority List of substances selected for risk assessment under the European Union (EU) Existing Substances Regulation. The EU risk assessment was conducted within the very well defined regulatory framework established by the EU's technical agencies. In this process, health and environmental data are evaluated, together with the potential for human exposure and environmental occurrence, to assess the over-all risk potential that MTBE may pose. This process leads to a formal decision on how MTBE should be classified, and whether or not regulatory action is needed in Europe.

The full EU risk assessment for MTBE was recently completed and findings published December 2001 Official Journal of the European Communities. The principle findings of the risk assessment and risk reduction strategy review are as follows:

- The human health risk assessment concludes that consumers are NOT expected to be at risk from exposures to MTBE, and that protective measures already being applied are considered sufficient.
- Regarding worker exposure, the findings indicate attention for repeated local skin exposures during maintenance operations and automotive repair—for which the use of skin protective equipment already used to guard against exposure to other gasoline components is deemed adequate as a risk reduction measure.
- The assessment recognized the need for specific measures to protect aesthetic quality of drinking water (primarily sourced from groundwater); that is, avoidance of any taste or odor impacts. The risk protective measures address the construction and operation of underground gasoline storage tanks and delivery systems at service stations. The EU adopted recommendations on MTBE in connection with gasoline UST installation and maintenance in March 2001. In general, the EU concluded that measures being applied to prevent and minimize gasoline and MTBE releases

aimed at protection of groundwater will contribute to preventing impacts to drinking water.

Based on the risk assessment and recognition of current risk reduction strategies, the EU is not expected to limit the use of MTBE in gasoline or proceed with additional regulatory actions.

IARC Hazard Assessment for MTBE

The International Agency for Research on Cancer (IARC), established in 1965 by the World Health Organization, coordinates and conducts research on the causes of human cancer, and to develop scientific strategies for cancer control. IARC conducts highly objective, scientific reviews of health and toxicological data on chemicals substances to evaluate the potential for human cancer hazards. IARC reviews are carried out by expert panels convened from around the world—scientists representing research centers, academic institutions, governmental agencies, environmental and industry groups. The results of these expert reviews are published as monographs and made available worldwide. (IARC use a classification system to rank cancer hazard to humans: Group 1 is known human carcinogen; Group 2A is probable; Group 2B is possible; Group 3 is not classifiable as to its carcinogenicity; and Group 4 is probably not carcinogenic to humans). The IARC monographs are valuable tools for scientific bodies and persons advising policymakers addressing issues on human cancer risks.

The IARC Working Group met from 13–20 October 1998 to examine data on various chemicals, one of which was MTBE. The outcome of the IARC expert panel's deliberations on MTBE is contained in detail in the Volume 73 Monograph, published in 1999. Based on the extensive consideration made by the IARC expert panel of these data, the conclusions drawn are as follows:

- There is inadequate evidence in humans for the carcinogenicity of MTBE.
- There is limited evidence in experimental animals for the carcinogenicity of MTBE.
- MTBE is considered as Group 3 (not classifiable) as to its carcinogenicity to humans. This means that the expert panel concluded the available data did NOT warrant a more severe (higher) classification.

HHS National Toxicology Program

The National Toxicology Program (NTP), administered by the U.S. Department of Health & Human Services' National Institutes of Health, examined the MTBE data in 1998 and declined to list it as either known or "likely" to be carcinogenic to humans. The NTP is made up of various U.S. Federal environmental and health agencies, with an independent advisory Board of Scientific Counselors. This findings by the NTP is contained in the HHS 9th Report on Carcinogens (1999) submitted to Congress.

California Science Advisory Board for Proposition 65

In December 1998, the California Science Advisory Board (Carcinogen Identification Committee), under the State's Proposition 65 law, did not list MTBE as "known to the State to cause cancer." Another committee of the Advisory Board separately determined that MTBE does not cause reproductive toxicity or birth defects.

Based on current understanding of the available health and toxicity information, MTBE does not represent a threat to human health from exposure at the extremely low levels reported in the environment as a result of MTBE's current use in gasoline.

MTBE Taste & Odor Characteristics

The U.S. EPA Health Advisory Program provides information and guidance to individuals or agencies concerned with potential impacts to drinking water supplies for substances for which no national regulations currently exist. Advisories are not mandatory standards for action; are used only for guidance in determining actions; and are not legally enforceable. In late 1997, the EPA examined available data on MTBE and developed a consumer acceptability guidance to avoid levels that could impact the taste and/or odor of drinking water.

The EPA advisory on MTBE recommends that". . . keeping concentrations in the range of 20 to 40 micrograms per liter (μg/L) of water or below will likely avert unpleasant taste and odor effects . . ." (mg/L is equivalent to parts per billion or ppb). The advisory level will protect sensitive individuals of the population, although some may potentially detect taste and odor at lower levels. The EPA noted that occurrences of groundwater contamination observed at or above this level generally resulted from leaks in gasoline storage tanks or pipelines, not from other sources. The EPA advisory level of 20 to 40 ppb as protection of the water source from unpleas-

ant taste and/or odor will also protect consumers from potential health effects with a wide margin of safety.

Drinking Water Sampling Data (Occurrence)

The U.S. Geological Survey (USGS) has conducted a new national survey of MTBE (and other volatile organic compounds—VOCs) in community drinking-water sources, as part of the National Water-Quality Assessment Program (NAWQA). This multi-year and widely geographic sampling and analytical survey has shown that MTBE was detected at any level in only 8.7 percent of samples. More significantly, the median level of detected concentration for MTBE was only 0.54 ug/L (ppb). The maximum concentration detected in drinking water sources did not exceed the EPA consumer acceptability guidance level of 20 to 40 ppb. The USGS has stated that these". . . studies suggest that MTBE levels do not appear to be increasing over time and are almost always below levels of concern from aesthetic and public health standpoints."

The California Department of Health Services has the most comprehensive dataset on MTBE occurrence in drinking water sources. Monitoring began in early 1997. MTBE has been detected in less than 1 percent (0.9 percent) of all sources tested—88 of 10,010 total sources—providing supply to about 92 percent of the State's population (about 31.4 million people) from nearly 3,000 systems. Furthermore, the trend on sample analysis since 1997 indicates that detections and levels of MTBE have been declining in the State.

As more comprehensive data are acquired, MTBE detection frequency and levels appear to be declining (factually, they were never substantial to begin with), and this trend is expected to continue, especially as compliance and enforcement of underground gasoline storage tank rules progress.

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ADDENDUM TWO: EXAMPLES OF NARROW LIABILITY PROVISIONS RECENTLY ADOPTED BY CONGRESS

a. Section 162 of the Amtrak Reform and Accountability Act of 1997. Pub. L. No. 105–134, § 111 Stat. 2570 (codified at 49 U.S.C.A. § 28103).

This section delimits the award of punitive damages in accidents resulting in loss of life or damage to property that result from rail projects or operations. The language set a very high standard for punitive damages, even preempting State law and practice on the subject. The legislation also capped total damages related to any one incident.

This provision seeks to vindicate the important Federal interest in ensuring safe and cost-effective rail travel in the United States. Like provision of adequate clean-fuel additives, one of the reasons that legislation encourages rail travel is to advance Clean Air Act compliance goals. One of the specific criteria for providing Federal assistance for rail construction is: "whether the work to be funded will aid the efforts of State and local governments to comply with the Clean Air Act (42 U.S.C. 7401 et seq.)." 49 U.S.C. § 26101(c)(6).

b. Biomaterials Access Assurance Act of 1998. Pub. L. No. 105–230, 112 Stat. 1519 (1998)(codified at 21 U.S.C. § 1601–06).

Here, Congress was concerned that liability potential would keep plastics manufacturers from producing the specialty plastics needed for the construction of biomechanical devices to be placed inside the human body. Essentially, such biomaterial manufacturers were relieved of liability that may arise by simply being included in malpractice cases otherwise undertaken against doctors and device manufacturers. Only if the alleged facts related to a failure to meet specifications or a breach of contract could the biomaterials manufacturer be brought into the case.

In this case, MTBE (like biomaterials) is simply a component part incorporate into another product (reformulated gasoline) designed to achieve a socially useful purpose (cleaning the air). The analogy seems fairly compelling.

c. General Aviation Revitalization Act of 1994. Pub. L. No. 103–298, 108 Stat. 1552–54 (1994) (codified at 49 U.S.C. § 40101 note).

Another transportation example. Here, Congress was concerned that the increasing liability burden for personal aircraft was driving the industry out of the market for this mode of transportation. As a result, Congress accepted an 18-year Federal statute of repose for manufacturers of such aircraft.

d. Good Samaritan Food Donation Act. Pub. L. No. 104–210, 110 Stat. 3011 (codified at 42 U.S.C. § 1791).

This statute exempts persons who donate food and grocery products to non-profits for distribution to the needy from civil or criminal penalties for foods that were "apparently wholesome" in order to encourage certain forms of donation activities.

e. No Child Left Behind Act of 2001. Pub. L. No: 107–110. (not yet codified, signed into law by the President on Jan. 8, 2002).

This statute includes a title sets forth, as II-C–5, Teacher Liability Protection. Preempts State law, except where it provides additional protection of teachers from liability. Provides that no teacher in a school shall be liable for harm caused by an act or omission on behalf of the school if the teacher was acting within the scope of employment or responsibilities relating to providing educational services, subject to specified requirements and exceptions. Limits punitive damages and liability for non-economic loss. Added in the House and agreed to by recorded vote: 239—189.

In short, there are numerous targeted examples of specialized liability relief, with a particular emphasis on punitive damage relief. In none of the above reference cases were the issues related to a product utilized pursuant to a Federal performance standard that in turn was banned. The one example where this situation obtained, the children's sleepwear flame retardant TRIS, is discussed in the text of the statement.

STATEMENT OF RICHARD E. WAGMAN, FIRST VICE CHAIRMAN, AMERICAN ROAD AND TRANSPORTATION BUILDERS ASSOCIATION

Introduction

Good morning, Mr. Chairman and members of the committee. I am Richard Wagman, President of G.A. & F.C. Wagman, a highway contractor based in York, Pennsylvania, and First Vice Chairman of the American Road and Transportation Builders Association.

ARTBA, which celebrated its 100th anniversary in 2002, has over 5,000 member firms and member public agencies from across the Nation. They belong to ARTBA because they support strong Federal investment in transportation improvement programs to meet the needs and demands of the American public and business community. The industry we represent generates more than $200 billion annually in U.S. economic activity and sustains 2.5 million American jobs.

At the outset, I would like to thank you for giving our industry an opportunity to testify at this important hearing. Your understanding of, and long support for, transportation improvement programs and investment is deeply appreciated by the transportation and construction communities.

This morning I want to focus on how Federal policies to promote the use of alternative fuels impact the nation's surface transportation programs, the potential impact of a proposed renewable fuels standard on Highway Trust Fund revenues, and the ability of the Federal highway program to help meet the nation's highway investment needs. At the outset of this discussion, I want to make it abundantly clear that ARTBA strongly supports the use of renewable fuels. Our goal in this debate, however, is to ensure that Federal policies to promote alternative fuel use not be undertaken at the expense of another national priority-a safe and efficient transportation network.

ARTBA has a long history of involvement in this critical issue. We presented testimony to this subcommittee in June 2000 on the impact of ethanol's tax treatment on Highway Trust Fund revenues. We also delivered similar messages in appear-

ances before the House Ways and Means Committee and Senate Finance Committee.

Last year, when the Senate was debating a renewable fuels standard as part of comprehensive energy legislation, Chairman Inhofe and others pursued amendments that would have rectified the impact of current renewable fuel tax incentives on Highway Trust Fund revenue. A coalition of Senate leaders and interest groups supporting the renewable fuels standard made the case that the energy bill was not the right vehicle for this issue and pointed to the 2003 reauthorization of TEA–21 as the appropriate legislative vehicle for that action.

Mr. Chairman, Congress is in the throe of reauthorizing TEA–21 as we speak. Now is the time to resolve the zero sum game that exists between promoting ethanol and other alternative fuels on the one hand, and the ability to meet the nation's highway and transit needs on the other.

As context for my remarks, you should know that ARTBA believes the U.S. highway program must emphasize five key principles:

1. Highway capital improvements should be financed primarily through the collection of highway user fees. And these fees, which should be levied and collected by government, must be adjusted as warranted to provide a source of funding that is consistent with the investment requirements necessary to meet the conditions and performance needs of the nation's highway, bridge and mass transit network.
2. Safety must be a paramount concern in the design, construction, maintenance and traffic operations of the nation's highway system.
3. Critically deficient bridges should be repaired or replaced.
4. Improved rideability and pavement durability should be program goals; and
5. The capacity and efficiency of the highway system should be improved as necessary to meet public demand and the needs of the economy.

In line with our support for the user-fee concept of financing surface transportation improvements, we also believe all energy sources powering motor vehicles that use the nation's highway and bridge system should be taxed to pay for system improvements through the Federal Highway Trust Fund. The current investment needs of our highway system dictates that the excise on each motor vehicle powering source, from an energy content basis, should be at least equivalent to that currently levied on gasoline.

These views are supported by virtually all State and national organizations representing highway transportation and construction concerns.

The Tax Nexus Between Federal Transportation, Energy, Environmental Policies

My primary purpose today is to bring to your attention the unique nexus between Federal transportation, energy and environmental policies. Policy in all three areas have a common thread-the use of Federal tax law involving motor fuels to advance national objectives.

Unfortunately, these tax policies are often debated and decided separately and thus in a vacuum-during a transportation bill . . . an energy bill . . . or an environmental bill. As a result, positive impacts for one policy area sometimes contradict-or even undermine-goals and objectives in another policy area.

The Federal Government first levied a highway user fee on the sale of motor fuels in 1956, when it established the Federal Highway Trust Fund. The original congressional intent in establishing the user fee-an excise on gasoline and diesel fuel-is clear: to ensure that America would have a "pay-as-you-go" system for funding needed highway and bridge improvements.

The principle was-and remains today-that the more you drive, or use the roads, the more you pay to build and maintain them.

This user fee principle was reaffirmed by the Congress in 1998 with the enactment of the Transportation Equity Act for the 21st Century, or TEA–21.

Unfortunately, current public investment in road, bridge and mass transit improvements financed by highway user fees levied at all levels of government is grossly insufficient to maintain the physical conditions of the system, much less improve its overall performance for the American public and business community. The essentially status quo investment that would be provided by the fiscal year 2004 budget resolution proposals demonstrate that existing Highway Trust Fund revenues are falling further and further behind the growing needs of the nation's highway and transit network.

Status of the Nation's Highway Network

Under the landmark TEA–21, Federal highway investment will have averaged just under $29 billion per year by the time the program expires at the end of Fiscal Year 2003. This represents a substantial increase over the funding provided under the Intermodal Transportation Efficiency Act of 1991 (ISTEA).

Under TEA–21, however, investment by government at all levels has barely been enough to maintain the physical condition of the nation's highways and bridges, according to the U.S. Department of Transportation's (U.S. DOT) 2002 biennial report on the condition and performance of the nation's highways, bridges and transit systems. Worse, investment has fallen far short of the amount needed to maintain travel times and prevent traffic congestion from increasing-concerns which are of equal, if not greater, importance to highway users.

While the nation's roadway and bridge network has benefited from increased Federal investment under TEA–21, the system still has enormous, unmet capital needs. Based on data published in the 2002 U.S. DOT report, adjusted to reflect OMB's estimate for future inflation and a traditional 43 percent Federal share of highway capital outlays, a Federal highway program close to $50 billion per year is necessary just to maintain the system conditions and performance levels over the period 2004–2009, which is the expected duration of the next Federal surface transportation authorization bill.

Current forecasts of revenues into the Highway Account of the Highway Trust Fund would only support a Federal highway program of approximately $33 billion by fiscal year 2009, or less than two-thirds the amount needed just to maintain current conditions.

Promoting Alternative Fuels and the Highway Trust Fund

Clearly the intent of Congress in enacting TEA–21was to make surface transportation investment a Federal priority. But as Congress discusses and debates TEA–21 reauthorization legislation in the months ahead, this committee should be aware that some current Federal energy and tax policies work against the goals of TEA–21.

Consider the impact of the current Federal tax treatment of ethanol-gasoline motor fuel blend sales. And again, I must make clear ARTBA has no brief against the promotion and use of ethanol as a motor fuel beyond the way it impacts the Highway Trust Fund.

Current Federal Tax Treatment of Alternative Fuels

A motorist purchasing gasoline contributes 18.3 cents per gallon to the Highway Trust Fund through the Federal user fee–15.44 cents per gallon to the trust fund's Highway Account and 2.86 cents per gallon to the fund's Mass Transit Account. (An additional 0.1 cents per gallon is contributed to the Leaking Underground Storage Tank Trust Fund.)

Under current Federal law, a motorist purchasing gasohol (with 10 percent ethanol), however, pays a 13.1 cents per gallon excise, or 5.2 cents per gallon less than those who purchase straight gasoline. A slightly higher excise is applied to gasohol sales with less ethanol. Of the 13.1 cents per gallon Federal excise paid on a gallon of 10 percent gasohol, a user fee of 10.6 cents per gallon goes into the Highway Trust Fund–7.74 cents per gallon to the trust fund's Highway Account and 2.86 cents per gallon to the fund's Mass Transit Account. Two-and-a-half cents is deposited in the Federal General Fund for deficit reduction purposes. (There is also a 0.1 cents per gallon contribution to the Leaking Underground Storage Tank Trust Fund.)

The combination of the 5.2 cent per gallon tax incentive for 10 percent gasohol and the 2.5 cent per gallon contribution to the general fund reduces deposits in the Highway Trust Fund Highway Account by 7.7 cents per gallon sold. (It is also worth pointing out that the Mass Transit Account of the Highway Trust Fund receives the same contribution from either the purchase of gasoline or gasohol. This means the cost of Federal policies to promote the use of ethanol fuels comes exclusively at the expense of the Highway Account.)

As a result of TEA–21's provisions that directly link incoming Highway Account revenues to annual Federal highway and bridge investment, the ethanol tax incentive has a direct consequence of making less revenue available for investment in needed highway and bridge improvements.

Impact of Alternative Fuel Incentives on Federal Highway Investment

The most current example of the impact of alternative fuel tax incentives on Federal highway investment is the case of ethanol-based motor fuels. The computations in Table 1, based on 2001 ethanol use data from the Federal Highway Administration's "2001 Highway Statistics" report, show current Federal tax policy on ethanol motor fuel sales in that year resulted in approximately $1.3 billion per year of foregone Highway Trust Fund Highway Account revenues. Of the $1.3 billion, roughly $900 million per year is attributable to the 5.2 cents (10 percent ethanol) and 4.16 cents per gallon (less than 10 percent ethanol) tax incentive for gasohol and over $400 million is due to the 2.5 cents per gallon of the gasohol excise that is deposited

in the Federal general fund. As ethanol usage has increased in recent years, these foregone revenues have also increased.

Table 1

10 percent usage (gallons)	10,098,118,000
5.3 cents per gallon tax incentive	$535,200,254.00
2.5 cents per gallon to General Fund	$252,452,950.00
Lost Highway Account revenues	$787,653,204.00
Less than 10 percent gasohol usage (gallons)*	7,345,983,000
4.081 cents per gallon tax incentive	$353,486,082.00
2.5 cents per gallon to General Fund	$183,724,575.00
Lost Highway Account revenues	537,210,657.00
Total lost Highway Account revenues	$1,324,863,861.00

* According to the U.S. DOT, less than 10 percent gasohol is generally a 7.7 percent blend. Source: 2001 Highway Statistics, Table MF–33E.

To put this number in perspective, $1.3 billion would resurface over 13,000 lane miles of interstate highway or replace almost 1,400 outdated unsafe two-lane bridges.

Federal tax treatment of ethanol-based motor fuels impacts individual States differently. TEA–21's highway funding distribution formula requires the apportionment of Interstate Maintenance and Surface Transportation Program funds to be based, in large part, on a States contribution to the Federal Highway Trust Fund's Highway Account. States that sell ethanol-based motor fuels are, therefore, at a relative disadvantage to States that don't. States that sell more ethanol than other States are also at a competitive disadvantage.

Ohio is one of those States. As Governor Robert Taft testified last year before the House Transportation and Infrastructure Committee, "In Ohio ethanol comprises 40 percent of our fuel use. That means that Ohio's contribution to the Federal Highway Trust Fund is reduced about $166 million annually. . . . We estimate that Ohio's Federal highway apportionment is reduced by $150 million annually as a result of our substantial use of ethanol. . . . The contradiction is obvious. If an Ohio or a California use these domestically produced, clean burning fuels they then face a loss of Federal funds. I call this the ethanol penalty. We are penalized for responding to the explicit Federal policy which encourages us-and which creates market forces which compel us-to use alternative fuels. . . . I urge Congress to recognize that current Federal formulas penalize States for using this domestically produced, clean-burning fuel."

Increased Alternative Fuel Use Impact on Highway Trust Fund

Mr. Chairman, what I have just described is a historical review of how the current tax treatment of ethanol fuels has impacted the Highway Trust Fund. Table 2 below demonstrates how this situation could be exacerbated in the future, based on the U.S. Department of Energy's projections for increased ethanol usage, if the tax treatment of ethanol fuels is not modified to protect the Highway Trust Fund. To make a bad situation even worse, Table 2 also demonstrates how Highway Trust Fund revenues would be reduced even further if proposals to establish a renewable fuels standard are enacted without resolving the Highway Trust Fund issue.

The proposed renewable fuels standard would require refiners to incorporate a target amount of ethanol into motor fuels, beginning with 2.3 billion gallons of ethanol in 2004 and growing to 5.0 billion gallons by 2012. While I am not qualified to comment on the merits of ethanol, I can assure you that requiring an increase in the use of gasohol would also increase the amount of lost revenues to the Highway Account and, therefore, further diminish the nation's ability to meet its highway infrastructure needs.

If Congress continues to provide a tax incentive from the Highway Trust Fund for gasohol of just over 5 cents per gallon and continues to deposit 2.5 cents per gallon of the gasohol excise tax into the General Fund rather than the Highway Trust Fund, the proposed renewable fuels standard would reduce Highway Trust Fund revenues by approximately $25.7 billion during the nine fiscal years fiscal year 2004—fiscal year 2012 that are covered by the proposed legislation, or about $2.9 billion annually.

Before discussing this table, I think it is important to note that the use of gasohol as a motor fuel is projected to grow significantly in the future with or without a

renewable fuels standard. In 2001, the Nation used almost 1.6 billion gallons of ethanol in motor fuels. The Energy Department predicts that this will jump to 2.7 billion gallons by 2004, largely because of the continued oxygenation requirement under the Clean Air Act and the phase-out of MTBE.

Between 2004 and 2012, ethanol use in motor fuel is expected to grow another 600 million gallons to 3.3 billion gallons under current market forecasts, even without a renewable fuels standard.

Table 2

	Projected ethanol consumption				Renewable fuels mandate				Cost of renewable fuels mandate			
		Highway Account revenue loss (Thousands of dollars)				Highway Account revenue loss (Thousands of dollars)				Highway Account revenue loss (Thousands of dollars)		
Year	Thous. gallons	2.5 cpg General Fund deposit	5.2/5.1 cpg subsidy	Total	Thous. gallons	2.5 cpg General Fund deposit	5.2/5.1 cpg subsidy	Total	Additional ethanol thous. gallons	2.5 cpg General Fund deposit	5.2/5.1 cpg subsidy	Total
2004	2,727,207	$770,397	$1,418,148	$2,188,545	2,300,000	$649,718	$1,196,000	$1,845,718	-427,207	$0	$0	$0
2005	2,786,994	$787,286	$1,421,367	$2,208,653	2,600,000	$734,463	$1,326,000	$2,060,463	-186,994	$0	$0	$0
2006	2,854,446	$806,341	$1,455,767	$2,262,108	2,900,000	$819,209	$1,479,000	$2,298,209	45,554	$12,868	$23,233	$36,101
2007	2,928,030	$827,127	$1,493,295	$2,320,422	3,200,000	$903,955	$1,632,000	$2,535,955	271,970	$76,828	$138,705	$215,532
2008	3,003,147	$848,347	$1,531,605	$2,379,952	3,500,000	$988,701	$1,785,000	$2,773,701	496,853	$140,354	$253,395	$393,749
2009	3,076,731	$869,133	$1,569,133	$2,438,266	3,900,000	$1,101,695	$1,989,000	$3,090,695	823,269	$232,562	$419,867	$652,429
2010	3,156,447	$891,652	$1,609,788	$2,501,440	4,300,000	$1,214,689	$2,193,000	$3,407,689	1,143,553	$323,038	$583,212	$906,250
2011	3,231,564	$912,871	$1,648,098	$2,560,969	4,700,000	$1,327,684	$2,397,000	$3,724,684	1,468,436	$414,812	$748,902	$1,163,715
2012	3,299,016	$931,925	$1,682,498	$2,614,424	5,000,000	$1,412,429	$2,550,000	$3,962,429	1,700,984	$480,504	$867,502	$1,348,006
Total 2004-12	27,063,582	$7,645,080	$13,829,699	$21,474,779	32,400,000	$9,152,542	$16,547,000	$25,699,542	5,336,418	$1,680,966	$3,034,816	$4,715,782

Source: U.S. Department of Energy, Projected Ethanol Production and Consumption, by tax.
ARTBA analysis assumes gasohol consumption will be half 10% gasohol and half 7.7% gasohol, based on trend in Table MF-33E from 2001 *Highway Statistics* and earlier years.

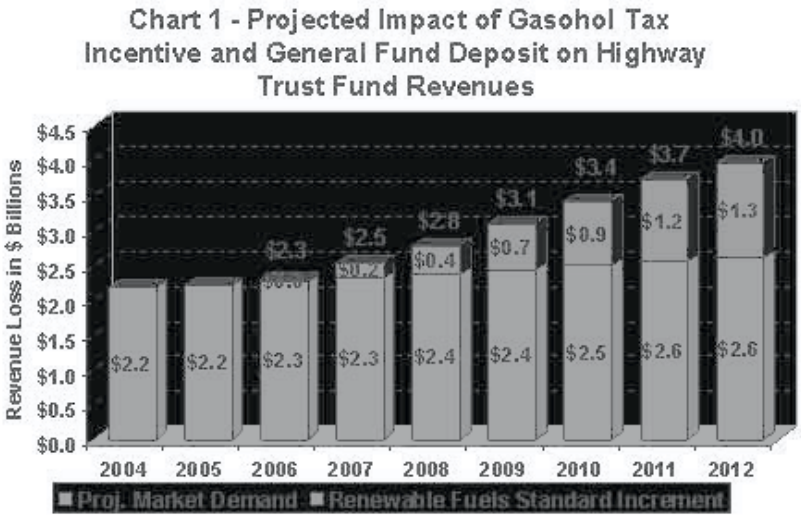
As the first set of columns in Table 2 shows, the projected market growth of ethanol in motor fuels will cost the Highway Trust Fund almost $21.5 billion in foregone revenues between 2004 and 2012. Of this total, $7.6 billion would result from the current practice of depositing 2.5 cents per gallon of the excise tax on gasohol

into the General Fund for deficit reduction. The remaining $13.8 billion of the projected loss would be due to the ethanol tax incentive, which works out to 5.2 cents per gallon (5.1 cents per gallon starting in 2005) for gasohol that is 10 percent ethanol and 3.93 cents per gallon for gasohol that is 7.7 percent ethanol.

The proposed renewable fuel standard would increase the revenue loss to the Highway Trust Fund. For 2004 and 2005, the cost of the proposed standard would be negligible because the market demand for gasohol is expected to exceed the proposed minimum. But starting in 2006, the required use of ethanol in motor fuels would begin to exceed the projected market demand.

The second set of four columns in Table 2 shows the total projected cost of the renewable fuels standard to the Highway Trust Fund. As explained above, much of this cost would occur anyway because of the projected growth of demand for ethanol in motor fuels.

The incremental cost of the renewable fuels standard is shown in the final set of four columns in Table 2. There should be no incremental cost in 2004 and 2005 because market demand those 2 years is projected to exceed the minimum standard. Between 2006 and 2012, however, the proposed standard would have an incremental cost, which the table shows is projected to total $4.7 billion. This includes a projected $1.7 billion loss to the Highway Trust Fund from the 2.5 cents per gallon of gasohol deposited into the General Fund and $3.0 billion from the ethanol tax incentive. Chart 1 clarifies these overlapping impacts on the Highway Trust Fund revenues.



Source: ARTBA analysis of Energy Dept. data

Let me put these figures into perspective.

The $21.5 billion total revenue loss from the projected market growth of ethanol in motor fuels would be sufficient to repave every rural Interstate Highway in the United States at least once in the next 9 years. It would completely cover the construction costs, including rail lines and stations, for a 90-mile urban subway system or approximately a system like Washington, DC's Metro.

The $4.7 billion extra cost of the renewable fuels standard over current gasohol projections would repave two-thirds of all of the urban Interstate Highway miles or build a 120-mile light rail mass transit system.

Conclusion

With the reauthorization of TEA–21 and debate over comprehensive national energy policy scheduled for this year, Congress has a unique opportunity to formally acknowledge the nexus among transportation, energy and environmental policies.

The Nation is at a critical juncture.

It is clear America needs to reduce its dependence on foreign energy sources that power our U.S. transportation fleet.

It is clear that meeting Federal air and water quality standards without compromising American mobility and the economy will require even cleaner transportation vehicles and motor fuels.

It is also clear that America has a growing transportation infrastructure capacity crisis-not just in its road network, but also in our airport, water port, rail and mass transit systems. If we do not meet our transportation network challenges, we will also compromise American mobility, air and water quality goals, and the U.S. economy.

Mr. Chairman and members of the committee, as you develop legislation to reauthorize TEA–21 and other relevant measures, we urge you to ensure that Federal funding for much needed transportation improvements is not shortchanged in the pursuit of promoting use of alternative motor fuels.

And we will support you in any legislative effort that seeks to address the concerns we have raised. Among the suggested proposals to resolve this issue are either eliminating the ethanol fuel tax incentive directly or providing a Federal General Fund reimbursement for Highway Trust Fund revenues foregone due to ethanol's tax treatment. We also understand Senators Grassley and Baucus are developing a proposal to provide ethanol refiners a General Fund tax credit in lieu of an excise tax incentive.

It should also be recognized that the fiscal year 2004 budget proposals from the Bush Administration and the House and Senate Budget Committees all propose redirecting the 2.5 cents per gallon of the ethanol fuels excise from the General Fund to the Highway Trust Fund. This is an excellent first step and we urge Congress to build on these recommendations to ensure the Highway Trust Fund is fully compensated for the use of all alternative fuels.

We commend all Members of Congress, the Administration and those in the transportation and renewable fuels communities that are working to find a solution to this issue. From our perspective, the primary objective must be that this issue is fully resolved once and for all so that our nation's transportation and energy priorities are in sync, rather than at odds.

Mr. Chairman, that concludes my testimony. Again, thank you for the opportunity to present our views to this subcommittee. I will try to answer any questions you or other committee members might have.

STATEMENT OF A. BLAKEMAN EARLY, AMERICAN LUNG ASSOCIATION

Mr. Chairman, my name is A. Blakeman Early. I am pleased to appear today on behalf of the American Lung Association to discuss the use of MTBE in Reformulated Gasoline (RFG) and conventional gasoline. The American Lung Association has long been a supporter of the use of RFG as an important tool that many areas can and should use to reduce unhealthy levels of ozone.

Clean Fuels Help Reduce Smog

As has been demonstrated in California, "clean" gasoline can be an effective tool in reducing car and truck emissions that contribute to smog. Based on separate cost effectiveness analyses conducted by both the U.S. EPA and the State of California, when compared to all available control options, reformulated gasoline (RFG) is a cost-effective approach to reducing the pollutants that contribute to smog.[1] Compared to conventional gasoline, RFG has also been show to reduce toxic air emissions from vehicles by approximately 30 percent.[2]

Background of RFG Proposed Changes

The American Lung Association was a member of the Blue Ribbon Panel on Oxygenates in Gasoline. We endorsed the recommendations of the Panel in a report issued in 1999. And the American Lung Asociation engaged in extensive negotiations with the oil industry, ethanol industry, corn growers and many other stakeholders regarding needed legislative change to the RFG program. Throughout these discussions we maintained that three recommendations of the Blue Ribbon Panel were preeminent and must be included in legislation that modified the RFG provisions of the Clean Air Act. These were: 1) that MTBE must be eliminated from all gasoline, not just RFG 2) the mandatory oxygen requirement for RFG must be eliminated, and 3) "anti-backsliding" provisions must be added to the law to ensure that when refiners produced RFG without oxygen and without MTBE, the resulting fuel reduced toxic air emissions just as much as currently produced RFG. The American

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[1] U.S. Environmental Protection Agency, Regulatory Impact Analysis, 59 FR 7716, Docket No. A–92–12, 1993

[2] Report of the Blue Ribbon Panel on Oxygenates in Gasoline, September 1999, pp. 28–29

Lung Association endorsed legislation in the 106th Congress that contained these critical elements plus a Renewable Fuel Standard (RFS) designed to compensate the ethanol industry for its loss of market associated with the elimination of the oxygen requirement in RFG.

As negotiations continued, a large numbers of stakeholders(except the MTBE industry) supported the elimination of MTBE over 4 years, and anti-backsliding provisions for air toxics. Other elements of the Blue Ribbon Panel recommendations gained wide acceptance including: expanding EPA's authority to address MTBE in groundwater under the Leaking Underground Storage Tank (LUST) program, and augmenting EPA's authority to test and regulate gasoline constituents based on threats to public health or the environment from water contamination. But further progress on compromise legislation was thwarted over a disagreement between the ethanol industry which wanted an Renewable Fuel Standard that "grew" the industry by increasing over time and the API which opposed mandatory use of ethanol in volumes above those needed for octane in RFG and conventional gasoline.

When the energy bill in the Senate gained momentum last year, the ethanol industry and the API announced an agreement that introduced a completely new element to the discussion. While agreeing on a level of mandatory ethanol use through an RFS that would grow the ethanol industry, the API and the ethanol industry announced that a necessary element of any compromise legislation must include a "safe harbor" that shielded both industries from defective product liability under Federal or State law for the use of either MTBE or renewable fuels including ethanol. The American Lung Association opposed this new concept. Ultimately, the Senate adopted many of the recommendations of the Blue Ribbon Panel as well as a "safe harbor" that applies only to renewable fuels. The American Lung Association endorsed the passage of the bill with the removal of the safe harbor provision.

Unfortunately, during the conference on the energy bill, the house conferees proposed changes to the Senate language highly favorable to the MTBE industry. This response killed the possibility for agreement. Not only did the House offer extend the safe harbor from defective product liability to MTBE contamination incidents, it eliminated the Senate ban of MTBE in fuel, preempted States from prohibiting MTBE in fuel after enactment, and it eliminated Senate language that authorized EPA to regulate fuel additives to prevent water contamination. (See Appendix A for details) For areas suffering from MTBE contamination, the House offer was the worst of both worlds. It eliminated the most important tools in the Senate compromise bill to stem MTBE contamination and obtain cleanup assistance from refiners, while still imposing the burden of a Renewable Fuels Standard nationwide.

The American Lung Association Supports the Phase Out of MTBE in All Gasoline

As a member of the Blue Ribbon Panel on Oxygenates in Gasoline, the American Lung Association learned of the significant threat that MTBE poses to the nation's water supplies. Subsequent data collected by the USGS and presented in testimony by Mr. Erik Olson from Natural Resources Defense Council which I submitted with my testimony, only heightens the concern over MTBE contamination. USGS found that about 15 percent of drinking water tested in the high MTBE use areas of the Northeast contained MTBE.[3] It is estimated that over 18 million people are served by drinking water contaminated by MTBE. (See Attachment A) The struggle that Mr. Paul Granger provides in testimony presented to the subcommittee today will likely be repeated in many areas, as the USGS estimates that about 35 percent of community water system wells are located within 1 km of a Leaking Underground Storage Tank (9000 wells)[4] We also came to understand that the continued use of MTBE in RFG undermines public support for the RFG program. In addition, EPA found in its boutique fuels study that the antipathy toward MTBE has lead many States to adopt "boutique fuels" in lieu of Federal RFG in order to avoid high amounts of MTBE dictated by the mandatory oxygen requirement.These factors provide compelling reasons to assure that any legislation requires MTBE be phased out of all gasoline, not just RFG. We believe there is a broad consensus in support of the MTBE phase-out. In short, removing MTBE from our nation's fuel supply is both a political and environmental imperative that must accompany any other fuel changes that Congress adopts. We believe the introduction of MTBE phase-out authority in the Senate energy bill, along with "anti-backsliding" and other provisions that would implement recommendations of the Blue Ribbon Panel represents a

[3]Moran, Zogorski, Squillace, "Occurrence and Distribution of MTBE and Gasoine Hydrocarbons in Groundwater and Groundwater Used as Source Water in the United States and in Driniking Water in 12 Northeast and Mid-Atlantic States,1993–2002" (March,2003, in press) available online at http://sd.water.usgs.gove/public—naw/pubs/journal/GW.MTBE.moran.pdf.

[4]Ibid.

unique opportunity to legislate constructive changes to RFG and conventional gasoline. This legislation has been introduced in the 108th Congress by Senators Daschle and Hagel as S. 385, The Fuels Security Act of 2003.

American Lung Association Opposes A Liability "Safe Harbor" for MTBE

Providing a defective product liability shield to MTBE, as provided in the House offer last year is truly unsupportable. As explained in detail in Mr. Olson's testimony, refiners and MTBE producers had extensive knowledge of MTBE's hazards as a contaminant in groundwater. For instance in 1983, in response to an API survey, a Shell expert stated, "In our situation the MTBE was detectable (by drinking) in 7 to 15 part per billion so even if it were not a factor to health, it still had to be removed to below detectable amount in order to use the water." They also knew that underground storage tanks of gasoline were leaking across the Nation. By 1982, an Exxon annual testing program for underground gasoline storage tanks found that 38 percent were leaking. In 1981, Shell and ARCO estimated 20 percent of all U.S. underground storage tanks were leaking. Yet the neither the refiners nor the MTBE industry informed Congress of the dangers of adopting a clean fuels program that they were advocating and that they knew would vastly increase MTBE use. Indeed, the industry used MTBE extensively before the RFG program was enacted in 1990. While they now call for liability protection because Congress made them use MTBE by enacting the Clean Air Act Amendments of 1990. However, in 1991, the year before fuel requirements went into effect refiners were putting approximately 4.2 million gallons a day of MTBE into gasoline. This represents a level of usage that is only half the 9.8 million gallons used in 1998 when the RFG and oxyfuel programs were in full force.

Given the complicity of the industry in the creation of the MTBE contamination problem, we see absolutely no justification for the removal a legal tool that should be available to MTBE contamination victims to help address the cleanup of widespread MTBE contamination. The predicament described by Mr. Granger illustrates well that every tool must be available to address MTBE cleanup. In addition, we see no impending tidal wave of adverse court decisions that compels Congress to provide the industry special legal protections. We also note that the language adopted in the House offer, protects the industry from defective product liability regardless of whether a MTBE leak may have occurred prior to enactment of the 1990 amendments and regardless of whether the leak came from RFG or conventional gasoline which would contain MTBE only because a refiners voluntarily chose to add it.

One frustrating aspect of this debate is that, essentially, history may be repeating itself. Refiners chose to use MTBE in gasoline in part to replace tetra-ethyl lead. You may recall that as a result of the lead refiners placed in gasoline and paint manufacturers placed in paint, 88 percent of children aged one to five had blood lead levels above the threshold believed to have the potential to impair cognitive development in the late 1970's. It took 10 years to get lead out of gasoline. Ironically, Congress banned the use of lead in gasoline in the 1990 Clean Air Act Amendments. Hopefully Congress can get rid of MTBE in gasoline more quickly than lead. Yet in testimony before the House Subcommittee on Energy and Air Quality, the Oxygenated Fuels Association called for regulatory and tax changes to facilitate greater use of ETBE because it has "less affinity for water than MTBE" and can address volatility and pipeline issues associated with ethanol use. What the OFA did not tell the committee is that while ETBE in gasoline is approximately 60 percent less soluble in water than MTBE, it is still 30 times more soluble than benzene, is resistant to degradation, and most importantly has a an odor detectability in drinking water at one fourth the concentration of MTBE. (See Attachment B) We would hope after all this history that Congress would not allow itself to be hoodwinked once again by the oxygenated fuels industry by accepting OFA's recommendation. Indeed, any sensible fuels policy would affirmatively prevent the use of ETBE in gasoline.

The American Lung Association Opposes a Liability "Safe Harbor" for Renewable Fuels

The Congress must not adopt the "safe harbor" provisions that were adopted in the Senate compromise that reduce the incentives to avoid renewable fuel additives to gasoline that replicate in any way the problems of lead or MTBE. Unfortunately, Section 819(e) of the Senate compromise bill (Section 101(e) of S. 385) provides that no renewable fuel can be deemed to be defective in design or manufacture "by virtue of the fact that it is, or contains such a renewable fuel". The liability shield in this provision reduces the incentive renewable fuel producers and purveyors have to be vigilant and provide a safe renewable fuel product. Therefore, the provision in-

creases the likelihood of another MTBE situation developing rather than decreasing it.

Since the oil refining industry is insisting on the "safe harbor" a question is clearly raised. What do they know about the dangers of renewable fuels that we do not? Are there dangers that they know about, as they did with MTBE in the 1980's that they are not telling Congress as it contemplates mandating the use of renewable fuels? Why does the ethanol industry support the "safe harbor" for renewable fuels? Are there adverse consequences from ethanol use that they know about that prompt their support for the "safe harbor"?

Without the Senate Compromise bill, Massive Amounts of Ethanol Must be Used in California and the Northeast

The Senate compromise bill represents a significant compromise that the American Lung Association believes provides the best basis for achieving modifications to RFG that meets the needs of the oil industry, the ethanol industry, State air regulators, and air quality. With the removal of the safe harbor for renewable fuels, the Senate compromise should be able to be enacted and avoid an impending "train wreck" if existing State bans of MTBE go into effect beginning with Connecticut in October of this year.

In a world where 14 to 19 States individually ban MTBE but oxygen requirement is maintained in Federal RFG, large amounts of ethanol will be needed. The difference between this scenario and implementing the Senate compromise is that the ethanol demand is inflexibly centered on California and the Northeast where ethanol is not currently produced or used in any significant volumes. According to the API, if MTBE bans in California and the Northeast take effect with no change to Federal RFG requirements, California would need 843 million gallons of ethanol and the Northeast would need 713 million gallons.(See Tab 2 and 3) We believe the cost and price spike impact of such a scenario would be much more significant than under the Senate compromise. This is because ethanol must be transported and stored separately from the base gasoline it is mixed with until it reaches consumer distribution.

Under the Senate compromise, the RFS credit and banking provisions allow some refiners to use ethanol in the most economically efficient manner, most likely where it is already made and used. These refiners can sell RFS credits to those who cannot use ethanol economically. We expect that octane for RFG used in the Northeast and California will be met substantially by the use of iso-octane and alkylates. Refiners supplying these regions would then be obligated to purchase RFS credits from refiners using ethanol in mid-west markets where it has been traditionally sold. Such an approach is far more practical than the "forced" ethanol use under the status quo scenario.

Congress Must Adopt Needed Fuel Changes As Soon As Possible

The Congress has been deadlocked over legislation to eliminate MTBE and improve Federal requirements for RFG and conventional gasoline for years. With the exception of the liability safe harbor, the provisions in the Senate compromise bill adopted last year represent a compromise that addresses widely varying concerns in a reasonable fashion. We urge you to grasp this opportunity, remove the safe harbor provisions from S. 385 and support this compromise.

Study of Boutique Fuels & Issues Relating to Transition from Winter to Summer Gasoline, Office of Transportation and air Quality, U.S. Environmental Protection Agency, October 24, 2001, p. 10.

Attachment A

Estimated population served by MTBE contaminated drinking water	
State	**Population exposed to MTBE in drinking water**
California	Millions
Connecticut	1,017,000
Deleware	230,000
Maine	52,000
Maryland	84,000
Massachuetts	1,352,000
New Hampshire	133,000
New Jersey	5,717,000
New York	5,868,000
Pennsylvania	3,568,000
Rhode Island	500,000
Vermont	12,000
Virginia/District of Columbia	21,000
Total	18,554,000

Source: USGS & DOI, Stephen J. Grady and George D. Casey (2001); California Department of Health Services, Drinking Water Program; and U.S. EPA data.

Attachment B

Table E1. Chemical Properties of Selected Compounds[a]

	Benzene[2]	MTBE[2]	Ethanol[3]	ETBE[1]	TAME[1]	TBA[3]	Alkylates (Isooctane)
Molecular Weight (g/mol)	78.11	88.2	46.1	102.2	102.2	74.1	114.2
Boiling Point (°C)	80.1	55.2	78.5	72.2	86.3	82.4	99.2
Vapor Pressure (mm Hg at 20 °C)	73	240	44	130	75	41	72
Density (g/L)	0.88	0.74	0.79	0.74	0.77	0.79	0.69
Octane Number	94	110	115	112	105	100	100
Neat Solubility (g/100g H_2O)	0.178	4.8	miscible	1.2	1.2	miscible	<< 0.01
Solubility into H_2O from Gasoline (g/100g H_2O)	<.01	0.55	5.7[b]	0.33	0.24	2.5[b]	–
Taste Threshold in Water (ug/L)	500	20 to 40	–	47	128	–	–
Odor Threshold (ppm)	0.5	0.053	49	0.013	0.027	21	–

[a] Adapted from USGS. For a detailed discussion of the solubility in water from gasoline mixture containing 2% oxygen, see p. 2-50 - 2-53 of the National Science and Technology Council. *Interagency Assessment of Oxygenated Fuels* (June 1997).

[b] The water solubilities of the alcohols are estimates based on partitioning properties.

Sources:

[1] D.L. Conrad, Texaco Research and Development Department, *The Impacts of Gasoline Oxygenate Releases to the Environment – A Review of the Literature* (Port Arthur, Texas, 1995).

[2] Donald Mackay, W.Y. Shiu, and K.C. Ma, *Illustrated Handbook of Physical-Chemical Properties and Environmental Fate for Organic Chemicals: Vol. III, Volatile Organic Compounds* (Boca Raton, FL: Lewis Publishers, Inc, 1993) p. 916.

[3] Donald Mackay, W.Y. Shiu, and K.C. Ma, *Illustrated Handbook of Physical-Chemical Properties and Environmental Fate for Organic Chemicals: Vol. III, Volatile Organic Compounds* (Boca Raton, FL: Lewis Publishers, Inc, 1993) p. 952.

Key:

" – " signifies "Not Applicable."
g/mol = Grams Per Mole
°C = Degrees Celsius
mm Hg = Millimeters of Mercury
g/L = Grams Per Liter
g/100g H_2O - Grams Per 100 Grams of Water
ug/L = Micrograms Per Liter
ppm = Parts Per Million

TAB 2

California Will Not Experience Market and Supply Volatility Under the Renewable Fuels Standard of S. 517

- There is no need to delay implementation of the renewable fuels program of S. 517 or adjust the required level of renewable fuels use.1

- Current annual ethanol use in California is approximately 100 million gallons (CEC/Stillwater).

- A recent study for the California Energy Commission concluded that, in the absence of federal legislation, a state ban on MTBE (effective 12/31/02) coupled with the existing federal reformulated gasoline (RFG) oxygen content requirement, California ethanol use would increase to 843 million gallons in 2004.

- Under S. 517, the amount of ethanol likely to be used in California is far less than would be used without the bill. With an MTBE ban, repeal of the federal RFG oxygen content requirement and a national renewable fuels standard (RFS), refiners and importers would need to use or purchase credits for 252 million gallons of ethanol in 2004, which would be California's pro rata share under the RFS2.

- The Renewable Fuels Association reports that there will be at least 2.7 billion gallons of ethanol capacity available nationwide by 2004. In contrast, the RFS only requires the use of 2.3 billion gallons. Taking into account the use of ethanol in all States under the RFS, including California's projected use of 252 million gallons, there would still be 400 million excess gallons of ethanol available in 2004.

- **These facts indicate that there would be sufficient supplies of ethanol for CA under the RFS and that there is no need to delay its implementation beyond the 2004 start date or reduce the volume of renewable fuels required. In fact, CA refiners are likely to voluntarily use more ethanol than required under the RFS.**

- Despite all these indications that there will be sufficient supplies of ethanol to meet CA's needs, S. 517 includes additional safeguards:
    - Prior to 2004, DOE is to conduct a study to determine if the RFS is likely to result in significant adverse consumer impacts in 2004. If this is determined to be the case, then EPA shall reduce the volume of the renewable fuels mandate for 2004.
    - Also, upon petition of a State or by EPA's own determination, and in consultation with DOE and USDA, EPA may waive the RFS, in whole or in part, if it determines the RFS would severely harm the economy or environment of a State, a region, or the United States or there is an inadequate domestic supply or distribution capacity to meet the requirement.

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1 The recent GAO and California Energy Commission/Stillwater reports predicted price volatility and supply shortfalls in California (CA), but these reports do not reflect the provisions in S. 517 which would repeal the federal reformulated gasoline oxygen content requirement.

2 This figure is derived by multiplying the projected 2004 CA gasoline consumption, from the CEC/Stillwater report, of 1026 thousand barrels per day, or 15.7 billion gallons per year, by the RFS standard expressed as a fraction of projected U.S. gasoline demand, or .016 (1.6%).

TAB 3

Fuels Agreement vs. Status Quo
Where's the Better Deal for the Northeast?

The fuel provisions in S. 517 will allow for a uniform phase-down of MTBE, remove the oxygen content requirement for RFG and put in place a nationwide renewable fuels standard (RFS) that will phase-in gradually over a number of years. These provisions provide for a more orderly and cost-effective solution to the MTBE issue than state-by-state action. Because individual states are banning or are considering banning the use of MTBE, the existing federal oxygenate requirement for RFG will increase the cost of complying with these bans and lead to an inefficient pattern of fuel-type by state. The provisions in S. 517, which phase-down MTBE use and eliminate the federal RFG oxygenate requirement, provide a more balanced and efficient result. DOE/EIA and other data indicate that under S. 517 there will be sufficient supplies of ethanol available for all States, including NY. Calls for implementation delays beyond 2004, or a reduction in required renewable fuels volumes, are not supported by the data.

- With a January 2004 MTBE ban on the books in NY and a continuation of the federal RFG oxygen requirement (status quo), 184 million gallons of ethanol will be required in that year according to DOE/EIA data1.

- Under S. 517 in 2004, the amount of ethanol likely to be used in New York would be far less than what would be required under the status quo. Refiners and importers would be required to use or purchase credits for 92 million gallons of ethanol in 2004, which is NY's pro rata share under the RFS2. Actual use may be less due to the banking and trading provisions in the bill.

- The Renewable Fuels Association projects that at least 2.7 billion gallons of ethanol capacity will be available nationwide by 2004. In contrast, the RFS requires 2.3 billion gallons by 2004. This implies that there would be 400 million gallons of excess capacity available in 2004 (taking into account ethanol use in all States under the RFS, including New York's projected use of 92 million gallons).

- Despite all indications of sufficient ethanol supplies to meet NY's needs, S. 517 includes additional safeguards:
    - Prior to 2004, DOE is to conduct a study to determine if the RFS is likely to result in significant adverse consumer impacts in 2004. If this is determined to be the case, then EPA shall reduce the volume of the renewable fuels mandate for 2004.
    - Also, upon petition of a State or by EPA's own determination, and in consultation with DOE and USDA, EPA may waive the RFS, in whole or in part, if it determines the RFS would severely harm the economy or environment of a State, a region, or the United States or if there is an inadequate domestic supply or distribution capacity to meet the requirement.

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1 This assumes all reformulated gasoline supplied in New York State would contain 5.7 volume % ethanol and is based on EIA *Petroleum Marketing Annual 2000* sales volumes.
2 This figure is derived by multiplying the projected 2004 NY gasoline consumption, based on EIA *Petroleum Marketing Annual 2000* sales volumes, by the RFS standard expressed as a fraction of projected U.S. gasoline demand, or .016 (1.6%).

- Should other Northeast States follow the lead of NY and CT in banning MTBE, their required ethanol use would be substantially larger if S. 517 is not enacted.

Projected 2004 Ethanol Use in the Northeast (million gallons)

	Ethanol volume under RFS	Ethanol volume under Federal RFG oxygen content requirement and MTBE ban1
Connecticut	24	84
Maine	12	0
Massachusetts	43	153
New Hampshire	10	25
New Jersey	68	241
New York	92	184
Rhode Island	8	28
Vermont	5	0
Totals	261	713

Source: Based on data from EIA's *Petroleum Marketing Annual 2000*.

1 To date, Connecticut and New York have MTBE ban legislation on the books, the former to take effect on October 1, 2003, the latter on January 1, 2004. The 3rd column of the table assumes that all other Northeast States, in addition to CT and NY, ban MTBE.

Appendix A

The House Fuels Offer Eliminates the Senate Ban of MTBE in Gasoline.

Under the Senate bill, the use of MTBE is to be phased out in no more than four years. (See Attachment C, p. 22 and Attachment D, p.2) This language is absent from the House offer. Therefore, the only potential restrictions on MTBE use in RFG or conventional gasoline would be through the use of state enacted restriction. However, in many states these restrictions are being challenged by the MTBE industry and the courts may ultimately rule that states are preempted by the Clean Air Act Amendments of 1990 from restricting the use of MTBE.

The continued legal use of MTBE in RFG and conventional fuel creates a nightmare of uncertainty regarding the future safety of water supplies and compliance responsibilities for refiners who have limited ability to prevent contamination of non-MTBE containing fuel by supplies that legally contain MTBE. This uncertainty will continue to discourage the use of RFG in areas that are newly designated non-attainment for smog because of fears of MTBE contamination.

The House Fuels Offer Preempts State Prohibition of MTBE After Enactment

The House language leaves intact Senate language that preserved state restrictions on MTBE in effect prior to enactment of these provisions but preempted state mesure that go into effect subsequent to enactment. (See Attachment C, p. 25 and Attachment D, p. 4) The refiners sought this provision to provide a rational, nationwide phase out of MTBE in

fuel in lieu of multiple different state bans. Since the House offer does not ban MTBE, but does address its use, subsequent state bans would be preempted.

The House Fuels Offer Eliminates EPA Authority to Regulate Fuel Additives to Prevent Water Contamination.

EPA does not appear to have the authority under the existing law to regulated gasoline additives because of their adverse impact on water. The EPA has been exploring whether it has such authority under the Toxic Substances Control Act since 2000. To my knowledge, EPA is still exploring. This lack of authority is at the heart of the current controversy over MTBE use in fuel. Having removed the ban on MTBE, one might expect that a minimum response to the current MTBE crisis in the House offer might be to give EPA the authority to regulate MTBE in order to prevent water contamination. The House offer contains no such language. The House language simply strikes subsection 833(c) of the Senate compromise which contained carefully crafted language endorsed by the API authorizing EPA regulate fuel additives based on their capacity to threaten health or the environment via water pollution.(See Attachment C, p. 22 and Attachment D, p. 2)

The House Offer Shields Refiners From Defective Product Liability Lawsuits on MTBE Brought After Enactment.

The House language requires equivalent treatment for MTBE as is provided in the "safe harbor" in the Senate bill for renewable fuels. (See Attachment C, pp. 18-19, p. 24 and Attachment E, pp.6-7) This language would bar any future lawsuits brought under federal or state law on the basis of a MTBE being a defective product and refiners failing to warn consumers of its water contamination hazards. This prohibition would apply regardless of whether the contamination occurred prior to the enactment of the RFG provision in the Clean Air Act Amendments of 1990. The prohibition also applies regardless of whether the contamination

occurred from the presence of MTBE in conventional gasoline that is not subject to an oxygen requirement and contains MTBE solely because a refiner chose to add it to the fuel.

Attachment C

Subtitle A—Motor Fuels

SEC. ___01. SHORT TITLE.

This subtitle may be cited as the "Federal Reformulated Fuels Act of 2002".

SEC. ___02. RENEWABLE CONTENT OF MOTOR VEHICLE FUEL.

(a) IN GENERAL.—Section 211 of the Clean Air Act (42 U.S.C. 7545) is amended—

(1) by redesignating subsection (o) as subsection (q); and

(2) by inserting after subsection (n) the following:

"(o) RENEWABLE FUEL PROGRAM.—

"(1) DEFINITIONS.—In this section:

"(A) CELLULOSIC BIOMASS ETHANOL.—The term 'cellulosic biomass ethanol' means ethanol derived from any lignocellulosic or hemicellulosic matter that is available on a renewable or recurring basis, including—

"(i) dedicated energy crops and trees;

"(ii) wood and wood residues;

"(iii) plants;

"(iv) grasses;

"(v) agricultural residues;

"(vi) fibers;

1 fective in design or manufacture by virtue of the fact
2 that it is, or contains, such a renewable fuel, if it
3 does not violate a control or prohibition imposed by
4 the Administrator under section 211 of the Clean
5 Air Act, as amended by this Act, and the manufac-
6 turer is in compliance with all requests for informa-
7 tion under section 211(b) of the Clean Air Act, as
8 amended by this Act. In the event that the safe har-
9 bor under this section does not apply, the existence
10 of a design defect or manufacturing defect shall be
11 determined under otherwise applicable law.
12 (2) EFFECTIVE DATE.—This subsection shall be
13 effective as of the date of enactment and shall apply
14 with respect to all claims filed on or after that date.
15 **SEC. ___03. MTBE TRANSITION ASSISTANCE.**
16 (a) FINDINGS.—Congress finds that—
17 (1) since 1979, methyl tertiary butyl ether (re-
18 ferred to in this section as "MTBE") has been used
19 nationwide at low levels in gasoline to replace lead
20 as an octane booster or anti-knocking agent;
21 (2) Public Law 101–549 (commonly known as
22 the "Clean Air Act Amendments of 1990") (42
23 U.S.C. 7401 et seq.) established a fuel oxygenate
24 standard under which reformulated gasoline must
25 contain at least 2 percent oxygen by weight;

1 (3) at the time of the adoption of the fuel oxy-
2 gen standard, Congress was aware that significant
3 use of MTBE could result from the adoption of that
4 standard, and that the use of MTBE would likely be
5 important to the cost-effective implementation of
6 that program;
7 (4) Congress is aware that gasoline and its
8 component additives have leaked from storage tanks,
9 with consequences for water quality;
10 (5) the fuel industry responded to the fuel oxy-
11 genate standard established by Public Law 101–549
12 by making substantial investments in—
13 (A) MTBE production capacity; and
14 (B) systems to deliver MTBE-containing
15 gasoline to the marketplace;
16 (6) when leaked or spilled into the environment,
17 MTBE may cause serious problems of drinking
18 water quality;
19 (7) in recent years, MTBE has been detected in
20 water sources throughout the United States;
21 (8) MTBE can be detected by smell and taste
22 at low concentrations;
23 (9) while small quantities of MTBE can render
24 water supplies unpalatable, the precise human health

1 effects of MTBE consumption at low levels are yet
2 unknown;
3 (10) Congress has—
4 (A) reconsidered the relative value of
5 MTBE in gasoline; and
6 (B) provided for a renewable content re-
7 quirement for motor fuel;
8 (11) the timeline for any reduction in the use
9 of MTBE as a fuel additive should be achieved in
10 a manner that achieves an appropriate balance
11 among the goals of—
12 (A) environmental protection;
13 (B) adequate energy supply; and
14 (C) reasonable fuel prices; and
15 (12) it is appropriate for Congress to provide
16 some limited transition assistance—
17 (A) to merchant producers of MTBE who
18 produced MTBE in response to a market cre-
19 ated by the oxygenate requirement contained in
20 the Clean Air Act; and
21 (B) for the purpose of mitigating any fuel
22 supply problems that may result from any re-
23 duction in the use of a widely-used fuel addi-
24 tive.

1 (b) PURPOSES.—The purpose of this section is to
2 provide assistance to merchant producers of MTBE in
3 making the transition from producing MTBE to producing
4 other fuel additives.
5 (c) MTBE TRANSITION ASSISTANCE.—Section
6 211(c) of the Clean Air Act (42 U.S.C. 7545(c)) is amend-
7 ed by adding at the end the following:
8 "(5) MTBE MERCHANT PRODUCER CONVER-
9 SION ASSISTANCE.—
10 "(A) IN GENERAL.—
11 "(i) GRANTS.—The Secretary of En-
12 ergy, in consultation with the Adminis-
13 trator, may make grants to merchant pro-
14 ducers of methyl tertiary butyl ether in the
15 United States to assist the producers in
16 the conversion of eligible production facili-
17 ties described in subparagraph (C) to the
18 production of iso-octane and alkylates.
19 "(ii) DETERMINATION.—The Admin-
20 istrator, in consultation with the Secretary
21 of Energy, may determine that transition
22 assistance for the production of iso-octane
23 and alkylates is inconsistent with the pro-
24 visions of subparagraph (B) and, on that

1 basis, may deny applications for grants au-
2 thorized by this provision.
3 "(B) FURTHER GRANTS.—The Secretary
4 of Energy, in consultation with the Adminis-
5 trator, may also further make grants to mer-
6 chant producers of MTBE in the United States
7 to assist the producers in the conversion of eli-
8 gible production facilities described in subpara-
9 graph (C) to the production of such other fuel
10 additives that, consistent with this subsection—
11 "(i) unless the Administrator deter-
12 mines that such fuel additives may reason-
13 ably be anticipated to endanger public
14 health or the environment;
15 "(ii) have been registered and have
16 been tested or are being tested in accord-
17 ance with the requirements of this section;
18 and
19 "(iii) will contribute to replacing gaso-
20 line volumes lost as a result of the applica-
21 tion of the amendments made by subtitle A
22 of title ____ of the [SAFE Act of 2002].
23 "(C) ELIGIBLE PRODUCTION FACILI-
24 TIES.—A production facility shall be eligible to

1 receive a grant under this paragraph if the pro-
2 duction facility—
3 "(i) is located in the United States;
4 and
5 "(ii) produced methyl tertiary butyl
6 ether for consumption in nonattainment
7 areas at any time during the period—
8 "(I) beginning on the date of en-
9 actment of this paragraph; and
10 "(II) ending at any time before
11 on the effective date of the prohibition
12 on the use of methyl tertiary butyl
13 ether under paragraph (5)
14 "(D) EQUIVALENT LEGAL TREATMENT.—
15 Notwithstanding any other provision of Federal
16 or State law, MTBE shall receive equivalent
17 legal treatment as that accorded to 'renewable
18 fuel' in section ____02(e) of [the SAFE Act of
19 2002].
20 "(E) AUTHORIZATION OF APPROPRIA-
21 TIONS.—There is authorized to be appropriated
22 to carry out this paragraph $250,000,000 for
23 each of fiscal years 2003 through 2005, to re-
24 main available until expended.".

1 (d) NO EFFECT ON LAW CONCERNING STATE AU-
2 THORITY.—The amendment made by subsection (c) have
3 no effect on the law in effect on the day before the date
4 of enactment of this Act regarding the authority of States
5 to limit the use of methyl tertiary butyl ether in motor
6 vehicle fuel.

7 **SEC. ___04. ELIMINATION OF OXYGEN CONTENT REQUIRE-**
8 **MENT FOR REFORMULATED GASOLINE.**

9 (a) ELIMINATION.—
10 (1) IN GENERAL.—Section 211(k) of the Clean
11 Air Act (42 U.S.C. 7545(k)) is amended—
12 (A) in paragraph (2)—
13 (i) in the second sentence of subpara-
14 graph (A), by striking "(including the oxy-
15 gen content requirement contained in sub-
16 paragraph (B))";
17 (ii) by striking subparagraph (B); and
18 (iii) by redesignating subparagraphs
19 (C) and (D) as subparagraphs (B) and
20 (C), respectively;
21 (B) in paragraph (3)(A), by striking clause
22 (v);
23 (C) in paragraph (7)—
24 (i) in subparagraph (A)—
25 (I) by striking clause (i); and

Attachment D

H.R.4

Energy Policy Act of 2002 (Engrossed Amendment as Agreed to by Senate)

SEC. 833. AUTHORITY FOR WATER QUALITY PROTECTION FROM FUELS.

(a) FINDINGS- Congress finds that--

(1) since 1979, methyl tertiary butyl ether (referred to in this section as `MTBE') has been used nationwide at low levels in gasoline to replace lead as an octane booster or anti-knocking agent;

(2) Public Law 101-549 (commonly known as the `Clean Air Act Amendments of 1990') (42 U.S.C. 7401 et seq.) established a fuel oxygenate standard under which reformulated gasoline must contain at least 2 percent oxygen by weight;

(3) at the time of the adoption of the fuel oxygen standard, Congress was aware that significant use of MTBE could result from the adoption of that standard, and that the use of MTBE would likely be important to the cost-effective implementation of that program;

(4) Congress is aware that gasoline and its component additives have leaked from storage tanks, with consequences for water quality;

(5) the fuel industry responded to the fuel oxygenate standard established by Public Law 101-549 by making substantial investments in--

(A) MTBE production capacity; and

(B) systems to deliver MTBE-containing gasoline to the marketplace;

(6) when leaked or spilled into the environment, MTBE may cause serious problems of drinking water quality;

(7) in recent years, MTBE has been detected in water sources throughout the United States;

(8) MTBE can be detected by smell and taste at low concentrations;

(9) while small quantities of MTBE can render water supplies unpalatable, the precise human health effects of MTBE consumption at low levels are yet unknown;

(10) in the report entitled `Achieving Clean Air and Clean Water: The Report of the Blue Ribbon Panel on Oxygenates in Gasoline' and dated September 1999, Congress was urged--

(A) to eliminate the fuel oxygenate standard;

(B) to greatly reduce use of MTBE; and

(C) to maintain the environmental performance of reformulated gasoline;

(11) Congress has--

(A) reconsidered the relative value of MTBE in gasoline; and

(B) decided to eliminate use of MTBE as a fuel additive;

(12) the timeline for elimination of use of MTBE as a fuel additive must be established in a manner that achieves an appropriate balance among the goals of--

(A) environmental protection;

(B) adequate energy supply; and

(C) reasonable fuel prices; and

(13) it is appropriate for Congress to provide some limited transition assistance--

(A) to merchant producers of MTBE who produced MTBE in response to a market created by the oxygenate requirement contained in the Clean Air Act; and

(B) for the purpose of mitigating any fuel supply problems that may result from elimination of a widely-used fuel additive.

(b) PURPOSES- The purposes of this section are--

(1) to eliminate use of MTBE as a fuel oxygenate; and

(2) to provide assistance to merchant producers of MTBE in making the transition from producing MTBE to producing other fuel additives.

(c) AUTHORITY FOR WATER QUALITY PROTECTION FROM FUELS- Section 211(c) of the Clean Air Act (42 U.S.C. 7545(c)) is amended--

(1) in paragraph (1)(A)--

(A) by inserting `fuel or fuel additive or' after `Administrator any'; and

(B) by striking `air pollution which' and inserting `air pollution, or water pollution, that';

(2) in paragraph (4)(B), by inserting `or water quality protection,' after `emission control,'; and

(3) by adding at the end the following:

`(5) Prohibition on use of mtbe-

`(A) IN GENERAL- Subject to subparagraph (E), not later than 4 years after the date of enactment of this paragraph, the use of methyl tertiary butyl ether in motor vehicle fuel in any State other than a State described in subparagraph (C) is prohibited.

`(B) REGULATIONS- The Administrator shall promulgate regulations to effect the prohibition in subparagraph (A).

`(C) STATES THAT AUTHORIZE USE- A State described in this subparagraph is a State that submits to the Administrator a notice that the State authorizes use of methyl tertiary butyl ether in motor vehicle fuel sold or used in the State.

`(D) PUBLICATION OF NOTICE- The Administrator shall publish in the Federal Register each notice submitted by a State under subparagraph (C).

`(E) TRACE QUANTITIES- In carrying out subparagraph (A), the Administrator may allow trace quantities of methyl tertiary butyl ether, not to exceed 0.5 percent by volume, to be present in motor vehicle fuel in cases that the Administrator determines to be appropriate.

`(6) MTBE MERCHANT PRODUCER CONVERSION ASSISTANCE-

`(A) IN GENERAL-

`(i) GRANTS- The Secretary of Energy, in consultation with the Administrator, may make grants to merchant producers of methyl tertiary butyl ether in the United States to assist the producers in the conversion of eligible production facilities described in subparagraph (C) to the production of iso-octane and alkylates.

`(ii) Determination- The Administrator, in consultation with the Secretary of Energy, may determine that transition assistance for the production of iso-octane and alkylates is inconsistent with the provisions of subparagraph (B) and, on that basis, may deny applications for grants authorized by this provision.

`(B) FURTHER GRANTS- The Secretary of Energy, in consultation with the Administrator, may also further make grants to merchant producers of MTBE in the United States to assist the producers in the conversion of eligible production facilities described in subparagraph (C) to the production of such other fuel additives that, consistent with 211(c)--

`(i) unless the Administrator determines that such fuel additives may reasonably be anticipated to endanger public health or the environment;

`(ii) have been registered and have been tested or are being tested in accordance with the requirements of this section; and

`(iii) will contribute to replacing gasoline volumes lost as a result of paragraph (5).

`(C) Eligible production facilities- A production facility shall be eligible to receive a grant under this paragraph if the production facility--

`(i) is located in the United States; and

`(ii) produced methyl tertiary butyl ether for consumption in nonattainment areas during the period--

`(I) beginning on the date of enactment of this paragraph; and

`(II) ending on the effective date of the prohibition on the use of methyl

tertiary butyl ether under paragraph (5).

`(D) Authorization of appropriations- There is authorized to be appropriated to carry out this paragraph $250,000,000 for each of fiscal years 2003 through 2005.'.

(d) No Effect on Law Concerning State Authority- The amendments made by subsection (c) have no effect on the law in effect on the day before the date of enactment of this Act regarding the authority of States to limit the use of methyl tertiary butyl ether in motor vehicle fuel.

SEC. 834. ELIMINATION OF OXYGEN CONTENT REQUIREMENT FOR REFORMULATED GASOLINE.

(a) Elimination-

(1) In general- Section 211(k) of the Clean Air Act (42 U.S.C. 7545(k)) is amended--

(A) in paragraph (2)--

(i) in the second sentence of subparagraph (A), by striking `(including the oxygen content requirement contained in subparagraph (B))';

(ii) by striking subparagraph (B); and

(iii) by redesignating subparagraphs (C) and (D) as subparagraphs (B) and (C), respectively;

(B) in paragraph (3)(A), by striking clause (v);

(C) in paragraph (7)--

(i) in subparagraph (A)--

(I) by striking clause (i); and

(II) by redesignating clauses (ii) and (iii) as clauses (i) and (ii), respectively; and

(ii) in subparagraph (C)--

(I) by striking clause (ii); and

(II) by redesignating clause (iii) as clause (ii); and

(2) Effective date- The amendments made by paragraph (1) take effect 270 days after the date of enactment of this Act, except that such amendments shall take effect upon enactment in any State that has received a waiver under section 209(b) of the Clean Air Act.

(b) Maintenance of Toxic Air Pollutant Emission Reductions- Section 211(k)(1) of the Clean Air Act (42 U.S.C. 7545(k)(1)) is amended--

(1) by striking `Within 1 year after the enactment of the Clean Air Act Amendments of 1990,' and inserting the following:

`(A) In general- Not later than November 15, 1991,'; and

Attachment E

Energy, that the promulgation of regulations described in subparagraph (A) would result in an insufficient supply of gasoline in the State, the Administrator, by regulation--

`(aa) shall extend the effective date of the regulations under clause (i) with respect to the area for not more than 1 year; and

`(bb) may renew the extension under item (aa) for two additional periods, each of which shall not exceed 1 year.

`(II) DEADLINE FOR ACTION ON PETITIONS- The Administrator shall act on any petition submitted under subclause (I) not later than 180 days after the date of receipt of the petition.'.

(d) SURVEY OF RENEWABLE FUEL MARKET-

(1) SURVEY AND REPORT- Not later than December 1, 2005, and annually thereafter, the Administrator shall--

(A) conduct, with respect to each conventional gasoline use area and each reformulated gasoline use area in each State, a survey to determine the market shares of--

(i) conventional gasoline containing ethanol;

(ii) reformulated gasoline containing ethanol;

(iii) conventional gasoline containing renewable fuel; and

(iv) reformulated gasoline containing renewable fuel; and

(B) submit to Congress, and make publicly available, a report on the results of the survey under subparagraph (A).

(2) RECORDKEEPING AND REPORTING REQUIREMENTS- The Administrator may require any refiner, blender, or importer to keep such records and make such reports as are necessary to ensure that the survey conducted under paragraph (1) is accurate. The Administrator shall rely, to the extent practicable, on existing reporting and recordkeeping requirements to avoid duplicative requirements.

(3) APPLICABLE LAW- Activities carried out under this subsection shall be conducted in a manner designed to protect confidentiality of individual responses.

(e) RENEWABLE FUELS SAFE HARBOR-

(1) IN GENERAL- Notwithstanding any other provision of federal or state law, no renewable fuel, as defined by this Act, used or intended to be used as a motor vehicle fuel, nor any motor vehicle fuel containing such renewable fuel, shall be deemed defective in design or manufacture by virtue of the fact that it is, or contains, such a renewable fuel, if it does not violate a control or prohibition imposed by the Administrator under section 211 of the Clean Air Act, as amended by this Act, and the manufacturer is in compliance with all requests for information under section 211(b) of the Clean Air Act, as amended by this Act. In the event that the safe harbor under this section does not apply, the existence of a design defect or manufacturing defect shall be determined under otherwise applicable law.

(2) EXCEPTIONS- This subsection shall not apply to ethers.

(3) EFFECTIVE DATE- This subsection shall be effective as of the date of enactment and shall apply with respect to all claims filed on or after that date.

SEC. 820A. FEDERAL AGENCY ETHANOL-BLENDED GASOLINE AND BIODIESEL PURCHASING REQUIREMENT.

Title III of the Energy Policy Act of 1992 is amended by striking section 306 (42 U.S.C. 13215) and inserting the following:

`SEC. 306. FEDERAL AGENCY ETHANOL-BLENDED GASOLINE AND BIODIESEL PURCHASING REQUIREMENT.

`(a) ETHANOL-BLENDED GASOLINE- The head of each Federal agency shall ensure that, in areas in which ethanol-blended gasoline is reasonably available at a generally competitive price, the Federal agency purchases ethanol-blended gasoline containing at least 10 percent ethanol rather than nonethanol-blended gasoline, for use in vehicles used by the agency that use gasoline.

`(b) BIODIESEL-

`(1) DEFINITION OF BIODIESEL- In this subsection, the term `biodiesel' has the meaning given the term in section 312(f).

`(2) REQUIREMENT- The head of each Federal agency shall ensure that the Federal agency purchases, for use in fueling fleet vehicles that use diesel fuel used by the Federal agency at the location at which fleet vehicles of the Federal agency are centrally fueled, in areas in which the biodiesel-blended diesel fuel described in paragraphs (A) and (B) is available at a generally competitive price--

`(A) as of the date that is 5 years after the date of enactment of this paragraph, biodiesel-blended diesel fuel that contains at least 2 percent biodiesel, rather than nonbiodiesel-blended diesel fuel; and

`(B) as of the date that is 10 years after the date of enactment of this paragraph, biodiesel-blended diesel fuel that contains at least 20 percent biodiesel, rather than nonbiodiesel-blended diesel fuel.

`(3) REQUIREMENT OF FEDERAL LAW- The provisions of this subsection shall not be considered a requirement of Federal law for the purposes of section 312.

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STATEMENT OF PAUL J. GRANGER, PE, WATER DISTRICT SUPERINTENDENT, PLAINVIEW WATER DISTRICT, NEW YORK

I would like to thank the Senate Committee on Environment and Public Works for providing an opportunity to the Plainview Water District to comment publicly on the use of the fuel additive methyl tertiary butyl ether (hereinafter, "MTBE") and the adverse impact on drinking water supplies.

My name is Paul Granger and I have 15 years of engineering and management experience in the water supply field. I am a licensed Professional Engineer, New York State Certified I-B water treatment plant operator and have a Bachelor of Science degree in Civil Engineering from Polytechnic University. Presently, I am the Superintendent of Engineering and Business Administration of the Plainview Water District. I also serve on the Board of Directors for the Long Island Water Conference and as Vice-chair of the New York State Water Utility Council. Prior to my employ-

ment with the Water District, I was a project manager with the Long Island consulting engineering firm, H2M Group, for 8 years. My experience with the firm included the design of water supply and treatment facilities and the preparation of water supply, management and treatment studies for many Long Island water purveyors.

The Plainview Water District is located in Nassau County, New York and encompasses all of Plainview and Old Bethpage as well as portions of Syosset and Woodbury. The district is one of the larger water systems on Long Island and strictly relies on groundwater as the sole source of drinking water in the community.

Potable water, meeting all local, State and Federal standards is furnished to 10,510 accounts within a 9 square mile area through 130.4 miles of water main servicing approximately 32,100 residents (population is estimated based on 2002 Long Island Power Authority Census data). The Water District maintains 11 supply wells at six sites providing a maximum design capacity of 22.44 million gallons per day (MGD). All of the supply wells are screened into the Magothy aquifer, which is the primary water supply source for more than three million residents of Long Island.

My comments today specifically address my first-hand experience and knowledge of the adverse impact of the fuel additive MTBE on our drinking water supply. MTBE was touted by the EPA as the panacea for providing clean air and has been in use since 1979 as a gasoline additive. It was originally intended to be used to help gasoline burn more efficiently and prevent engine knocking after lead was phased out of the fuel supply. More recently, with the promulgation of the 1990 Clean Air Act, MTBE has been widely used as an additive in reformulated gasoline for reducing carbon monoxide emissions from motor vehicles. All of the gasoline sold on Long Island since 1992 contains approximately 15 percent MTBE. On a national basis, the use of MTBE translates into absolutely staggering quantities. In 1999 alone, more than 200,000 barrels of MTBE were manufactured per day in the United States. As a result, MTBE is one of the highest volume chemicals produced in the country. MTBE can also be present in fuel oil or other petroleum products, perhaps due to cross production contamination.

The registration of MTBE with the Federal Government as an acceptable additive for reducing air pollution had initially perceived good intentions, but failed to assess the additive's environmental and public health consequences. Available toxicological data demonstrate that MTBE can cause cancers and non-cancerous health effects. The EPA in 1993 stated that "MTBE supports a hazard classification of possible human carcinogen . . . . based on limited animal research." Recent and "after the fact" research and experience has revealed that MTBE can and inevitably will poison our nation's water supply.

The widespread use of MTBE in reformulated gasoline and impact of the compound on water supply systems throughout the country has raised the serious concerns of the Plainview Water District and regional water purveyors. MTBE has much different characteristics when compared to typical petroleum based compounds and additives. When gasoline-containing MTBE is released into the ground through a leaking tank or spill, it tends to migrate downward due to the force of gravity. If the ground is not saturated with water, the gasoline/MTBE mixture initially spreads through the aerated soils as a liquid and then volatilizes into soil gas vapor. If the gasoline/MTBE mixture encounters saturated groundwater, the MTBE dissolves into the groundwater and migrates in the direction of prevailing flow. Once in the groundwater supply this compound does not biodegrade, has a propensity to sink in the aquifer system and is soluble in water. Furthermore, MTBE is difficult to remove from groundwater with the traditional methods of air stripping and granular activated carbon filtration. Therefore, treatment for MTBE removal would be far more expensive. Ultimately the cost for MTBE removal from the water supply is borne by the consumer.

MTBE primarily makes its way into the groundwater supply through fuel spills. Anywhere gasoline-containing MTBE is manufactured, stored, used, handled, transported or released in any way into the environment, the potential exists for MTBE pollution problems. The bigger the release, the bigger the potential for pollution problems. For example, a cup of gasoline/MTBE dumped on the ground will typically not migrate far before most of it evaporates into the air. Ten thousand gallons of gasoline/MTBE leaking from a tank could spread from hundreds of feet to more than one mile depending on soil and environmental conditions if the spill is not cleaned up.

Gaseous MTBE spreads outward from its point of origin and can penetrate nearby homes, buildings or structures through holes, cracks or other openings. Gaseous MTBE can follow "preferential pathways," such as porous soils or sewer, water, gas and electric conduits. Indoor air quality problems can result.

Groundwater is generated when rain, snow and other forms of precipitation fall on the ground and migrates downward into the underlying saturated zone of soil or rock. Groundwater contaminated with MTBE migrates freely through the environment and can cause indoor air quality problems by flooding into structures. It can also threaten drinking water.

MTBE-contaminated groundwater typically flows downward and eventually outward into surface waters. Drinking water drawn from MTBE-contaminated rivers, lakes or reservoirs can be polluted, though MTBE is often diluted in surface waters. More typically, wells screened into MTBE contaminated groundwater draw the pollution into their supply system. Wells generate an area of hydraulic influence. Small private wells drawing hundreds of gallons of water per day from the ground have a much smaller area of hydraulic influence than public water supply wells drawing millions of gallons of water per day. MTBE discharged near a well or migrating through its area of hydraulic influence is slowly, but surely, drawn into the well.

Once MTBE is introduced into the environment, it can be extremely difficult and expensive to investigate or remediate. First, the pollution is underground and tricky to locate. Delineating an MTBE plume often requires dozens of groundwater monitoring wells or extensive subsurface investigations. Second, removing MTBE from impacted soil, soil gas vapor or polluted groundwater can be technically challenging. Since the pollution may have migrated over a large area, vast quantities of contamination may have to be removed or treated.

Clean-up delays occur because regulatory standards for MTBE in groundwater and drinking water are not comprehensive. For example, New York adopted a groundwater remediation guideline of ten parts per billion in late 1999, but failed for 4 years to adopt a proposed Maximum Contaminant Level in drinking water.

Enforcement of applicable clean-up standards is also lax. It is not at all unusual for cleanup of major tank failures to be delayed for 10 years or longer. In many cases, it is all but impossible to remediate a large spill after that length of time. Given all of these shortcomings, it is no surprise that the Nation has inherited an MTBE groundwater pollution crisis that could prove unprecedented in our environmental history.

During November 2000, the MTBE threat to the Plainview Water District became a sudden and un-welcomed reality when a large gasoline spill containing a very high concentration of MTBE was found within 450 feet of a vital drinking water supply well facility. An MTBE level of 840 parts per billion (ppb) was detected in the groundwater beneath the spill site. This is more than 80 times the 10 ppb State groundwater clean-up guideline. The MTBE spill will eventually impact two local drinking water supply wells unless immediate and determined action is taken to remediate the spill and provide treatment at the supply wells. Exhibit A depicts the close proximity of the spill site with respect to the aforementioned water district supply facility. At this time the polluter, Exxon-Mobil, has not taken action to fully delineate the groundwater contamination and cleanup the impacted aquifer. It should be noted that Exxon-Mobil officially reported the MTBE spill to New York State Department of Environmental Conservation during 1997. What is unfortunate and disturbing is that the Plainview Water District discovered the spill on its own volition more than 3 years after the incident was reported. Both Exxon-Mobil and the State environmental agency failed to notify the water district of the significant and threatening spill. What is further disturbing is that more than 6 years has elapsed and the contamination continues to migrate unabated toward our vital water supply facility.

At this time the Plainview Water District is undertaking prompt proactive legal action against Mobil to ensure that the spill will be cleaned and MTBE does not pollute our supply wells. Furthermore, our legal action will rightfully shift the enormous financial burden of wellhead treatment onto the polluter (responsible party) rather than onto the ratepayer. The water district is looking to the future and does not want to wait for the aforementioned pollution problem to become a crisis. The Plainview Water District is the first water supplier in New York State to undertake such progressive and proactive action. No matter what the outcome of the legal action is, we will take every responsible measure to protect public health, while also protecting the financial interest of our residents. To illustrate this point, the water district has constructed an outpost early detection monitoring well system. This cluster of monitoring wells will provide the water district with advanced warning should the MTBE plume continue to move toward our supply wells at Plant 1.

Since the November 2000 MTBE spill discovery by the Water District, three other significant spills have been documented within our service area. These additional spills also threaten our supply wells and other facilities operated by neighboring water systems. It must be noted that all Plainview Water District supply wells are free from MTBE at this time and we are carefully monitoring them. Residents can

be assured that the water district is taking every proactive measure to protect public health.

As a result of vigilant monitoring by water utilities and regional health departments, the chemical is now being detected in many public and private water supply wells throughout the country. In some instances the chemical is being detected in only trace levels while in other cases, MTBE has been found in very high concentrations. On Long Island, MTBE has been detected primarily in trace levels in more than 130 supply wells. At this time, only a handful of public supply wells have been shut down on Long Island due to MTBE contamination. This does not mean that we should not be concerned. Based on present day pumpage conditions, it can take many years before the contaminant travels into the deep regions of the groundwater system and impacts our public water supply wells. It should be noted that hundreds of shallow private wells on Long Island have been contaminated with MTBE and have been taken out of service. To underscore my concern and the concerns of the water supply community, New York has identified some 1,970 MTBE spill sites with 430 of them on Long Island alone. Exhibit B provides a map of the MTBE spills documented in New York State that do not meet clean-up standards. While the map depicted in Exhibit C provides an illustration of the magnitude of the MTBE crisis in the downstate region. New York State is not alone in this crisis, since California itself has 10,000 MTBE-contaminated sites. At least 21 States have reported well closures due to MTBE groundwater contamination. During January 2000, the MTBE and water supply contamination crisis captured national attention when 60 Minutes broadcasted a rare double segment on the topic. The American Water Works Association estimates that water suppliers are already faced with a national cost exceeding $1 billion to prevent, cleanup, and treat MTBE-contaminated supplies. It is clearly evident that MTBE must be immediately banned before the problem worsens.

According to a 1998 study from the University of California at Davis it was concluded that " there is no significant additional air quality benefit to the use of oxygenates such as MTBE in reformulated gasoline." Furthermore, the 800 page study noted that while Federal law mandates the use of oxygenates in reformulated gasoline, MTBE addition has "no significant effect" on the emissions from modern vehicles while presenting "significant risks and costs associated with water contamination." The report authors recommended phasing out MTBE use, giving refiners flexibility to achieve air quality objectives by improving non-oxygenated reformulated gasoline and conducting a full environmental assessment of any MTBE alternative. A fact sheet summary of the aforementioned study is provided in Exhibit D. It should also be noted that the National Research Council concluded that there is no significant additional air quality benefit to the use of oxygenates such as MTBE in reformulated gasoline.

It is encouraging to see that the EPA Blue Ribbon Panel, commissioned to assess the use of MTBE, has recommended the elimination of the chemical from all gasoline. In addition, the panel recommended that the mandatory oxygen requirement for reformulated gasoline be eliminated. Vigilance must be maintained by our government representatives to ensure that the Blue Ribbon Panel recommendations are followed and the MTBE threat is eliminated. If any other additives mandates (such as the mandate for ethanol) are considered for the replacement of MTBE, let us hope that the government performs a "full" environmental and health assessment before it is implemented. However, based on the findings made in past studies, the present mandate for oxygenates, such as MTBE and ethanol, is inapplicable.

It is my understanding that a "safe harbor" provision is under serious consideration as Congress deliberates proposals for amending the Clean Air Act regarding fuel additives and renewable fuels. The proposed provision would unjustly shield the petroleum and ethanol industries from defective product liability under Federal and State law for the use of either MTBE or renewable fuels including ethanol. Such a provision would unfairly place the monumental clean-up and treatment costs on water suppliers and ultimately the customer. The evidence is clear that the contamination of water supplies across the Nation by MTBE will only worsen. Swift and determined action must be taken to eliminate the MTBE threat. Providing a "safe harbor" for the parties that created the problem shifts the enormous economic and public health burden ultimately onto the innocent parties, namely the water consumer. Furthermore, based on my experience as a water supplier on Long Island, the MTBE problem will only worsen since we are only seeing the "tip of the iceberg" at this time.

I respectfully request that our Federal legislators take careful note of the substantial MTBE drinking water contamination problems already experienced by and currently facing water suppliers throughout the country. In addition, it is very important to consider the scientific facts concerning the use of MTBE as it relates to pub-

lic health and the environment. It is extremely important that legislative proposals mandating other oxygenates (such as ethanol) be considered based on sound science. To re-emphasizes this concern, previous credible scientific studies concluded that there is no significant additional air quality benefit to the use of oxygenates in reformulated gasoline. Therefore, why run the risk of repeating the MTBE mistake all over again.

It is apparent that risks associated with the use of MTBE far out weigh benefits. Prompt action needs to be taken in order to eliminate the MTBE threat to our water supply once and for all. The Senate and government as a whole still has time to prevent MTBE from becoming a national drinking water catastrophe if prompt and proper action is undertaken at this time. In conclusion, I recommend that the following be strongly considered as the Senate deliberates proposals for amending the Clean Air Act regarding fuel additives and renewable fuel:

- Based on the present impact and expanding threat to water supplies nationally, MTBE must be swiftly phased out of all gasoline.
- The oxygenate mandate contained in the present Clean Air Act must be removed based on the conclusions and recommendations made by prominent studies and the EPA Blue Ribbon Panel.
- The legal rights of water suppliers and consumers must be upheld so that the vast clean-up burden is not placed on taxpayers. Providing a liability "safe harbor" eliminates a vital tool to protect the economic, environmental and public health interests of the water consumer.
- Comprehensive environmental and health assessments must be performed on other fuel additives before they go into use so that we do not repeat the same MTBE mistake.
- Establish and strictly enforce national groundwater and drinking water standards for MTBE.
- Implement and properly fund a national study to address the MTBE crisis. An emphasis should be placed on groundwater cleanup and the treatment of impacted drinking water supplies.
- Provide Federal funding for local water utilities to address the MTBE contamination crisis. Regional water suppliers have been or will be forced to remediate pollution hazards that they did not create.

Vigilance and care must be undertaken to ensure that our sources of drinking water are of high quality, ample quantity and of reasonable cost for the present population and future generations throughout the Nation. Let us rest assured that the public water suppliers will undertake the necessary measures to ensure that safe drinking water is supplied to the public. We need immediate help from the Federal Government to insure that our water supply remains safe and economically viable for public consumption.

Thank you for your time and providing me with the opportunity to address you today.

Gasoline/MTBE Spills Threatening
Plainview Water District Supply Well 1-2
Supply Well 1-2:
1.7 Million Gallons/Day Capacity
Mobil Service Station
1101 Old Country Road
Gasoline Spills #9706413, #0205659
MTBE Identified at 840 Parts Per Billion in MW-2 (12/21/00 and 1/30/01)
Well 1-2 is located approximately 450 ft to the northwest
Gulf Service Station
1098 Old Country Road
Gasoline Spill #0106828
Shell Gas Station
1099 Old Country Road
Gasoline Spill #0206757
N
W
E
S
100 0 100 200 Feet
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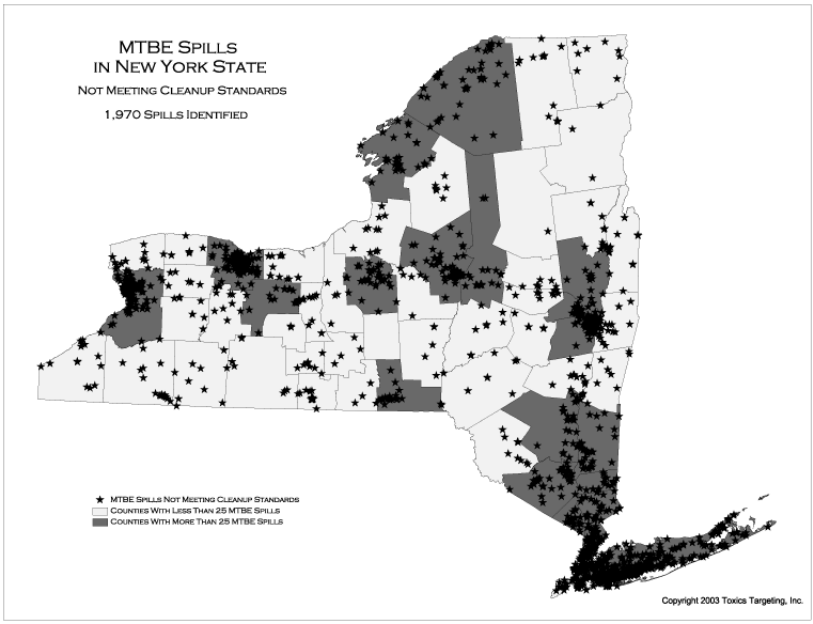
MTBE Spills
in New York State
Not Meeting Cleanup Standards
1,970 Spills Identified
MTBE Spills Not Meeting Cleanup Standards
Counties With Less Than 25 MTBE Spills
Counties With More Than 25 MTBE Spills
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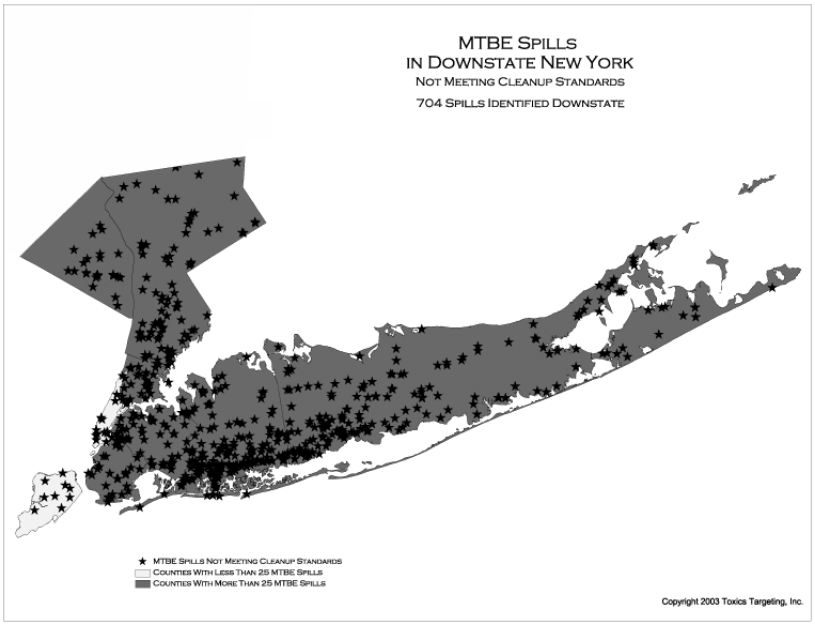
MTBE Spills
in Downstate New York
Not Meeting Cleanup Standards
704 Spills Identified Downstate
MTBE Spills Not Meeting Cleanup Standards
Counties With Less Than 25 MTBE Spills
Counties With More Than 25 MTBE Spills
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UC REPORT: MTBE FACT SHEET

November 12, 1998

Background

By federal law, gasoline refiners must add an oxygenate to California Phase II Reformulated Gasoline (CaRFG2) to reduce air pollution. MTBE (methyl tertiary-butyl ether), other ethers, and ethanol have been used for this purpose, but most refiners have chosen to use MTBE. In air basins that meet Federal National Ambient Air Quality Standards ("attainment areas"), non-oxygenated CaRFG2 may be sold.

In comparison to conventional gasoline, CaRFG2 shows significant improvement on several measures of air quality. Emissions of carbon monoxide, volatile organic compounds, and nitrogen oxides are reduced with CaRFG2. Vehicle emission control technology, especially improvements in newer cars, also significantly reduces emissions of air pollutants and their precursors.

Findings

- MTBE and other oxygenates were found to have no significant effect on exhaust emissions from advanced technology vehicles. There is no significant difference in the emissions reduction of benzene between oxygenated and non-oxygenated CaRFG2 that meets all other CaRFG2 standards. **Thus, there is no significant additional air quality benefit to the use of oxygenates such as MTBE in reformulated gasoline, relative to alternative CaRFG2 non-oxygenated formulations.**

- There are significant risks and costs associated with water contamination due to the use of MTBE. MTBE is highly soluble in water and will transfer readily to groundwater from gasoline leaking from underground storage tanks, pipelines and other components of the gasoline distribution system.

- In addition, the use of gasoline containing MTBE in motor boats, in particular those using older 2-stroke engines, results in the contamination of surface water reservoirs. We are placing our limited water resources at risk by using MTBE. If MTBE continues to be used at current levels and more sources become contaminated, the potential for regional degradation of water resources, especially groundwater basins, will increase. Severity of water shortages during drought years will be exacerbated. We believe that the use of either non-oxygenated reformulated gasoline or ethanol as an oxygenate in CaRFG2 would result in much lower risk to water supplies, lower water treatment costs in the event of a spill, and lower monitoring costs.

- Economic analysis of the benefits and costs associated with three gasoline formulations:
  1. CaRFG2 without added oxygenate
  2. CaRFG2 with ethanol
  3. **CaRFG2 with MTBE**

  indicates that non-oxygenated gasoline achieves air quality benefits at the least cost, followed by CaRFG2 with ethanol. CaRFG2 with MTBE has the highest net annual cost due primarily to the costs of treating contaminated water supplies, higher fuel prices, and lower fuel efficiency.

The summary and complete report will be made available on the Internet at
http://tsrtp.ucdavis.edu/mtberpt

RECOMMENDATIONS

Background

From a purely economic perspective, it would be best to transition to non-oxygenated CaRFG2. However, fuel oxygenate content is mandated by federal law, and this may not be a viable option. In addition, a lesson to be learned from the MTBE story is that addition of any chemical compound to the environment in quantities that constitute a significant fraction of the total content of gasoline may have unexpected environmental consequences. Therefore, we recommend a full environmental assessment of any alternative to MTBE in CaRFG2, including the components of CaRFG2 itself, before any changes are made in California State law.

Recommendations

Rather than any immediate ban on MTBE, we recommend consideration of phasing out MTBE over an interval of several years, and that refiners be given flexibility to achieve air quality objectives by modifying the caps in the CaRFG2 specifications to allow wide-scale production of non-oxygenated RFG. Using a Predictive Model as a guideline, refiners can find the most cost-effective formulation for each region and season, without assuming the liability and risks that MTBE poses to California's water supplies.

During the transition phase, a number of policies are suggested to reduce the cost of using MTBE while protecting water supplies.

1. Restrict the use of CaRFG2 with MTBE to ozone non-attainment areas during the summer months. It is recommended that the California Air Resources Board (CARB) review the length of the ozone summer season for those air basins in non-attainment to limit as much as possible the use of CaRFG2 with oxygenates.
2. Obtain a waiver of the federal requirement that reformulated gasoline sold in California have an oxygen content, via the passage of HR Bill 630 and Senate Bill 1576. This will allow the sale of non-oxygenated CaRFG2 in all areas.
3. Recommend that CARB facilitate promotion of the production and distribution of non-oxygenated CaRFG2 in all attainment areas, as well as during the non-summer season in non-attainment areas.
4. Promote the accelerated removal of older, high emitting motor vehicles through the use of industrial emissions offsets or a fund created by an appropriate tax. This program would be significantly more cost-effective than mandating the use of oxygenates in fuels in reducing air pollutant emissions. An aggressive program aimed at gross CO polluters would be a cheaper and less risky option than using oxygenates.
5. Maintain the Underground Storage Cleanup Fund Program, possibly beyond the year 2005 to cover the costs of MTBE cleanup, with a review in three years to determine the effectiveness of upgraded underground storage tank systems in reducing the rate of failures, and thus the potential to reduce the annual fees.
6. Where contamination of groundwater is known or suspected, evaluation of plume extent and potential threats to drinking-water supply wells should be carried out immediately. Plume containment, remediation, or other corrective actions should then proceed as soon as possible to reduce risk and costs.
7. Require the adoption of Best Management Practices for surface water reservoirs, following the lead of the Santa Clara Valley Water District.
8. Establish specific emissions requirements for motor boat engines, in particular with respect to emissions of unburned fuel. Promote legislation with incentives to phase out motor boat engines that do not meet emissions requirements.
9. Assess the environmental impacts of using other oxygenates such as ethanol. It must be stressed, however, that there are potential adverse health effects associated with incomplete combustion products of ethanol, and further study of combustion byproducts and potential health effects of such

products is required before substitution of ethanol for MTBE on a large scale can be recommended. If ethanol is found to provide a net energy savings and have minimal environmental impacts, then, increase the availability of ethanol as a potential oxygenate, by increasing the use of agricultural wastes such as rice straw for ethanol production. This also would reduce the emissions from burning the rice straw. The increase in this program could be funded through reductions in the cost of monitoring and enforcing the ban of rice straw burning.

10. The state should invest in a long-term research program, using the enormous base of expertise available in California's universities and professional organizations, to determine the toxicological effects of untested industrial products that will be used in large amounts. Such research should, for example, examine effective alternatives for motor vehicle fuels, and develop more cost-effective remediation and treatment technologies. The current structure of state agencies which focus on specific media (land, air, water), leads to fragmented and incomplete environmental impact assessments. Any new large scale programs in California should be preceded by an independent Environmental Impact Assessment, rather than an a posteriori evaluation of the consequences.

STATEMENT OF CRAIG PERKINS, DIRECTOR OF ENVIRONMENT AND PUBLIC WORKS, CITY OF SANTA MONICA, CALIFORNIA

On behalf of the Mayor and City Council of the city of Santa Monica I want to thank you for the opportunity to give testimony before this subcommittee. I am the Director of Environment and Public Works for Santa Monica and one of my major areas of responsibility is management of the City's drinking water production and distribution system. I would like to share with you today our experiences with MTBE in Santa Monica. Santa Monica is a city of nearly 90,000 permanent residents and over 250,000 daily commuters and visitors. The City depends heavily on groundwater for its drinking water supply. After many years of effort, by 1995 we had been able to maximize the use of local groundwater supplies and achieve 70 percent water self-sufficiency. This was an extraordinary accomplishment in arid Southern California. By using our sustainable local water resources we were there-

fore able to reduce our reliance on increasingly scarce water transferred from Northern California and the Colorado River. This all changed in 1996 when Santa Monica was hit with a drinking water catastrophe caused by MTBE. Within a 6-month period, MTBE forced Santa Monica to shut down most of its water wells. These wells had accounted for about one-half of our total daily water supply. We now purchase more than 80 percent of our drinking water from outside sources, putting further strain on California's already fragile water supply system.

By now, we all know too well the pernicious characteristics of MTBE:

- Once it leaks from a tank or pipeline, MTBE travels quickly and readily dissolves in groundwater;
- MTBE has an uncanny ability to find its way into drinking water wells that may have never been impacted in the past by any of the other chemicals in gasoline;
- MTBE attacks swiftly. MTBE levels in the City's wells rose more quickly than any other water contaminant we had ever encountered; and
- MTBE strikes at the heart of public confidence in the safety of drinking water supplies. People will not drink water that smells and tastes like turpentine, nor should they be expected to.

Although the effects of MTBE on Santa Monica have been devastating, what has perhaps been the most frustrating for us is the recalcitrance of the polluters (oil companies and MTBE manufacturers and distributors) to accept their responsibility and cleanup the mess they have caused. Initially, the significant financial burden to investigate the MTBE contamination, identify who was responsible for the releases, evaluate clean-up alternatives, and purchase replacement water was placed unfairly on the backs of Santa Monica's citizens.

It was not until 18 months after we had started shutting down our wells that we were able to reach an interim agreement with two large oil companies to reimburse the City's past costs and pay for the ongoing costs of dealing with the MTBE problem. This interim agreement lasted only two and one-half years before it was allowed to fall apart by the oil companies; most likely, due to the quickly escalating projections for the cost of MTBE remediation. The estimated cost to clean-up Santa Monica's main well field is now over $250 million. Current estimates for the total cost of nationwide MTBE clean-up are $30 billion and counting.

With no other acceptable options available to us, Santa Monica filed a lawsuit against 18 oil companies and MTBE manufacturers/distributors in June, 2000. Santa Monica did not want to file a lawsuit. From the start, our motivation has been to reach a settlement and get on with the task of restoring our drinking water supply. But, we do not believe it is right for our water customers to pay for any of the costs to do so. Two years after filing our lawsuit, we were able to reach a new settlement with two of the major oil companies. This settlement, if approved by the courts, guarantees that Santa Monica's water will be cleaned up as quickly as possible, with the full cost borne by the polluters. Our best case projection, however, is that our local drinking water supplies will be back on line by 2008, fully a dozen years after our MTBE problem started.

Our lawsuit against the other companies continues, and must continue under the terms of our settlement to make sure that every responsible party ends up paying their fair share to restore Santa Monica's groundwater resources. Santa Monica will eventually overcome this MTBE crisis, but the price will be steep. It is only fair that costs for remediation of MTBE and other water contamination must ultimately be paid for by the polluters. But, as we have found in Santa Monica through painful experience, it is frequently only the prospect of a very expensive jury judgment intended, perhaps, to punish them for their past misconduct that will bring many of the MTBE polluters to the negotiating table.

Public water agencies need to make use of every legal tool at their disposal to ensure that polluters ultimately do what's right. If a defective product is produced and sold, then the damages caused by such a product should be the responsibility not of the customer, but of the companies that made it and sold it. If MTBE is a defective product, then there is no legitimate justification for treating it differently than any other product in the economy. It would be very harmful to Santa Monica and many other communities to prevent product defect liability claims against MTBE just as we are struggling to ensure that MTBE polluters deal expeditiously with the serious water contamination problems they have caused. We need your support, and I thank you for your consideration and assistance.

STATEMENT OF ERIK D. OLSON, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL, ON BEHALF OF NRDC AND THE ENVIRONMENTAL WORKING GROUP

ABSTRACT

MTBE and reformulated gasoline probably have contributed to reductions in air emissions. However, MTBE is extremely soluble in water, persistent, and smells and tastes foul. It renders water containing fairly low levels (about 20–40 parts per billion according to EPA) unusable for drinking, because the public refuses to consume or use it. There also are potential health concerns with MTBE, including possible carcinogenicity and other toxicity issues. Moreover, it is nearly impossible, and very expensive, to remove MTBE from water supplies once they become contaminated.

Because of its properties, MTBE has caused widespread contamination of water across the country. New USGS data show about 3 percent of wells, 5 percent of source waters, and 9 percent of Northeastern drinking water supplies have detectable MTBE; nationally, about 5 percent of public supplies contain MTBE. In the Northeast, about 15 percent of drinking water supplies in high MTBE use areas contain this chemical. Large numbers of underground storage tank leaks, spills, and other sources have lead to releases of MTBE-containing fuel, and MTBE migrates in the environment very quickly. Most MTBE contamination to date apparently is below EPA's 20 ppb advisory level, but many contamination incidents above this level have been reported. A map of MTBE contamination incidents is included in this testimony.

It has been argued that the oil industry was "forced" to use MTBE as part of the 1990 Clean Air Act's oxygenate mandate, and that therefore the industry should not be held responsible for the widespread water contamination. However, this is a distortion of the truth. Neither EPA nor Congress ever mandated that industry use MTBE. Elements of the petroleum industry urged the use of MTBE as an oxygenate. Moreover, internal industry documents that were not released to the public until litigation recently pried them loose show an entirely different story. The industry knew at least in the early 1980's that MTBE was highly mobile, highly water soluble, highly persistent, and could render water unusable at low levels of contamination. Moreover, the industry was aware that many of its tanks were leaking fuel, often including MTBE. A court recently held major oil companies responsible for acting "with malice" in failing to warn the public about MTBE.

We support legislation that would phase-out MTBE and would eliminate the 2 percent oxygenate requirement, while maintaining air quality benefits. We do not favor an ethanol mandate. The "deal" that was struck previously in the Senate was marred by a deal-breaker amendment that preempted both State and Federal liability for oil company contamination of water supplies by "renewable fuels." This was expanded in a House counter offer to include MTBE. We strongly oppose any provision that would eliminate any legal tools available to local governments, water suppliers, or others harmed by contamination of water supplies. Industry knew about MTBE problems and could have controlled them, and must have the incentive to minimize and address the impacts of new fuels and additives

Finally, there is a related issue involving potential groundwater contamination with MTBE and other toxic materials that may arise in the energy bill. Hydraulic fracturing is a process of injecting fluids under high pressure, sometimes containing MTBE, diesel fuel, or other toxins, to fracture underground formations to remove natural gas. A court has ruled that HF must be regulated under the Safe Drinking Water Act, and the congressionally chartered National Drinking Water Advisory Council has recommended that EPA retain its authority to regulate this potentially harmful practice. Congress should not impede this current EPA authority.

Introduction

I am Erik D. Olson, a Senior Attorney at the Natural Resources Defense Council (NRDC), a national non-profit organization with over 500,000 members dedicated to the protection of public health and the environment. I also serve as chair of the Campaign for Safe and Affordable Drinking Water, an alliance of over 300 public health, medical, consumer, environmental, and other organizations seeking to assure safe drinking water at a reasonable price to all Americans, though today I do not appear on behalf of the Campaign.

Part 1 of this testimony focuses primarily on MTBE. Part 2 briefly notes another important water issue likely to be addressed in the energy legislation, the use of hydraulic fracturing in oil and gas activities, which may harm water supplies. Part 3 highlights what the oil industry knew about MTBE problems, and when they knew about them, and was written by the Environmental Working Group, which authored the report summarized in that section, and joins in this testimony.

Why MTBE?

Because of serious air pollution triggering smog alerts in many "non-attainment" areas around the Nation, EPA began investigating changes in fuel supplies that could result in air quality improvements. For many years EPA was investigating the possible widespread use of methanol (a chemical cousin of ethanol) as a fuel. The petroleum industry, on the other hand, had another idea: reformulated gasoline that was produced from a byproduct fraction of petroleum cracking that for years had little market, called methyl tert-butyl ether (MTBE). MTBE could be used as an "oxygenate," elements of the petroleum industry argued, and would reduce carbon monoxide emissions and ozone levels in the atmosphere, leading to air quality benefits.

1990 Clean Air Act Amendments

In enacting the Clean Air Act Amendments (CAA) of 1990, Congress required the use of oxygenates in gas, in order to improve air quality. The use of oxygenates makes gas burn cleaner. The oxygenate requirement also was enacted in part because Congress hoped to give a big boost to the ethanol industry, which can use distilled "biomass" to make this alcohol. Instead of switching mostly to ethanol, the petroleum industry chose to use MTBE as the oxygenate of choice. MTBE use skyrocketed (see figure 1). By 1998, MTBE became "the second most-produced organic chemical in the U.S.," with about 10 million gallons used per day.[1]

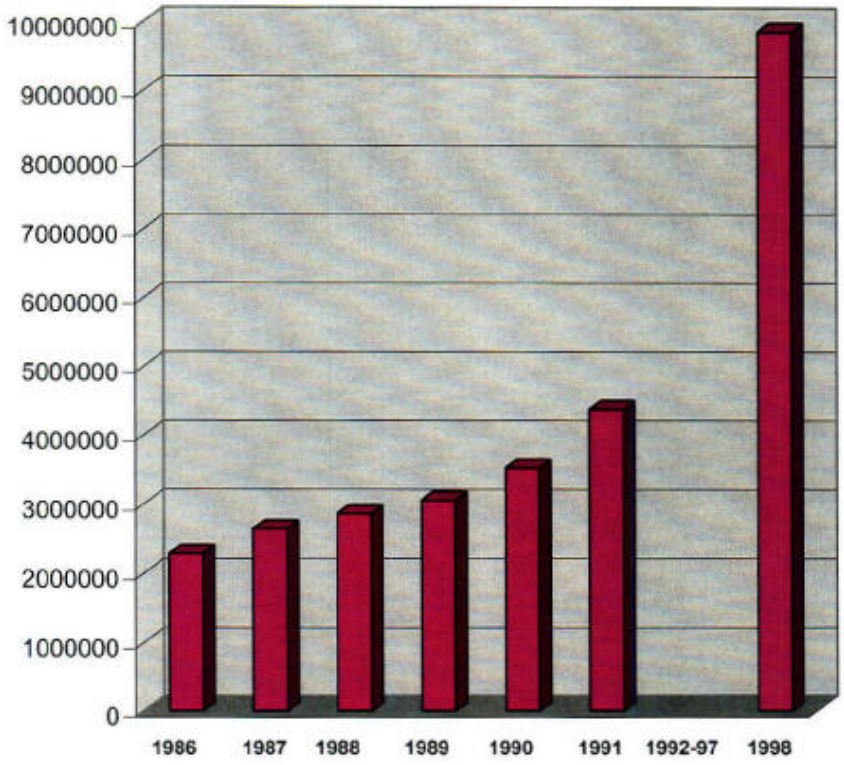
EPA Blue Ribbon Panel on MTBE

EPA's Blue Ribbon Panel on MTBE concluded that the Reformulated Gasoline Program (RFG) established in the Clean Air Act Amendments of 1990 "has provided substantial reductions in the emissions of a number of air pollutants from motor vehicles. . . ." The reductions were greater, in fact, than legally required. The panel also noted that "there is disagreement about the precise role of oxygenates [such as MTBE] in attaining the RFG air quality benefits," though oxygenated fuels did, the panel concluded, probably reduce emissions. But in large because of the water quality problems caused by MTBE, the panel recommended:

- "Action . . . to reduce the use of MTBE substantially (with some members supporting its complete phase-out), and action by Congress to clarify Federal and State authority to regulate and/or eliminate the use of gasoline additives that threaten drinking water supplies;
- "Action by Congress to remove the current 2 percent oxygen requirement to ensure that adequate fuel supplies can be blended in a cost-effective manner while quickly reducing usage of MTBE; and
- "Action by EPA to ensure that there is no loss of current air quality benefits."

[1]Personal Communication with John Zogorski, USGS, March 11, 2003; Johnson, Pankow, Bender, Price, and Zogorski, USGS, "MTBE: To What Extent Will Past Releases Contaminate Community Water Supply Wells?" Environmental Science & Technology at 2A (May 1, 2000).

FIGURE 1
U.S. MTBE USE (gal/day)



Source: NRDC, Based on API Data

Serious Concerns about Water Quality

While MTBE may have contributed to improved air quality in some communities, the bad news is that MTBE is extremely soluble in water, far more soluble than hydrocarbon components such as benzene, toluene, and xylene (see Figure 2).

Industry Knew Long Before 1990 CAA Amendments MTBE Was a Problem

As discussed at length in Part 3 in this testimony, internal oil industry documents that were only released in litigation show that the oil industry well aware of MTBE's water-contaminating properties before the 1990 Clean Air Act Amendments. These documents also show that the industry was aware that spills or leaks containing MTBE spread very fast, and were extremely difficult and expensive to clean up. Indeed, by 1981, a Shell scientist wrote an internal report on an MTBE contamination problem and the difficulties of cleanup. The joke inside Shell was that MTBE really stood for "Most Things Biodegrade Easier;" later, other versions of the joke circulated, including "Menace Threatening Our Bountiful Environment," or "Major Threat to Better Earnings." (Attachment 5)

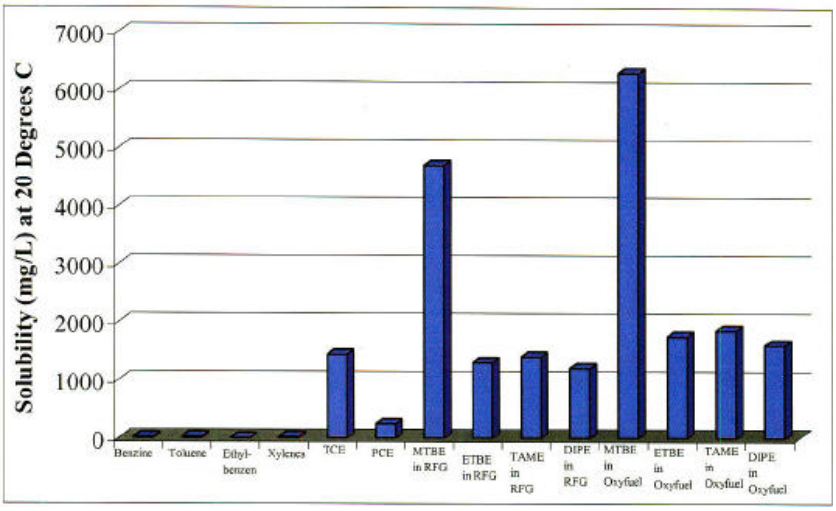
These and many other facts, documents, and testimony were considered by the jury that found that there was "clear and convincing evidence" in the South Tahoe case that Shell Oil and Lyondell Chemical Company (ARCO chemical Company) acted "with malice" in selling gasoline containing MTBE both because it was "defective in design" because the risks of harm outweighed its benefits, and because of

their failure to disclose the threats posed by MTBE.[2] Several other oil company defendants opted to settle the case before these findings were rendered.

Other MTBE Chemical Cousins May Also Present Problems

Other ethers being considered as gasoline additives, such as ethyl-tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), and di-isoproyl ether (DIPE) also are extremely soluble, like MTBE. (Figure 2). The high solubility of MTBE has lead to widespread contamination of groundwater and surface waters across the Nation.

FIGURE 2: SOLUBILITY OF HYDROCARBON COMPOUNDS VS. MTBE AND OTHER ETHERS



Source: NRDC, using data presented in Johnson et al., USGS, 2000

Widespread MTBE Contamination of Water

According to estimates from U.S. Geological Survey (USGS) experts, there may be 250,000 leaking underground storage tank (LUST) releases of MTBE.[3] Pipeline releases, gas spills, and other sources also contaminate groundwater and surface water with MTBE. USGS estimates that about 35 percent of community water system wells are located within 1 km of a LUST (9000 wells).[4]

Newly released (March 2003) USGS data indicates that about 3 percent of groundwater wells in the U.S. contain MTBE, and about 5 percent of source waters contain MTBE (Figures 3 and 4).[5] Testing also indicates that MTBE is often found in tap water—about 9 percent of water supplies in the Northeast that were tested.[6] About 15 percent of drinking water in the high MTBE use areas in the Northeast contained MTBE.[7] Most is found at relatively low levels; about 1 percent of northeastern drinking water exceeded the low end of EPA's advisory level (20 ppb).[8]

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[2]South Tahoe Public Utility District v. ARCO, No. 999128 (Superior Court, S.F., March 4, 2002), SPECIAL VERDICT PHASE 1 (Attachment 4).

[3]Johnson, Pankow, Bender, Price, and Zogorski, USGS, "MTBE: To What Extent Will Past Releases Contaminate Community Water Supply Wells?" Environmental Science & Technology at 2A (May 1, 2000).

[4]Ibid.

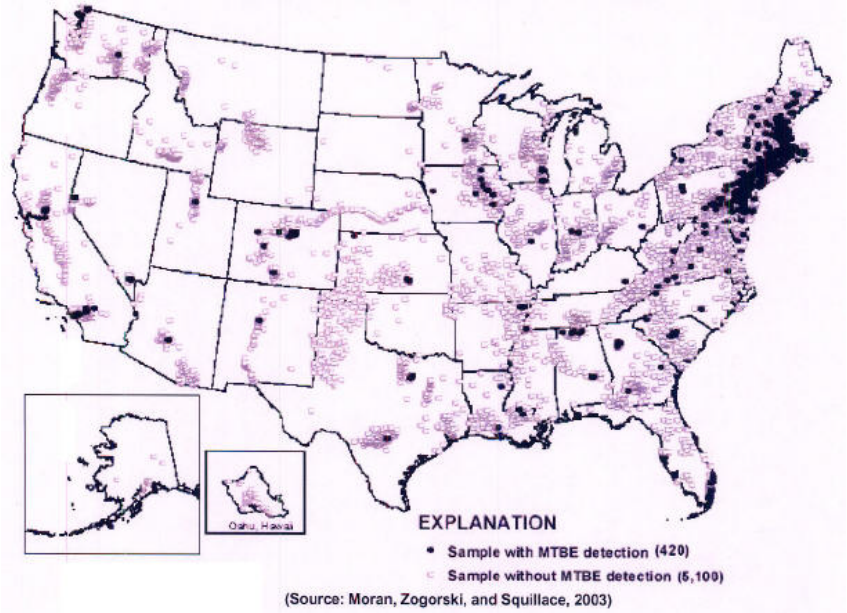
[5]Moran. MJ, Zogorski, JS,Squillace PJ, "Occurrence and Distribution of MTBE and Gasoline Hydrocarbons in Groundwater and Groundwater Used as Source Water in the United States and in Drinking Water in 12 Northeast and Mid-Atlantic States, 1993–2002" (March 2003, in press) available online at http://sd.water.usgs.gov/public—naw/pubs/journal/GW.MTBE.moran.pdf

[6]Ibid.

[7]Ibid.

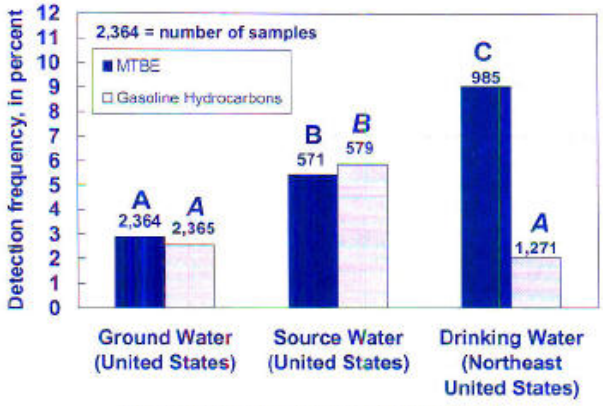
[8]Ibid.

FIGURE 3
USGS DETECTIONS OF MTBE



(Source: Moran, Zogorski, and Squillace, 2003)

FIGURE 4: FREQUENCY OF DETECTION OF MTBE



(Source: Moran, Zogorski, and Squillace, 2003)

Health Concerns With MTBE

MTBE contamination of drinking water poses health concerns, but as is usually true with chemical contaminants, there remains some uncertainty as to how serious these risks are. EPA has found that MTBE may be a carcinogen, but has not reached a final verdict on the issue. There have been reports of acute human-health effects of MTBE such as nausea, dizziness, and headaches by people exposed to

MTBE-containing fuel vapors in air, though some argue that these symptoms have not been clearly linked to MTBE exposure.[9] The human-health effects of long-term inhalation or oral exposures to MTBE are unknown.[10] However, there is some evidence of possible reproductive and developmental effects.[11]

There are no published studies evaluating MTBE and cancer in humans, but MTBE has been shown to cause cancer in rats and mice exposed by inhalation or orally.[12] Federal agency reports indicate that MTBE should be regarded as posing a potential cancer risk to people based on animal cancer data.[13] Although EPA has concluded that "MTBE poses a potential for human carcinogenicity at high doses" based on animal data, EPA says that these animal data "do not support confident, quantitative estimation of risk at low exposure"[14] EPA has based its Drinking Water Advisory upon taste and odor thresholds (20 to 40 μg/L) in humans, and has

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[9]Toccalino, P., "Human Health Effects of MTBE: A Literature Summary," USGS, available on the web at http://sd.water.usgs.gov/nawqa/vocns/mtbe—hh—summary.html; citing inter alia Agency for Toxic Substances and Disease Registry, 1996, Toxicological profile for methyl t-butyl ether (MTBE): Atlanta, GA, U.S. Department of Health and Human Services, Public Health Service, August 1996, 268 p., http://atsdr1.atsdr.cdc.gov/toxprofiles/tp91.html; Health Effects Institute, 1996, The potential health effects of oxygenates added to gasoline. A review of the current literature. A special report of the Institute's oxygenates evaluation committee: Cambridge, MA, Health Effects Institute, April 1996, http://www.healtheffects.org/Pubs/oxysum.htm; National Institute of Environmental Health Sciences, 2002, MTBE (in gasoline): National Institute of Environmental Health Sciences, March 13, 2002, http://www.niehs.nih.gov/external/faq/gas.htm; National Research Council, 1996, Toxicological and performance aspects of oxygenated motor vehicle fuels: Washington, DC, National Academy Press, 160 p.; National Science and Technology Council, 1996, Interagency assessment of potential health risks associated with oxygenated gasoline: Washington, DC, National Science and Technology Council, Committee on Environment and Natural Resources, February 1996, http://www.ostp.gov/NSTC/html/MTBE/mtbe-top.html; Office of Science and Technology Policy, 1997, Interagency assessment of oxygenated fuels: Washington, DC, Office of Science and Technology Policy, National Science and Technology Council, Executive Office of the President of the United States, June 1997, 264 p., www.epa.gov/oms/regs/fuels/ostpfin.pdf .

[10]Toccalino, supra; citing inter alia National Institute of Environmental Health Sciences, 2002, MTBE (in gasoline): National Institute of Environmental Health Sciences, March 13, 2002, http://www.niehs.nih.gov/external/faq/gas.htm; U. S. Environmental Protection Agency, 1995, Proceedings of the conference on MTBE and other oxygenates: a research update. Conference summary session seven: Research Triangle Park, NC, U.S. Environmental Protection Agency, National Center for Environmental Assessment, EPA/600/R–95/134, August 1995, 274 p., www.epa.gov/ncea/pdfs/mtbe/0850-A.pdf; National Research Council, 1996, Toxicological and performance aspects of oxygenated motor vehicle fuels: Washington, DC, National Academy Press, 160 p.; National Science and Technology Council, 1996, Interagency assessment of potential health risks associated with oxygenated gasoline: Washington, DC, National Science and Technology Council, Committee on Environment and Natural Resources, February 1996, http://www.ostp.gov/NSTC/html/MTBE/mtbe-top.html' Office of Science and Technology Policy, 1997, Interagency assessment of oxygenated fuels: Washington, DC, Office of Science and Technology Policy, National Science and Technology Council, Executive Office of the President of the United States, June 1997, 264 p., http://www.epa.gov/oms/regs/fuels/ostpfin.pdf.

[11]Hartley, W.R., A.J. Englande, Jr., and D.J. Harrington. 1999. "Health risk assessment of groundwater contaminated with methyl tertiary butyl ether." Water Science & Technology 39, no. 11: 305–310.

[12]Toccalino, supra citing inter alia, Health Effects Institute, 1996, The potential health effects of oxygenates added to gasoline. A review of the current literature. A special report of the Institute's oxygenates evaluation committee: Cambridge, MA, Health Effects Institute, April 1996, http://www.healtheffects.org/Pubs/oxysum.htm; National Institute of Environmental Health Sciences, 2002, MTBE (in gasoline): National Institute of Environmental Health Sciences, March 13, 2002, http://www.niehs.nih.gov/external/faq/gas.htm;

[13]Toccalino, supra citing inter alia; National Science and Technology Council, 1996, Interagency assessment of potential health risks associated with oxygenated gasoline: Washington, DC, National Science and Technology Council, Committee on Environment and Natural Resources, February 1996, http://www.ostp.gov/NSTC/html/MTBE/mtbe-top.html; Office of Science and Technology Policy, 1997, Interagency assessment of oxygenated fuels: Washington, DC, Office of Science and Technology Policy, National Science and Technology Council, Executive Office of the President of the United States, June 1997, 264 p., http://www.epa.gov/oms/regs/fuels/ostpfin.pdf; U. S. Environmental Protection Agency, 1997, Drinking water advisory: Consumer acceptability advice and health effects analysis on methyl tertiary-butyl ether (MTBE): Washington, DC, U. S. Environmental Protection Agency, Office of Water, EPA–822-F–97–009, December 1997, 48 p., http://www.epa.gov/waterscience/drinking/mtbe.pdf.; California Department of Health Services, 2001, Proposed Regulations, California Code of Regulations, Title 22, Chapter 15, Section 64468.2. health effects language—volatile organic chemicals: Sacramento, CA, California Department of Health Services, R–16–01, April 12, 2001, 26 p., http://www.dhs.cahwnet.gov/ps/ddwem/publications/Regulations/R–16–01-RegTxt.pdf.

[14]U.S. Environmental Protection Agency, 1997, Drinking water advisory: Consumer acceptability advice and health effects analysis on methyl tertiary-butyl ether (MTBE): Washington, DC, U. S. Environmental Protection Agency, Office of Water, EPA–822-F–97–009, December 1997, 48 p., http://www.epa.gov/waterscience/drinking/mtbe.pdf

not yet established any enforceable health standard for MTBE.[15] Consumer rejection due to taste and odor of MTBE often has been a factor in water utility decisions to stop using or to treat water sources contaminated with MTBE.

State Actions Banning or Restricting MTBE

In response to widespread concerns about MTBE contamination, at least 17 States have adopted bans or serious restrictions on MTBE usage, and two have required intensive studies of MTBE contamination (Attachment 1).

Need for Federal Legislation

There is an urgent need for Federal legislation that would:

- Ban MTBE, while maintaining air quality. Congress needs to step in and enact a clear MTBE ban, but should accompany this with a requirement that air quality benefits of reformulated gas not be reduced. While there have been huge pollution reductions in smog and cancer-causing air toxics from the switch to reformulated gasoline, Congress can no longer ignore the harm being done by gasoline and MTBE leaking into drinking water supplies. Oil refiners have the ability to produce gasoline that achieves just as much air pollution reduction without oxygenates such as MTBE, but the law currently mandates their use. Congress should act immediately to repeal the mandate. It makes no sense to have a patchwork approach to this problem with 15 to 20 States banning MTBE; if Congress doesn't act and State bans go into effect, this could create needless confusion and burdens for consumers.
- Prohibit oil companies from producing a fuel that is less effective at reducing smog and toxic air pollutants than the RFG sold today when they remove oxygenates. We do not need to take a step backward in combating air pollution in order to protect groundwater.
- Eliminate the 2 percent oxygen mandate. We agree with numerous State officials, health groups, and API that Congress must lift the oxygenate requirement (and ban MTBE) while maintaining air quality benefits.
- Give EPA clear authority to regulate fuel additives based upon air and water quality impacts (the Senate energy bill last Congress would embody this authority; the House counter-offer last year did not).
- No ethanol mandate. The legislation should set standards for gasoline performance, rather than mandate a particular solution to the problem.
- Encourage use of clean, renewable biofuels made from biomass, which reduce global warming while improving air quality and reducing water risks.

No Waiver or Preemption of State or Other Liability for Fuel Contamination

Our most overwhelming concern is that the legislation should not include any waiver or preemption of State or other liability for renewable fuels or MTBE. Introduced legislation (Rep. Peterson's H.R. 837 and Sen. Daschle's S. 385) include a so-called "safe harbor" provision that would preempt State law and effectively remove tools available to States and municipalities to remedy tap water contamination problems from fuel containing "renewable fuels." The provision would block lawsuits alleging that gasoline is a defective in design or manufacture because it contains such renewable fuels. A similar Senate measure last year was answered by a House conferees' offer that would have expanded this waiver of liability and preemption to MTBE.

Such a waiver of liability and preemption of State law is an unacceptable overreach that will hurt the public, local governments, the environment, and will encourage irresponsible corporate behavior. As the South Tahoe jury found after an extensive trial and review of an enormous number of industry documents and witnesses, many in the oil industry knew of the risks of MTBE, and irresponsibly failed to act or to warn the public or their customers.

Well before Congress enacted the 1990 CAA, the oil industry was aware of the risks posed by MTBE to water supplies, of the difficulty of cleaning up spills and leaks, of the persistence of MTBE, and of the fact that many oil storage tanks were leaking. Elements of the oil industry knew of problems a long time ago, and according to the California jury, acted "with malice" in failing to disclose these risks. (Attachment 4). As between this highly culpable oil industry that knew about the problem, failed to remedy it, and profited from the sale of their defective product, and the public water supplies that had nothing to do with creating the problem, and would have to bill their customers to remedy it, who should pay for the cleanup? Clearly, the oil industry should not be let off the hook for this liability. Why deny an important tool to local government and water utilities to address this important drinking water quality and potential health problem?

[15]Ibid.

A liability waiver and preemption also would create unacceptable incentives for manufacturers to introduce defective products. What will be the next MTBE? TAME? DIPE? ETBE? Why do the renewable fuels manufacturers need such liability protection? Do they know of problems with their products that they are not telling Congress or us about, much like the oil industry was not very forthcoming about the problems with MTBE before it came into such widespread use?

The petroleum industry is clearly in best position to know about and to take action to avoid another MTBE. Industry must have the incentive to minimize the impacts of new fuel additives or new fuels.

. Last year, there was a strong alliance behind a sensible solution to the MTBE and oxygenate problem, which included API. The liability waiver and preemption was added after that deal was cut, and is a deal breaker. We oppose the safe harbor provision in the bill offered by Senator Daschle (S. 385) and others this year in the Senate, and we would oppose any legislation that contains the provision as part of the energy bill.

PART 2: THE NEED TO REGULATE HYDRAULIC FRACTURING TO PROTECT UNDERGROUND SOURCES OF DRINKING WATER

There is another threat to drinking water and groundwater by chemicals also used in gasoline and diesel fuel that is worthy of discussion and protective action by Congress. Hydraulic fracturing is a well development process that is designed to increase the yield of natural gas from underground rock formations, including coal. Fluid is injected down a well and into a rock formation at very high pressure in order to break up the rock formation and enable more gas to flow toward the well after all the groundwater has been removed.

Hydraulic fracturing fluid commonly contains many toxic chemicals that pose a significant threat to underground sources of drinking water. The carcinogen benzene, and MTBE, diesel fuel, and many other chemicals are known to be used in hydraulic fracturing fluids. It is well known that very small volumes of potent chemicals like benzene and MTBE can contaminate millions of liters of groundwater. In recent years, that has been painfully obvious as MTBE contaminated groundwater and surface water across the country. Just 28 tablespoons of MTBE could contaminate millions of liters of groundwater at concentrations that would render it unusable.[16] It is important to note that the large number of coal bed methane wells planned in the US are of particular concern because their depths are relatively shallow and 10 of the 11 coal basins in the United States are likely to lie, at least in part within existing underground sources of drinking water.[17]

News from the Groundwater Protection Council found at http://www.gwpc.org/News–2003/states-weigh.htm .

A draft report by EPA reveals that many of the estimated concentrations of chemicals used in hydraulic fracturing fluids at the edge of the fracturing zone exceed the drinking water maximum contaminant levels (MCL)—even with an estimated dilution effect of 30.[18] The EPA report reveals that the estimated concentration of the carcinogen benzene is twice the drinking water MCL. The estimated concentrations of other chemicals exceed their MCLs by much greater factors—431 times the MCL in the case of methanol.[19]

There are a very limited number of empirical scientific studies that have evaluated the behavior of these chemicals in the subsurface and their effects on groundwater quality. The toxic chemicals used in fracturing fluid can be continuous sources of groundwater contamination since, as the EPA report reveals, as much as 39–75 percent of fracturing fluids remain in the ground.[20]

After briefing some staff from the House Energy & Commerce committee last September, it was discovered that EPA's calculations for estimated subsurface concentrations of chemicals of concern were based on values that were not consistent with data in their report that resulted in estimated concentrations 10 times lower.[21] [22] A January 2003 article in Environmental Science & Technology includes the sug-

[16]Johnson, R., et al., "MTBE: To What Extent Will Past Releases Contaminate Community Water Supply Wells?", Environ. Sci. Technol. 2000, 34 (9), 210 A–217.

[17]USEPA, 2002, Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs, p. ES–11, 5–14, and 7–2.

[18]Ibid., p. 4–4.

[19]Ibid., p. 4–4.

[20]Ibid., p. 3–10.

[21]Gurney, S., 2002, Comments submitted by the Natural Resources Defense Council about US EPA draft report Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs., US EPA Water Docket ID No. W–01–09–11

[22]First letter to EPA Administrator Christine Todd Whitman from Congressman Henry Waxman, October 1, 2002. Available at http://www.house.gov/waxman/news—letters.htm.

gestion by a USGS hydrologist that EPA's dilution factor of 30 is not justified and that even if "only 20–30 percent of the fracturing fluids remain in the formation and the fluids include diesel fuel, the aquifer would be destroyed because the diesel will remain as a contaminant for generations."[23]

The near-impossibility of cleaning up underground sources of drinking water once they have become contaminated is precisely why Congress acted with precaution to protect existing and future sources of drinking water in the Underground Injection Control provisions of the Safe Drinking Water Act. Preventing widespread contamination of drinking water is far less expensive than attempting to clean it up later.

EPA's congressionally chartered National Drinking Water Advisory Council, comprised of representatives of the water industry, State and local governments, public health experts, consumers, environmental groups, and others, unanimously adopted a resolution December 12, 2002 urging the Administrator "to work through voluntary and/or regulatory means as appropriate in order to eliminate the use of diesel fuel and related additives in fracturing fluids that are emplaced in geologic formations containing sources of drinking water." (Attachment 2). Furthermore, the National Drinking Water Advisory Council urged the Administrator "to defend as necessary the US EPA's existing authority and discretion to implement the Underground Injection Control Program in a manner that advances the protection of our groundwater resources from contamination." Support for oversight of State Underground Injection Control programs by EPA is growing in many States as they face serious budget shortages.[24]

We are very concerned about Section 2201 of the legislation filed by Congressman Barton that addresses hydraulic fracturing. EPA should not finalize its report entitled "Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs" until meaningful field investigation has been accomplished that includes collection and analysis of groundwater samples and installation of monitoring wells. In addition, EPA must retain its authority to oversee State regulation of hydraulic fracturing through the Underground Injection Control program to prevent contamination of underground sources of drinking water—consistent with Congress' intentional precautionary action via the Safe Drinking Water Act.

PART 3: MTBE: WHAT THE OIL COMPANIES KNEW AND WHEN THEY KNEW IT

Internal Industry Documents Are Rewriting The MTBE Pollution Story

In 2002, the Environmental Working Group released a report summarizing a series of internal oil industry documents that highlight the true story about MTBE. That report, available in full at www.ewg.org, is excerpted in this section of the testimony (web links to electronic versions of the industry documents cited in this testimony are included for readers of the electronic version of the testimony; copies of some of the key documents are attached to the hard copy version of the testimony).

Congress is considering legislation to strictly limit oil company liability for contaminating groundwater in at least 35 States with MTBE. The industry says it's only fair to shield MTBE makers from lawsuits, since, they claim, it was the government that mandated oil companies to reformulate gas with MTBE in the first place, to clean the air.

But a different story has emerged from internal industry documents and depositions, made public in recent successful lawsuits brought by cities and Communities for a Better Environment that want oil companies to pay to clean up water made undrinkable and unhealthy by MTBE. The documents, provided to EWG by CBE's lawyers Scott Summy and Celeste Evangelisti, show that the oil industry itself lobbied hard for the MTBE mandate because they made the additive and stood to profit. A top ARCO executive admitted under oath, "The EPA did not initiate reformulated gasoline. . . ." He clarified that "the oil industry . . . brought this [MTBE] forward as an alternative to what the EPA had initially proposed." (Attachment 3)

By 1986, the oil industry was adding 54,000 barrels of MTBE to gasoline each day. By 1991, 1 year before the EPA requirements went into effect, the industry was using more than 100,000 barrels of MTBE per day in reformulated gasoline. Yet secret oil company studies, conducted at least as early as 1980, showed the industry knew that MTBE contaminated groundwater in numerous locations where it was used.

Oil companies are pressing Congress for liability protection because hundreds of communities have serious MTBE contamination problems, and company documents

[23] "Does Hydraulic Fracturing Harm Groundwater?," Environ. Sci. Technol. 2003, 37 (1), 11A–12A.

[24]

are coming back to haunt them in the courtroom. In April 2002, the documents convinced a California jury to find Shell, Texaco, Tosco, Lyondell Chemical (ARCO Chemical), and Equilon Enterprises liable for selling a defective product (gasoline with MTBE) while failing to warn of its pollution hazard, forcing a $60 million settlement with the water district for South Tahoe. (Attachment 4).

"The Government Made Us Do It"

As noted earlier in this testimony, MTBE is an "oxygenate" that makes gasoline burn cleaner and more efficiently. Unfortunately, it is also a foul-tasting, nasty-smelling, potential carcinogen that spreads rapidly when gasoline escapes from leaky underground storage tanks, contaminating sources of groundwater and drinking water from New York to California. Once in soil or water, MTBE breaks down very slowly while it accelerates the spread of other contaminants in gasoline, such as benzene, a known carcinogen.

Some communities, including Santa Monica and South Lake Tahoe, Calif., face tens or hundreds of millions of dollars in costs of cleaning up MTBE or replacing contaminated water supplies. At least 17 States already have passed measures to ban or significantly limit the use of MTBE in gasoline; two more have required intensive studies. We believe that a Federal ban is more a question of when than if.

Pressure is building to follow the lead of many States and ban MTBE nationally by the year 2006. Members of Congress from corn-producing States support the phase-out in part because ethanol made from corn is the primary MTBE substitute. Other members sympathetic to oil industry concerns, in turn, are demanding that any ban on MTBE shield its makers from product-defect liability. The proposal apparently would not preclude suits against parties responsible for allowing MTBE to leak from storage tanks, but would provide immunity from suits claiming that MTBE itself was a defective product—precisely the charge that won a $60 million settlement for the South Tahoe Water District this year. The jury in that case found five oil and chemical companies liable for selling a defective product—MTBE—while failing to warn of its pollution risks. (Attachment 4)

The MTBE Papers

The paper trail, dating at least to 1980, tells a different story: How the oil companies took a byproduct fraction of gasoline refining that had little profitable use and created a profitable market. Beginning in the mid-1980's, well in advance of the 1992 Federal mandate to reformulate gasoline to meet the standards of the Clean Air Act, elements of the petrochemical industry promoted MTBE to U.S. and State regulators as the additive of choice.

Thousands of pages of internal documents and sworn depositions from the producers at Shell, Exxon, Mobil, ARCO, Chevron, Unocal, Texaco and Tosco (now Valero) have come to light through a lawsuit by Communities for a Better Environment, a California public interest group. Many of the same documents were used in a suit by the South Lake Tahoe Water District against four oil companies and Lyondell Chemical Co. of Houston (ARCO Chemical Company), the nation's largest MTBE producer. In the CBE suit, several of the companies settled by agreeing to clean up MTBE spills at more than 1,300 California gas stations; the others continue to contest the case.

In 2002, a jury in the Tahoe case found Lyondell, Shell, Texaco, Equilon, and Tosco guilty of irresponsibly manufacturing and distributing a product they knew would contaminate water. In addition, the jury found by "clear and convincing evidence" that both Shell Oil Company and Lyondell Chemical Company acted with "malice" by failing to warn customers of the almost certain environmental dangers of MTBE water contamination.

In an interview with The Sacramento Bee, the jury foreman said he found the MTBE papers, which demonstrated the industry's early knowledge that MTBE would threaten water supplies "among the most compelling evidence he recorded in 635 pages of handwritten notes." The foreman stated that "[t]here were lessons to be learned, but (Shell) didn't (learn them) because it saw money to be made in selling the product." After the jury verdict establishing liability, but before the jury could assess monetary damages, the companies settled the case for $60 million.

Oil Companies Knew MTBE Was a Threat to Water Supplies

Even though MTBE was not classified as a potential cause of cancer in humans until 1995, refiners knew much earlier that its powerfully foul taste and smell meant that small concentrations could render water undrinkable, and that once it got into water supplies it was all but impossible to clean up. A Shell hydrogeologist testified in the South Lake Tahoe case that he first dealt with an MTBE spill in 1980 in Rockaway, N.J., where seven MTBE plumes were leaking from underground storage tanks. By 1981, when the Shell scientist wrote an internal report on the

Rockaway plumes, the joke inside Shell was that MTBE really stood for "Most Things Biodegrade Easier." Later, other versions of the joke circulated, including "Menace Threatening Our Bountiful Environment," or apropos to the present attempt to limit liability, "Major Threat to Better Earnings." (Attachment 5) and

In 1983, Shell was one of at least nine companies surveyed by a task force of the American Petroleum Institute on "the environmental fate and health effects" of MTBE and other oxygenates. Shell's Environmental Affairs department replied to the trade association: "In our spill situation the MTBE was detectable (by drinking) in 7 to 15 parts per billion so *even if it were not a factor to health*, it still had to be removed to below the detectable amount in order to use the water." (emphasis added). The survey, the results of which were later distributed to all API members, asked for information about the number and extent of spills, chemical analysis of the spill and the contaminated water, and health effects to people in the community.

Clearly, Shell was not the only company that knew about MTBE problems. An environmental engineer for ExxonMobil (the companies merged in 1999) testified that he learned of MTBE contamination from Exxon gasoline in 1980, when a tank leak in Jacksonville, Maryland, fouled wells for a planned subdivision. The ExxonMobil engineer said it was learned MTBE had also leaked into the subdivision's wells from a Gulf and an Amoco station.

Storage Tanks Were Known to be Leaking in the 1970's and 1980's

Refiners also knew that underground gasoline storage tanks were susceptible to leaks, a fact that would amplify the problem with MTBE. In 1973, an Exxon report on the problem said: "The subject of underground leaks at service stations is one of growing concern to gasoline marketers. Large sums of money, time, and effort are exhausted on a continuing basis in the location and detection of leaking tanks and lines."

In 1981, an ARCO memo said leaking tanks were "a major problem. . . . The issue is essentially a health/safety and environmental one. Escaping vapors can seep into basements, sewers and conduits, creating not only a nuisance but the danger of explosion and/or fire. Escaping gasoline also enters and pollutes the water table. (Groundwater is a major source of the U.S. water supply.) Certain chemicals in gasoline (namely the aromatics like benzene) may be carcinogenic or toxic in certain quantities."

By 1980, Exxon had an annual testing program for tanks and found that 27 percent were leaking; 2 years later the failure rate was up to 38 percent. In 1981, Shell and ARCO, the first refiners to add MTBE, estimated that 20 percent of all U.S. underground storage tanks were leaking. Five years later, in 1986, the EPA concurred. Prior knowledge of the extent of leaking gasoline storage tanks was a major part of South Lake Tahoe's case: Fully aware that tanks were leaking, the petrochemical industry nonetheless introduced an additive known to rapidly percolate down to groundwater from gasoline distribution systems with known leaks. Efforts were ongoing to upgrade storage tank systems, but when industry learned quickly that the new tanks were still leaking, it continued to expand the use of MTBE anyway.

The Industry, not the EPA, Promoted MTBE as an Oxygenate

Recently disclosed court documents clearly show that the oil companies, not State or Federal regulators, were the boosters of MTBE. The industry developed and promoted the concept of using reformulated gasoline to reduce air emissions, assuring the EPA that reformulated gasoline would be better than other options being considered. ARCO Chemical Co.'s Manager of Business Development from 1987 to 1998 testified: "What I recall is the EPA actually promoting using methanol blends . . . and the refining industry said here's another option . . . we can reformulate gasoline to reduce the emissions . . . that would be equal to or better than you would get by substituting or mandating the use of methanol vehicles . . . [T]he oil industry . . . brought this forward as an alternative to what the EPA had initially proposed." He continued, "The EPA did not initiate reformulated gasoline." (Attachment 3)

Well before EPA mandated reformulated gasoline in 1992, the oil industry was aggressively promoting MTBE. According to the American Petroleum Institute, refiners were adding an average of 74,000 barrels of MTBE to gasoline per day from 1986 through 1991, roughly one third of the peak amount added to gasoline in 1998.

In 1987, a representative of ARCO Chemical (later absorbed by Lyondell), which was rapidly expanding its MTBE production, testified before the Colorado Air Quality Control Commission that the additive would reduce emissions and improve gas mileage, that supply and price were no barrier, and that consumers didn't need to be warned about the presence of MTBE in gasoline. Nothing was said about the leak

and contamination problems that ARCO and the rest of the industry had known about for at least 7 years. ARCO's representative testified that in the 1980's he played a similar role in "assisting" the States of Arizona and Nevada in the development of oxygenate programs—programs that resulted in those States adopting MTBE.

The Industry Attacked Safety Studies and Withheld Information From Regulators

In 1986, the Maine Department of Environmental Protection published a report documenting extensive MTBE groundwater contamination in the State. The authors identified MTBE as a "rapidly spreading groundwater contaminant" and discussed the option that "MTBE could be abandoned as an additive in gasoline stored underground" or that gas with MTBE "be stored only in double-contained facilities." The Maine Paper was perhaps the earliest warning from government health officials about the dangers of MTBE. To the oil companies, it was a call to arms. Documents show that even as they were internally disseminating this study and treating its findings seriously, the oil companies joined forces to attack the study's authors and the article's "damage" in an effort to discredit their findings and downplay the risks of MTBE.

The industry disinformation effort began even before publication of the paper. A 1987 ARCO memo details the continued attack on the authors and their research:

"We initially became involved with the Maine DEP prior to the presentation of their first version of this paper at the National Well Water Conference on November 13, 1986 . . . Since the paper was presented last November, we have been working with API, the newly formed MTBE Committee [of the Oxygenated Fuels Association], and on our view to assess the potential impact of this paper on State policymakers [and] to contain the potential 'damage' from this paper. . . ."

The memo goes on to explain how the Maine Petroleum Council, the State affiliate of the API, was preparing a paper claiming that MTBE didn't speed up the spread of benzene in water, that MTBE "only spreads slightly further" than benzene and other contaminants, and that MTBE could be easily removed from water with existing technology—none of which is true. Internally, however, the industry admitted the Maine paper was a scientifically credible threat. A 1987 letter from an ARCO refining executive to his Unocal counterpart admits the MTBE task force didn't "have any data to refute comments made in the paper that MTBE may spread further in a plume or may be more difficult to remove/cleanup than other gasoline constituents."

In 1987, at the same time that ARCO and API were leading the attack on the Maine Paper, EPA issued a request to the industry for "more information on the presence and persistence of MTBE in groundwater." As reported in 2001 by the San Francisco Chronicle and The Sacramento Bee, ARCO responded: "Where gasoline containing MTBE is stored at refineries, terminals or service stations, there is little information on MTBE in groundwater. We feel that there are no unique handling problems when gasoline containing MTBE is compared to hydrocarbon-only gasoline."

Internal Memos Warning Against MTBE Were Ignored

There were voices within the industry that warned against the use of MTBE, on grounds both of public health and cleanup costs from the inevitable leaks. A document dated April 3, 1984 from an Exxon employee said:

> "[W]e have ethical and environmental concerns that are not too well defined at this point; e.g., (1) possible leakage of [storage] tanks into undergroundwater systems of a gasoline component that is soluble in water to a much greater extent [than other chemicals], (2) potential necessity of treating water bottoms as a 'hazardous waste,' [and] (3) delivery of a fuel to our customers that potentially provides *poorer* fuel economy. . . . " (Emphasis added.)

That same year, an Exxon engineer wrote the first in a series of memos outlining "reasons MTBE could add to groundwater incident costs and adverse public exposure:"

> "Based on higher mobility and taste/odor characteristics of MTBE, Exxon's experiences with contaminations in Maryland and our knowledge of Shell's experience with MTBE contamination incidents, the number of well contamination incidents is estimated to increase three times following the widespread introduction of MTBE into Exxon gasoline. . . ." Later, the document notes: "Any increase in potential groundwater contamination will also increase risk exposure to major incidents."

An Exxon memo from 1985 discusses MTBE's "much higher aqueous solubility" than benzene and other gasoline components:

"This can be a factor in instances where underground storage tanks develop a leak which ultimately may find its way to the underground aquifer. When these compounds dissolve in groundwater and migrate through the soil matrix they separate into distinct plumes. MTBE creates the most mobile of the common gasoline plumes. MTBE is not a known carcinogen like Benzene however we can be required by public health agencies to remove it based on its taste and odor characteristics."

Thus, it is clear that the oil industry was not only well aware of the fact the MTBE is extremely soluble, mobile, and persistent, but that leaks could and had seriously contaminated water sources, well before the Clean Air Act Amendments of 1990.

STATEMENT OF JOE JOBE, EXECUTIVE DIRECTOR, NATIONAL BIODIESEL BOARD

Thank you, Chairman Inhofe and the members of the Environment and Public Works Committee for the opportunity to submit comments regarding the environmental and energy benefits of biodiesel.

As Executive Director of the National Biodiesel Board (NBB), it is my pleasure to inform the committee of the benefits of biodiesel and to encourage its inclusion in major legislation before this committee. NBB is the nonprofit entity which serves as the central coordinating body for biodiesel research and development in the United States.

Biodiesel is a cleaner burning alternative fuel made from renewable fats and oils such as soybean oil. It has become the fastest growing alternative fuel in the United States, with more than 300 major fleets using biodiesel today to address air quality concerns and meet Federal alternative fuel requirements. A compelling reason for this growth is that virtually everyone benefits from biodiesel use. It significantly reduces harmful emissions, making it better for the environment and better for human health. It comes from domestically produced, renewable resources, thus contributing to domestic energy security. A thriving biodiesel industry also contributes to our own economy rather than that of the Middle East. Biodiesel is one of the most thoroughly tested fuels on the market today with more than 50 million successful road miles, thousands of off-road and marine hours, and data on virtually every diesel engine type and application.

The EPA recently released a new comprehensive technical report of biodiesel emissions that validates the substantial body of existing biodiesel technical data. The EPA report shows biodiesel use can reduce emissions of particulate matter by 47 percent when compared to petroleum diesel in unmodified diesel engines. The report also verified a 67 percent reduction in unburned hydrocarbons, a contributing factor in the localized formation of smog and ozone; and a 48 percent reduction in the poisonous gas carbon monoxide. Nitrogen Oxides (NOx) is the only category of diesel engine emissions for which biodiesel does not provide significant benefits. However, as a boiler fuel, biodiesel has shown great promise in dramatically reducing NOx.

Biodiesel is the only alternative fuel to have fully completed the health effects testing requirements of the Clean Air Act. The results show biodiesel reduces EPA-targeted air toxics and their corresponding risks of cancer, asthma and other ailments when compared to petroleum diesel. Polycyclic Aromatic Hydrocarbons (PAH) and Nitrated Polycyclic Aromatic Hydrocarbons (nPAH) are compounds believed to cause cancer from diesel engine exhaust. Pure biodiesel reduces most PAH compounds by 80 percent and nPAH compounds by 90 percent.

Biodiesel can help cities across the Nation meet clean air requirements and can be used immediately to help improve the air our children breathe every day when they ride diesel powered buses to school. Biodiesel reduces harmful black smoke and other toxic compounds from diesel exhaust by simply changing the fuel in existing buses, rather than by making tremendous expenditures for new buses and fueling stations.

The "energy balance" of a fuel is an important indicator of its effectiveness in displacing fossil fuel with renewable fuel. According to a DOE/USDA lifecycle analysis, biodiesel has the highest energy balance of any fuel. For every one unit of fossil fuel it takes to produce biodiesel, 3.2 units of energy are gained. That same study concluded that biodiesel also results in a 78 percent lifecycle reduction in carbon dioxide. This means that biodiesel is the single most effective greenhouse gas mitigation technology currently available for heavy duty vehicles and equipment.

Biodiesel can be used in its pure form or blended with petroleum diesel at any level. The most common blend is 20 percent biodiesel mixed with 80 percent diesel, or B20. The comprehensive EPA report shows more incremental emissions benefits

are achieved at the B20 level than with B100. While it remains true that maximum emissions reduction per vehicle can be obtained with B100, the EPA analysis shows that using B20 in 100 vehicles will actually reduce more pollution overall than using B100 in 20 vehicles.

Biodiesel is included as an eligible fuel in the Renewable Fuel Standard (RFS) as would be established by S. 385 legislation introduced by Senators Tom Daschle (D-SD) and Dick Lugar (R-IN). While ethanol is poised to displace significant volumes of gasoline under this initiative, biodiesel is well-positioned to play a valuable role in current and future diesel technology.

The EPA's 2006 sulfur standards for diesel fuel will require a 97 percent reduction in sulfur, and create significant changes for heavy-duty diesel technology. The removal of sulfur will allow aftertreatment technology that is otherwise fouled by sulfur, and will dramatically reduce diesel exhaust emissions. The EPA's rule will also create a fuel performance problem, because the refinery process used to remove sulfur also removes lubricity. Lubricity is the lubricating characteristic in diesel fuel necessary to keep diesel fuel injection systems functioning properly. Biodiesel is well-positioned to address this issue, because it has essentially no sulfur, it already meets the EPA's 2006 sulfur standard, and it is highly effective as a renewable lubricity additive. For example, the addition of less than 2 percent biodiesel, can improve lubricity by as much as 65 percent. This rule will cause a shift in the driving forces for the continued development of heavy-duty diesel fuels. The shift will be away from such a strong focus on nitrogen oxides and particulate matter, to place more of an emphasis on energy security, renewability, and the reduction of air toxics and greenhouse gases. These are all issues that biodiesel addresses better than any other heavy duty fuel currently available.

Policy initiatives aimed at providing incentives for increased renewable fuel use have shown great promise in the United States and Europe. The United States desperately needs a more diversified energy portfolio, and we encourage the committee to consider biodiesel as an important part of its comprehensive energy strategy.

STATEMENT OF BOB DINNEEN, PRESIDENT AND CEO, RENEWABLE FUELS ASSOCIATION

Mr. Chairman and members of the committee, today's hearing on proposals to increase renewable fuel consumption is extremely timely. Crude oil prices are rising, driven by concerns over the conflict in Iraq and continued political unrest in Venezuela. At the same time, gasoline output is down, in part, because refiners have responded to increased demand for heating oil. Consequently, the need for an energy policy that reduces our nation's dependence on foreign sources of energy by increasing the production and use of domestic fuels such as ethanol and biodiesel has never been greater. I commend the chairman for convening today's hearing, and for his leadership on promoting opportunities for increased production and use of domestic ethanol.

The Renewable Fuels Association is the national trade association for the domestic ethanol industry. Our membership includes ethanol producers and suppliers, gasoline marketers, agricultural organizations and State agencies dedicated to the expanded production and use of fuel ethanol. The U.S. ethanol industry consists of 69 production facilities located in 20 States with an annual production capacity of 2.75 billion gallons. Production capacity continues to expand, particularly among farmer owned cooperatives, the fastest growing segment of our industry. Thus, the U.S. ethanol industry and farmers across the country stand ready to contribute more meaningfully to our growing energy needs.

The Need for a Comprehensive Energy Policy

The war in Iraq, coupled with political upheaval in Venezuela, has focused renewed attention on the need for a comprehensive national energy policy that ensures a reliable fuel supply. As you know, the U.S. currently imports more than 57 percent of our oil, and our imports are predicted to grow to 68 percent by 2025. At the same time, we rely increasingly on our energy supplies from unstable regions of the world, including Iraq. In fact, last year we imported 450,000 barrels of oil per day from Iraq! In addition, the war on terrorism has renewed interest in reducing energy imports and diversifying the energy sector.

In testimony before Congress, R. James Woolsey, former Director, Central Intelligence, said, "We have to realize that our fuel distribution . . . systems are almost certainly going to come under attack in some way. Their high degree of centralization and their fragility to terrorist attack is a serious matter. One thing we have to be looking at is how to decentralize and how to make more flexible and less frag-

ile our energy distribution networks. It means local production of renewable fuels . . . rather than relying on imports and central fuel stations."

President George Bush has recognized the contribution American agriculture can make to provide a more reliable fuel supply through the production of domestic liquid fuels such as ethanol and biodiesel. In calling for the Congress to pass an energy bill last fall, President Bush said, "We need an energy bill in America. An energy bill that enhances renewables like ethanol. An energy bill that makes us less dependent on foreign sources of crude oil."

Deputy Secretary of Energy Kyle McSlarrow echoed the Administration's support for expanded use of ethanol in the U.S. fuel supply in recent testimony before the House Energy and Commerce Subcommittee on Energy and Air Quality. Among the eight goals the Administration feels should guide the energy debate, McSlarrow stated, "the Administration strongly supports a renewable fuels standard that will increase the use of clean, domestically produced renewable fuels, especially ethanol, which will improve the Nation's energy security, farm economy, and environment."

The increased use of renewable fuels will expand U.S. fuel supplies. Ethanol and biodiesel are blended with gasoline and diesel after the refining process. Thus, the increased use of these fuels adds directly to domestic fuel supplies. Blending 10 percent ethanol in a gallon of gasoline provides an additional 10 percent volume to the transportation fuel market.

2002 Record Year for U.S. Ethanol Industry

The U.S. ethanol industry has been a responsible partner in the fuels marketplace, increasing production capacity to meet the growing demand for ethanol created by State and Federal law. In 2002, the U.S. ethanol industry set records in production, production capacity, and number of new facilities. Twelve new state-of-the-art production facilities were completed in 2002; and with expansions at existing plants completed, the industry produced more ethanol in 2002 than at any time in its history—2.13 billion gallons.

Last year's record production represents a 20-percent increase over 2001 and a 45-percent increase since 1999. This record-breaking production is continuing this year. In January, the industry set an all-time monthly production record of 177,000 barrels per day, representing a 31-percent increase over last January's production.

But the industry is not done yet. There are another 11 ethanol production facilities totaling more than 500 million gallons of capacity currently under construction, which will increase ethanol production capacity to more than 3 billion gallons by the end of this year. At current production rates, the industry will produce a record 2.8 billion gallons of ethanol in 2003.

Ethanol is the third largest and fastest growing market for U.S. corn. In 2002, over 800 million bushels of corn were processed into ethanol and valuable feed co-products, boosting corn prices by 30–40 cents per bushel nationally. The U.S. Department of Agriculture estimates that the ethanol industry will process as much as one billion bushels of corn this year, approximately 10 percent of the national crop. Additionally, ethanol is the second-largest user of grain sorghum. More than 45 million bushels of grain sorghum were used in ethanol production in 2002.

The recent growth in ethanol plant construction has been led by farmers seeking to capture new value-added markets for the commodities they grow. Since 1999, farmer-owned ethanol facilities have increased their percentage of total production capacity to more than 30 percent. Today, farmers own 29 of the 69 plants in operation. Eight of the 11 plants under construction are farmer-owned. With this new production, taken together farmer-owned ethanol plants will be the single largest ethanol producer in the country.

Ethanol production facilities represent local economic engines throughout rural America, creating jobs, investment opportunities, value-added markets for farmers, and increased local tax revenue. A recent study found that an average 40 million gallon facility would have the following positive economic impact on the local community in which it is located:

- Provide a one-time boost of $142 million to the local economy during construction;
- Expand the local economic base of the community by $110.2 million each year through the direct spending of $56 million;
- Create 41 full-time jobs at the plant and a total of 694 jobs throughout the entire economy;
- Increase the local price of corn by an average of 5–10 cents per bushel, adding significantly to farm income in the general area surrounding the plant;
- Increase household income for the community by $19.6 million annually; and,
- Boost State and local sales tax receipts by an average of $1.2 million (varies depending on local rates).

Rising Ethanol Demand

The tremendous growth in ethanol demand over the last several years is a direct response to State efforts to reduce the use of MTBE. To date, 16 States have acted to phase-out the use of MTBE, and the ethanol industry has acted responsibly to build additional capacity so that refiners could continue to supply consumers with competitive fuels that meet Federal Clean Air Act requirements. Without commenting on whether such State actions are justified, between 3.5 and 4.5 billion gallons of ethanol would be needed to replace MTBE, depending on how new EPA regulations implementing the 8-hour ozone standard impact State decisions to opt into the RFG program.

The U.S. ethanol industry has proven it can supply such demand, if necessary.

In California, most major refiners have voluntarily switched to ethanol 1 year ahead of schedule. With the transition two-thirds complete, the results can only be described as seamless. There have been no ethanol shortages, transportation delays or logistical problems associated with the increased use of ethanol in the State. Today, approximately 65 percent of all California gasoline is blended with ethanol, and it is estimated that 80 percent of the fuel will contain ethanol by this summer. As a result, while there was only about 100 million gallons of ethanol being used in the State last year, California refiners will use between 600–700 million gallons of ethanol in 2003.

Concerns about ethanol supply, transportation and logistics have been successfully answered. Pat Perez, manager of the California Energy Commission's (CEC) Transportation Fuel Supply and Demand Office, said recently the transition to ethanol is "progressing without significant problems." Furthermore, CEC spokesman Rob Schlichting told the San Jose Mercury News in a February 27 article that the substitution of ethanol for MTBE in California has not added to recent retail price increases "because ethanol is more plentiful than previously expected and cheaper than gas."

With the transition to ethanol in California nearly complete, the focus turns to the Northeast. Connecticut is currently scheduled to phase-out MTBE use by October 1, 2003, followed by the State of New York beginning January 1, 2004. As in California, the U.S. ethanol industry is committed to supplying customers there, if necessary, also.

The use of ethanol is not new to Connecticut or New York and ethanol is indeed currently being blended in both States. At our National Ethanol Conference in Scottsdale, Arizona, February 19, Paul Stendardi of Getty Petroleum Marketing spoke of the ethanol blending that is currently occurring in the Northeast. Specifically, Stendardi said, "We've been blending with ethanol longer than 12 years. Right now we blend in Providence, Rhode Island, New Haven, Connecticut, Albany, New York, Newark, New Jersey and Paulsboro, New Jersey. We take the ethanol into Providence by rail. We truck it down to New Haven. And we take the ethanol into Paulsboro and Newark by water. And it's railed into Albany, New York." Blending ethanol is common practice throughout the country and logistics for converting terminals is very straightforward.

In addition to the ethanol blending currently occurring in the Northeast, California's successful transition to ethanol should give East Coast policymakers confidence that ethanol can be used to satisfy the Clean Air Act oxygenate requirement in a smooth and orderly fashion. In fact, the Northeast is even better equipped for the transition to ethanol than California as the Northeast draws from a wider variety of fuel supply sources including the Gulf, Mid Atlantic and off-shore refineries. This diversity of fuel supply options will help keep a competitive and steady supply of fuel components coming into the region.

Fuels Security Act of 2003

The U.S. ethanol industry has clearly demonstrated it can continue to provide refiners with adequate supplies to meet current Clean Air Act requirements, even as States take action limiting the use of MTBE. But we have heard the requests of our customers for greater flexibility in meeting those standards, i.e., eliminating the Federal RFG oxygen content requirement. Consequently, we have worked for more than a year to develop a consensus proposal that addresses the concerns of a number of stakeholders, including environmental and water quality officials apprehensive about MTBE, petroleum companies appealing for greater flexibility, and ethanol producers expanding to meet the increased demand created by current Federal and State laws.

The result of this collaborative effort was legislation overwhelmingly approved by the U.S. Senate during consideration of the energy bill last year, and recently reintroduced as the Fuels Security Act of 2003 in the Senate, S. 385, and H.R. 837

in the House of Representatives. We continue to support this important legislation, and appreciate the chairman's support as an original co-sponsor of S. 385.

The Fuels Security Act of 2003 provides a Federal resolution to persistent concerns related to MTBE, avoiding a patchwork of State actions that complicate the fuel distribution system. It maintains the existing clean air benefits of Federal RFG with strong anti-backsliding provisions. It provides refiners with the flexibility they have sought in meeting Clean Air Act requirements by eliminating the Federal RFG oxygen standard. And it provides some marketplace certainty to farmers and ethanol producers that have acted responsibly to meet the demand created by current law.

Renewable, domestically produced fuels can and should play a larger role in meeting our nation's energy needs. Creating a Renewable Fuels Standard (RFS) in which a small percentage of our nation's fuel supply is provided by renewable, domestic fuels such as ethanol and biodiesel provides a positive roadmap for reducing consumer fuel prices, increasing energy security, and stimulating rural economies by harnessing America's renewable energy potential.

The RFS included in the Fuels Security Act of 2003 boosts the demand for renewable fuels such as ethanol and biodiesel to 5 billion gallons by 2012. A recent analysis by the U.S. Department of Energy, "Infrastructure Requirements for an Expanded Fuel Ethanol Industry," concludes, "no major infrastructure barriers exist" to expanding the U.S. ethanol industry to 5 billion gallons per year. This is because credit banking and trading provisions included in the bill maximize refiner flexibility. The bill does not require that any renewable fuels be used in any particular area, allowing refiners to use these fuels in those areas where it is most cost-effective. Moreover, there are several provisions allowing the requirement to be adjusted or eliminated if price or supply problems occur. Small refiners are exempted from the RFS for several years, allowing those companies an easier transition to the program. Finally, recognizing that MTBE producers made investments in reliance upon a Federal mandate, the bill provides significant transition assistance to MTBE producers.

The Fuels Security Act of 2003 is a comprehensive approach to a myriad of fuels issues that has generated broad support from several previously competing interests. It protects the environment while providing refiner flexibility and marketplace certainty to farmers. Given the tremendous growth the U.S. ethanol has been required to commence in order to be prepared in case the Fuels Security Act of 2003 is not passed, however, a more accelerated RFS schedule is warranted. In fact, as domestic ethanol production capacity has outpaced RFS demand in the first several years of the program, new ethanol production would not be needed until 2007 under S. 385. In the meantime, ethanol plants built in anticipation of current law would likely shut down. To avoid penalizing farmers that have built ethanol production capacity to meet the requirements of current law, legislation implementing the fuels agreement in the 108th Congress must include a more accelerated RFS schedule than was included in the Senate energy bill last year.

Conclusion

Mr. Chairman, I thank you again for your tremendous leadership in advancing an energy policy that recognizes the important contribution that can be made to our nation's energy demands by renewable fuels such as ethanol and biodiesel. The need for a comprehensive energy policy that ensures a reliable fuel supply for our Nation has never been greater. America's economic prosperity and national security depend on the availability of reliable, affordable energy. Therefore, increasing the production of domestic fuels and diversifying our energy infrastructure are critical components of energy policy legislation. Providing for an expanded role for domestic, renewable fuels such as ethanol in the U.S. fuels marketplace is vital if we are to reduce our dangerous dependence on imported energy.

Thank you.

"Ethanol and the Local Community," John Urbanchuk, AUS Consultants and Jeff Kapell, SJH & Company, June 2002.

STATEMENT OF THE NATIONAL ASSOCIATION OF CONVENIENCE STORES AND THE SOCIETY OF INDEPENDENT GASOLINE MARKETERS OF AMERICA

I. Introduction

The National Association of Convenience Stores ("NACS") and the Society of Independent Gasoline Marketers of America ("SIGMA") respectfully submit this statement to the Senate Committee on Environment and Public Works on the occasion of the subcommittee's hearing on a possible fuels title to the national energy policy

legislation. NACS and SIGMA request that this statement be made an official part of the record of this hearing.

II. The Associations

NACS is an international trade association comprised of more than 1,700 retail member companies operating more than 100,000 stores. The convenience store industry as a whole sold 124.4 billion gallons of motor fuel in 2001 and employs 1.4 million workers across the Nation.

SIGMA is an association of more than 270 independent gasoline marketers operating in all 50 States. Last year, SIGMA members sold more than 48 billion gallons of motor fuel, representing more than 30 percent of all motor fuels sold in the United States in 2002. SIGMA members supply more than 28,000 retail outlets across the Nation and employ more than 270,000 workers nationwide.

III. Focus on Motorists

This statement will focus on one simple message. As this subcommittee, and this Congress, debates national motor fuel policy, NACS and SIGMA urge you to consider the impact this legislation will have on NACS and SIGMA members' customers—your constituents.

The average motorist does not know or care whether gasoline contains MTBE or ethanol; they simply want competitively priced gasoline and diesel fuel to power their automobiles and trucks. In general, motorists favor environmentally friendly fuels, and favor strong environmental protections to assure that the use of motor fuels does not harm air quality and does not pollute our nation's water supplies.

These motorists' interests are closely matched by the interest of independent motor fuel marketers. NACS and SIGMA member companies sell motor fuels, but for the most part, we do not make either the gasoline or the diesel fuel we sell. Consequently, from a business perspective, an independent marketer has little interest in what its refiner-supplier puts into these products, be it ethanol or MTBE. Independent marketers' primary concern is supply. Our customers, and therefore our companies, benefit from plentiful supplies of gasoline and diesel fuel from diverse sources, thereby assuring a competitive marketplace for motor fuel. Furthermore, like our customers, we also support the production of motor fuels that do not harm air quality and the strong and effective enforcement of regulations to prevent petroleum releases from underground storage tanks. We support these issues for the benefit of our communities as well as for the benefit of our business.

Therefore, as you consider a fuels title to national energy policy legislation this year, we strongly urge you to keep in mind the interests of your constituents, and our customers, the motoring public. NACS and SIGMA believe that this subcommittee will have served its constituents well if it puts aside special interest pressures and instead develops energy policy legislation that focuses on expanding overall motor fuel supplies, easing the pressures on the motor fuel distribution system, and reducing motor fuel price volatility.

IV. Key Components of Fuels Legislation

For these reasons, NACS and SIGMA strongly support efforts in Congress to adopt national energy policy legislation in 2003. To accomplish these objectives, we urge this subcommittee to include, at a minimum, the following core provisions in the motor fuels title of a 2003 energy bill.

First, we support the repeal of the reformulated gasoline ("RFG") program's oxygenate mandate contained in Section 211(k) of the Clean Air Act. Numerous studies have concluded that oxygenates, including MTBE and ethanol, are not necessary for the production of clean-burning gasoline. The oxygenate mandate is not environmental protection; rather, it is political protection for the MTBE and ethanol industries and should be repealed. Doing so will enhance the ability of America's refiners to efficiently produce gasoline for America's consumers.

Second, we support an orderly phase-out of MTBE as a gasoline additive in a manner that does not impact overall gasoline supplies negatively. The contamination of groundwater supplies by MTBE has been documented widely. To address this problem, NACS and SIGMA support a nation-wide phase-out of MTBE over a period of years Doing this at the Federal level will avoid the further segmentation of the market as individual States proceed with their own bans. A phase-out over several years will permit the orderly transition from MTBE to other fuel components and mitigate the impact on overall gasoline supplies. In addition, we also strongly support increased enforcement of Federal petroleum underground storage tank laws to help prevent any future petroleum releases. We will return to this subject later.

Third, we support the adoption of legislative provisions to slow, and ultimately reverse, the "balkanization" of the gasoline and diesel fuel markets into islands of "boutique" motor fuels. Twenty years ago, our Nation had the most efficient fuel dis-

tribution system in the world. Today, with the proliferation of boutique fuels, the distribution system is under constant stress which has led to spot supply shortages, wholesale and retail price volatility, and consumer complaints. Congress must tackle this important issue in order to improve gasoline and diesel fuel supply and reduce price volatility. Any Federal initiative that does not substantially restore fungibility to the motor fuel supply and distribution system will only contribute to the continued supply dislocation and price volatility witnessed over the past several years.

V. Consideration of an Ethanol Mandate

During the consideration of energy policy legislation last year, there was spirited debate over the proposed adoption of a mandate to include ethanol in much of the nation's gasoline. NACS and SIGMA strongly opposed, and continue to oppose, an ethanol mandate. We simply cannot support a provision to replace one mandate—the oxygenate mandate—with another—an ethanol mandate.

The details of this issue have been debated for several years as representatives of the ethanol industry and the MTBE industry have competed for Federal market support. NACS and SIGMA are not concerned with the rivalry between these two industries, but we are very concerned about the impact the proposed resolution could have on consumers.

The ethanol mandate proposed last Congress places the motor fuels market in serious jeopardy. Our central concern is the delivery of product to all markets throughout the country in a cost-efficient manner. Because ethanol is predominantly a regionally produced product, it must be shipped from its Midwest-production facilities to all markets. The problem is that our pipeline system cannot transport the product. This forces the market to rely on rail and truck deliveries, a much more expensive method of liquid product transport. In addition, it adds yet another level of potential disruption to the system. These factors alone could lead to increased regional supply shortages and even greater price volatility.

NACS and SIGMA do not oppose increased market opportunities for ethanol; in fact, our members are the leading retailers of ethanol-blended gasoline. However, we believe it would be a mistake for the Federal Government to mandate its use on a national basis.

NACS and SIGMA recognize, however, that there is substantial political support in the House and Senate for the adoption of an ethanol mandate. Therefore, if Congress is intent on adopting a renewable fuels standard ("RFS") as part of an energy bill, we urge that the following modifications be made to the fuels title offered by the House to the Senate last fall. These suggested modifications will benefit overall gasoline supplies and environmental protection, reduce the number of boutique fuels, maintain the competitive position of independent marketers, and ease the introduction of the RFS.

VI. Commingling of Divergent Compliant Fuels

First, Congress should adopt a legislative provision to permit the commingling of divergent compliant fuels. Currently, EPA regulations specifically prohibit the blending of ethanol-additized RFG with MTBE-additized RFG during much of the year. In addition, the regulations generally prohibit the blending of any two compliant fuels if the resulting mixture would have a higher RVP (generated by the presence of ethanol) than allowed in a specific market. These prohibitions balkanize the gasoline markets and increase supply shortages during market disruptions, while having little or no environmental benefit. Furthermore, the requirements make it considerably more difficult for a marketer to proactively sell ethanol-blended gasoline. There are a couple of scenarios that last year's proposed fuels title would create that could be improved by allowing the commingling of compliant fuels.

If the oxygenate requirement is repealed, MTBE is banned, and an ethanol mandate is created, there will be at least two primary varieties of reformulated gasoline sold across the nation-oxygenated gasoline with ethanol and non-oxygenated gasoline. Existing regulations would permit the blending of these fuels in the tanks of motorists' cars, but not in the underground storage tanks ("USTs") of gasoline marketers. This limitation will impair the ability of marketers to efficiently sell RFG and will make it more difficult for marketers to offer ethanol-blended RFG to their customers.

Another complication raised by the implementation of the ethanol mandate is the loss of fungibility for conventional fuel. Currently, many States and localities impose volatility controls on gasoline to control for pollution. Ethanol-blended conventional gasoline is afforded a one-pound volatility waiver to accommodate for the increased volatility contributed by the ethanol. However, if marketers begin selling ethanol-blended conventional and non-ethanol blended conventional, the mixture of the two products will result in non-compliant product.

In both conventional and RFG markets, therefore, a marketer must drain his storage tank in order to sell ethanol-blended product. If that same mixture is not available at a later date, the marketer would again be forced to drain his tank in order to refill it with non-ethanol product. This places an undue burden on the marketer by hindering his ability to provide uninterrupted service to his customers and will cause temporary supply shortages at certain retail outlets. Permitting the blending, or commingling, of these fuels in marketers' USTs will increase marketer flexibility to respond to shortages of one fuel or another, will reduce price volatility caused by such shortages, and will reduce stresses on the gasoline distribution system.

Some may argue that allowing a marketer to commingle products will increase the environmental impact. NACS and SIGMA submit that any impact on the environment is likely to be minimal and will be far outweighed by the benefits to supply and price stability. Even today, divergent compliant fuels are being commingled in consumer's gasoline tanks throughout the country. It will be rare that a marketer will be forced to commingle product in his tank, certainly less frequently than a consumer will fill his or her vehicle with divergent product. In fact, most of America's gasoline retailers are branded marketers, locked into supply contracts, who will not be faced with this situation except in extreme supply situations. Unbranded marketers, which comprise approximately 30 percent of the market, are also unlikely to switch terminal suppliers except in tight market conditions. The provision NACS and SIGMA are advocating will simply provide extra flexibility to avoid unnecessary market disruptions and price spikes when these market conditions develop.

VII. Underground Storage Tank Reform

Second, Congress should adopt comprehensive Federal leaking underground storage tank ("LUST") program reforms. Last year's House and Senate energy bills both contained modest provisions on UST reform. NACS and SIGMA urge that these provisions be expanded to accomplish comprehensive UST reform. The full Environment and Public Works Committee recently approved unanimously S. 195, Senator Chafee's UST reform bill. In addition, this House Subcommittee on Environment and Hazardous Materials Subcommittee is considering similar legislation.

This year's energy bill should not contain half-measures on UST reform. Whether the issue is full enforcement of existing UST rules, preventing future MTBE leaks, or providing States with more funding for their UST enforcement and remediation programs, comprehensive UST reform legislation should be an integral part of a 2003 energy bill and, at the very least, must not be compromised by the enactment of half-measures.

VIII. Seasonal Variation Protection for RFS

Third, the Senate's 2002 RFS proposal required the use of ethanol throughout the year. This provision should be deleted. Use of ethanol during the summer months will require refiners to produce sub-RVP blendstocks, further reducing the overall supply of gasoline, create spot shortages, and promote retail and wholesale gasoline price volatility. If Congress is intent on mandating the use of ethanol in gasoline, then Congress should permit industry to meet that goal in the most cost-effective manner that causes the least disruption to gasoline supplies. Mandating that a certain portion of the RFS be satisfied during the summer months runs counter to this goal.

IX. Credit and Trading System

Fourth, NACS and SIGMA are concerned deeply about the proposed RFS credit and trading system contained in the 2002 Senate energy bill fuels title. Given the concentration of market power in the gasoline refining and ethanol production industries, there is cause for concern that some parties may attempt to "hoard" RFS credits in order to disadvantage their competitors. For example, if a Mid-West refiner with national marketing interests uses more ethanol than it needs for compliance and generates RFS credits, what incentive would that refiner have to sell these credits at a reasonable, competitive rate to an East or West Coast refiner that is a competitor? If that East or West Coast refiner cannot physically obtain ethanol or locate affordable RFS credits, it will be in violation of the RFS program.

NACS and SIGMA urge this subcommittee to consider the adoption of a provision to incentivize refiners who are "long" on RFS credits to tender these credits to other refiners at a reasonable price. One solution might be to penalize refiners that are "long" on RFS credits in the same way refiners that are "short" on credits are to be penalized if there is unmet demand for RFS credits in the marketplace. Whatever solution Congress arrives at, assuring a competitive and open market for RFS credits must be examined.

X. Other Issues

Many other issues are under consideration with respect to a fuels title in an 2003 energy bill. NACS and SIGMA have adopted the following positions on several of these additional issues.

First, independent marketers support the adoption of a provision to shield MTBE users, manufacturers, and refiners from product liability claims that MTBE is a defective product. The 2002 Senate energy bill contained such protection for ethanol producers. Such protection should be afforded to MTBE, as provided in the House counter-offer. It must be noted that such liability protection will not shield marketers from potential liability for MTBE releases—which generally is governed by negligence law. Instead, this provision would simply move MTBE release claims out of the product liability area of law.

Second, NACS and SIGMA support strongly a Federal solution to address the problems associated with the proliferation of boutique fuels. To date, virtually all stakeholders have criticized the balkanization of the motor fuels markets, but there have been no studies completed to provide policy recommendations to halt, or reserve, the introduction of boutique fuels. Last year, both the Senate and the House included a provision in the energy bill requiring a Federal study into this issue. We continue to support a Federal assessment of the problem. However, the timing of such a study will not serve to assist this subcommittee in developing a national energy policy.

The National Association of Convenience Stores has commissioned a study into this very subject that will be completed next month, in April 2003. This study is taking an in-depth look into the current market conditions generated by today's overlapping Federal, State and local fuel regulations and is assessing the impact of potential changes to these regulations on overall fuel supplies, product fungibility, cost and environmental impact. NACS looks forward to sharing the results of this study with this subcommittee as soon as it is available and we hope that it will prove a useful tool as you work to complete an energy bill this Congress.

XI. Conclusion

Mr. Chairman, members of the subcommittee, thank you for this opportunity to comment on America's national energy policy. NACS and SIGMA appreciate the chance to share our concerns and recommendations with you as you prepare a new energy bill. We hope to have provided some insight into the impact certain policies will have on the petroleum marketplace and some provisions that could help mitigate those impacts. We look forward to working with the members of this subcommittee to craft energy policy legislation that meets the goals outlined in this testimony.

STATEMENT OF THE NATIONAL ASSOCIATION OF CONVENIENCE STORES, SOCIETY OF INDEPENDENT GASOLINE MARKETERS OF AMERICA

I. The Issue

Over the past 25 years, the gasoline and diesel fuel distribution markets have become increasingly "balkanized" through the introduction of myriad "boutique" fuels designed to address air quality concerns. In 1980, the Nation sold basically two different types of gasoline and one type of diesel fuel. In 2003, there are dozens of "boutique" gasolines mandated across the Nation and the markets for diesel fuel will become even more fragmented with the mandates for ultra low sulfur formulations that take effect in 2006.

Most of the time, the motor fuels refining and distribution systems do an excellent job making sure that sufficient quantities of these boutique fuels are available in the right locations at the right time of year. Despite the significant strains these boutique fuels place on the motor fuel distribution system on a daily basis, the system, as EPA's Staff White Paper on Boutique Fuels States, "is able to provide adequate quantities of boutique fuels, as long as there are no disruptions in the supply chain."

However, as the EPA report notes, any disruption in the system—from a refinery accident to a pipeline spill to a natural disaster—can cause significant supply disruptions and increased price volatility. Different parts of the Nation have experienced these shortages and price volatility repeatedly over the past decade.

II. A First Step Toward A Solution

NACS and SIGMA have repeatedly urged Congress to address the issue of the proliferation of boutique fuels during the debate over national energy policy legislation. While a comprehensive solution to the boutique fuels problem has thus far

eluded policymakers, there is an intermediate step that Congress can take to reduce balkanization, improve fungibility, increase overall supplies, and reduce price volatility.

This intermediate step would permit the commingling of different compliant gasolines, including ethanol-and non-ethanol blended gasolines, in the underground storage tanks of retailers.

III. Current Regulation of Commingling

The Clean Air Act does not address the issue of gasoline commingling directly. Instead, EPA, as part of its regulations implementing Section 211(k) of the Act, prohibits the commingling of reformulated gasoline (RFG) blended with MTBE with RFG blended with ethanol by anyone other than the consumer when that gasoline is going to be consumed during the summer months of the year. EPA adopted this restriction because the blending of ethanol-RFG with MTBE-RFG results in increased gasoline volatility, which can lead to increased emissions.

In addition to this prohibition, it is also true that the blending of ethanol-blended conventional fuel with non-ethanol blended conventional fuel can lead to increased emissions due to the increased volatility contributed by the presence of ethanol. Volatility controlled conventional markets, therefore, pose a similar challenge to supply fungibility as do RFG markets.

EPA's restriction, however, does not apply to a consumer, who is free to shop at any retail gasoline station he or she chooses. This consumer often commingles different compliant products in the tank of his or her motor vehicle due to his or her selection of different retailers. Thus, the widespread commingling of gasolines is occurring already—EPA has simply chosen arbitrarily to ignore the commingling by consumers and to prohibit it for retailers. With the implementation of a renewable fuels standard, and the introduction in markets throughout the Nation of ethanol- and non-ethanol-blended gasolines, the frequency with which this consumer commingle occurs will increase significantly.

IV. Issues Associated with Commingling

A. Enforcement

Currently, gasoline quality is regulated at the retail dispenser nozzle. To permit commingling of gasolines by retailers, enforcement of quality regulations would be moved above the retail tank, to the trucks delivering gasoline to the retail stations. As long as all of the gasoline delivered into a retailer's tank complies with EPA standards, then the gasoline in the tank shall be deemed to comply with the EPA standards.

B. Air Quality

While the commingling of ethanol-and non-ethanol-blended gasolines results in a slight increase in fuel volatility, this commingling proposal will have little or no adverse impact on air quality. Approximately 70 percent of the nation's retail gasoline outlets are branded under the name of a major refiner, and are unlikely the take advantage of this commingling flexibility because of the steady source of supply that major refiners can provide. Other than during times of severe supply dislocations, when branded marketers might be forced to take advantage of the commingling flexibility, commingling will be used primarily by unbranded, or privately branded, independent gasoline marketers that purchase gasoline from multiple suppliers. These marketers are not significant players in most large urban areas, where air pollution can be a problem. Therefore, the air quality impact of this commingling proposal will be minimal.

Further, it is much more likely that a motorist will commingle gasolines in his or her vehicle tank than it is that a retailer will commingle gasolines in his or her retail tanks. Most retailers have a relatively stable source of supply and will commingle only during periods of supply shortages or disruptions. Motorists, on the other hand, frequently purchase gasoline from different retailers—resulting in the frequent commingling of ethanol-and non-ethanol-blended gasolines.

C. Surveys

Commingling flexibility should not be permitted to disrupt the gasoline quality surveys undertaken by EPA. If the gasoline in a retailer's tank is found out of compliance during a survey test, that non-compliant sample would be discarded if the retailer can prove through delivery documentation that all gasoline delivered to that retail outlet was tested and found in compliance. By discarding these commingling samples, survey results will not be skewed and will not impact negatively an area's compliance efforts.

D. SIPs

EPA's current model ignores the commingling that takes place in a motorist's vehicle when determining the amount of "credit" for emissions reductions a State will receive in its SIP if it adopts RFG as a control program. A legislative proposal to authorize commingling in a retailer's tank must provide States with the same SIP credit for adopting RFG. Otherwise, a State would be disadvantaged in its attainment efforts.

E. Supply and Fungibility

This commingling proposal will significantly increase gasoline fungibility and will in effect increase overall gasoline supplies. This is true because it will ease some of the restrictions on segregating different fuels and permit retailers to seek supplies for their customers at the lowest price. This flexibility will reduce balkanization, reduce gasoline supply disruptions, reduce wholesale and retail price volatility, and expand the sources of supply many retailers can access.

NACS and SIGMA strongly urge Congress to adopt a legislative provision to permit commingling as part of its national energy policy legislation in 2003.

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