Summary of Statement of Bob Greco
API Group Director, Downstream and Industry Operations
Before the House Energy and Commerce Subcommittee
On Energy and Air Quality

May 8, 2007

API supports a realistic and workable renewable fuels standard (RFS). Our industry is the nation's largest user of ethanol and is increasing the volume of renewable fuels in America's transportation fuel portfolio. The industry significantly exceeded the 2006 RFS requirement of 4 billion gallons of renewables, and according to Energy Information Administration (EIA) estimates, should exceed the 2007 requirement as well.

Looking ahead, we need to develop all economically viable energy sources including fossil and renewable fuel sources. By relying, to the greatest extent possible, on market forces, understanding consumer impact and preferences, encouraging development of new technologies, and addressing secondary impacts of expanded renewable fuel usage, our industry and the nation will meet the energy challenges in the years ahead.

The most economical and practical use of ethanol is as a 10 percent blend in gasoline, which should be maximized before considering more broadly higher ethanol blends. It requires no modifications to vehicles, no major changes to service station pumps and storage tanks, and has a long history of successful fuel use by consumers.

E-85, a transportation fuel containing 85 percent ethanol and 15 percent gasoline, is an alternative fuel that faces significant technological and economic hurdles. E-85 requires specially built "flexible fuel vehicles" (FFVs) which currently comprise only 3 percent of the existing vehicle fleet. EIA estimates that FFV penetration will not rise above 10 percent until sometime after 2030.

API offers these specific comments concerning possible biofuels legislation that may be considered by the Subcommittee, including proposals to expand the Renewable Fuels Standard:

Restrictions on federal requirements in EPACT should continue. A federal alternative or renewable fuels mandate should not have a per-gallon requirement; require any particular alternative fuel to be used to meet a mandate; require an alternative fuel to be used in any particular geographic area; or require an alternative fuel to be made from particular feedstocks or restrict the use of any feedstock or processing scheme.

States (and their political subdivisions) should be preempted from setting state alternative or renewable fuel mandates. In addition, EPA should be provided with additional authority to grant temporary waivers during supply emergencies.

Lastly, any mandates for increased alternative or renewable fuel usage should be accompanied by periodic technology/feasibility reviews that would allow for appropriate adjustments to ensure that energy companies and consumers are not penalized due to the economic and technical hurdles that might prevent reaching alternative or biofuels usage targets or goals.

Statement of Bob Greco, API Group Director, Downstream and Industry Operations, before the House Energy and Commerce Subcommittee on Energy and Air Quality

May 8, 2007

I am Bob Greco, Group Director of Downstream and Industry Operations of API, the national trade association of the U.S. oil and natural gas industry. API represents more than 400 companies involved in all aspects of the oil and natural gas industry, including exploration and production, refining, marketing and transportation, as well as the service companies that support our industry.

API welcomes this opportunity to present the industry's views on renewable fuels and proposals to expand the Renewable Fuels Standard (RFS) and renewable fuels use. However, before I address these issues, I will briefly present the industry's views on another issue of direct concern to your Subcommittee, climate change.

Our industry acknowledges that climate change is a very important global issue. The people of America's oil and natural gas industry are working to improve energy efficiency and thus help curb greenhouse gas emissions today and to develop the technologies to help curb emissions further in the future.

While API supports voluntary, technology-based approaches – which have produced substantial progress towards addressing greenhouse gas emissions – API nonetheless

believes that all stakeholders should remain open-minded, and that all policies to address climate change should be carefully considered in a public, transparent and informed debate.

API believes that any climate change policy should:

- Be environmentally effective;
- Promote advanced, energy-efficient technologies and sequestration options as part of a long-term, cost-effective strategy, without government selection of "winners and losers";
- Promote a positive investment environment that allows for rapid development and deployment of energy-efficient and emission-reduction technology;
- Equitably treat the emissions from all sources of greenhouse gases economy-wide;
- Carefully weigh the potential consequences of any policy that would make energy producers responsible for emissions outside their control (i.e., consumer emissions);
- Provide access to all domestic energy sources, including natural gas which will face increased demand;
- Be transparent and understandable to consumers and all stakeholders;
- Support economic growth and avoid damage to the economy posed by ineffective policies involving unrealistic near-term emission targets and timetables;
- Promote adoption of advanced, energy-efficient technologies in the developing world, while protecting property rights;

- Promote global participation, including by developing countries, to address this challenge cost-effectively; and
- Keep U.S. energy production competitive in the global marketplace.

Even as research and policy debates continue, our member companies are addressing climate change in diverse ways and investing considerable resources into low- and zero-emission technologies. In 2002, under the federal government's Climate Vision program, API members pledged to improve energy efficiency in their refineries by 10 percent in 10 years. We are five years into the "10 in 10" program and our members are on track to meet that goal. The energy saved in 2004 alone was equivalent to taking more than 350,000 vehicles off the road, or the electricity for more than 710,000 homes.

We also support increased public education by both the federal government and the private sector on all aspects of policies to address climate change, including the importance for all stakeholders and the public to use energy as efficiently as possible.

Let me turn now to renewable fuels. For centuries, energy and food have been the engines that have raised mankind from poverty, particularly in the developing world. To give a family food, warmth, mobility, and a job is to progress toward a more stable world and to nurture an improving standard of living for every man, woman and child.

The International Energy Agency forecasts that world-wide energy demand will increase by 50 percent between now and 2030. For those of us involved in the energy business for

well over a century, one stark conclusion flowing from this forecast stands out – our world, and our nation, will need all commercially viable energy sources for decades into the future, including both fossil and alternative energy sources.

Our companies have long been pioneers in developing alternatives and expanding our use of existing sources of energy. From 2000 to 2005, the U.S. oil and natural gas industry invested an estimated $98 billion in emerging energy technologies, including renewables, frontier hydrocarbons such as shale, tar sands, and gas-to-liquids technology. This represents almost 75 percent of the total $135 billion spent on emerging technologies by all U.S. companies and the federal government. Our companies are actively investing in second generation biofuels research, such as cellulosic ethanol and biobutanol and, weekly, we hear of new and exciting approaches to expanding the use of biomass in the motor fuels markets.

Given this huge, global appetite for energy, energy security, not “energy independence,” should be our nation’s energy framework going forward. Brazil’s achievement of energy independence has been cited as a model that the U.S. should emulate. However, it is important to note that Brazil achieved energy independence through an increase in offshore oil production. Its domestic ethanol usage has not increased substantially in the last 10 years.

Today, the U.S. oil and natural gas industry provides two-thirds of all the energy consumed each year by our nation. However, we import more than 60 percent of our oil

in order to meet consumer demand. The United States must do everything it can to access a diversity of resources around the world. “Energy independence” would be at odds with this objective. For all the talk of the need to wean ourselves from Arabian Gulf oil, the fact is the amount of Arabian Gulf oil imported has been substantially unchanged for years. Our real supply security depends on international trade. Our Arabian Gulf partners provide important supply -- but they are only one source, representing less than 20 percent of total imports.

As we take steps to meet the energy needs of future generations, we must focus on three areas: meeting growing demand, improving energy efficiency and environmental performance, and developing new energy technologies.

- First, we must continue to meet our nation’s growing energy needs through diverse sources of oil and natural gas supplies both here and around the world, while alternative and renewable sources continue their rapid rates of growth;
- Second, American industry must continue to increase its energy efficiency and the American public should be encouraged to become more energy efficient; and
- Third, we must develop new technologies to find and produce increased oil and natural gas supplies, improve energy efficiency and environmental performance, and develop new economic sources of renewable energy.

The current Renewable Fuels Standard (RFS) has stimulated substantial investments to increase biofuels supplies, particularly ethanol, beyond that required to satisfy the RFS. In addition, research into advanced production methods and alternative fuels is underway.

Last year, our industry utilized 25 percent more than the target amount of ethanol established under the RFS. Additionally, nearly 50 percent of all gasoline consumed in the U.S. now includes ethanol.

Thanks to the almost seamless transition of huge amounts of ethanol into our nation's gasoline pool, ethanol is gaining broader consumer acceptance. From our experience, we know that customer acceptance is the single most important factor in the success of a product, especially a transportation fuel. It is even more essential that we maintain and build the consumer acceptance of ethanol.

In assessing policy options to further increase alternative fuels usage, reliance on market forces is the best way to satisfy our growing fuel requirements. This will ensure reliable supply and deliver the greatest value to consumers. Policies should be performance-based and provide a level playing field for all energy options, including renewable/alternative fuels. We should not favor one specific technology over another or create unsustainable or uneconomic solutions. Moreover, our policies should be feedstock neutral.

In addition, government should not over-promise on the potential of renewables to reduce petroleum demand. Overestimates create unrealistic expectations, poor policy and wasted resources. Government policy should strive to encourage sustainable and competitive second generation biofuels technologies.

The most economic and practical use of ethanol is E-10, which should be maximized before considering higher ethanol blends. This fuel is already used in many parts of the country. E-10 requires no modifications to vehicles, no major changes to service station fueling equipment and tankage, and has a long history of successful fuel use by consumers.

The existing infrastructure/distribution system should continue to expand and be utilized to the extent practicable. The industry was stretched last year in maximizing ethanol integration into the national gasoline pool, due in part to a tight wholesale delivery infrastructure, that is, the terminals and blending facilities needed for ethanol, along with rail cars and rail spurs. The growth in infrastructure must keep pace with consumer demand.

Widespread use of E-85, however, would require that the major technological and economic hurdles of cellulosic ethanol conversion first be overcome. The timing of such technological breakthroughs is highly speculative. Even with breakthroughs in cellulosic ethanol production technology, significant logistical hurdles will need to be addressed. Gathering the feedstock (biomass such as forestry waste and switch grass), processing it, disposing of “waste” products, and delivering ethanol to markets at a cost comparable to gasoline has yet to be demonstrated on a commercial-scale.

E-85 use is also constrained by a number of additional factors. Corn-based ethanol is not sustainable at levels that would support widespread use of E-85. Moreover, E-85 requires

flexible-fuel vehicles which currently comprise only 3 percent of the existing vehicle fleet. EIA estimates that the flexible fuel vehicle (FFV) share of the vehicle fleet will not rise above 10 percent until sometime after 2030. Even in 2030, new owners of FFVs, like many of the current owners, might fill up with E-10 rather than E-85.

According to EPA, FFVs get about 30 percent fewer miles per gallon when fueled with E-85 as compared to gasoline. Consumers will likely be unhappy with the mileage penalty of E-85.

E-85 also requires special service station pumps and storage tanks, which represent a significant expenditure by the nation's independent service station dealers. More than 90 percent of the 169,000 retail gasoline stations nationwide are owned or operated by independent entrepreneurs – typically small businessmen and women. They are in the best position to evaluate consumer demand for E-85 at their retail stations. They will have to determine whether to offer E-85, balancing customer demand with per-station investment and conversion costs that can range from $20,000 to over $200,000.

Currently, there are just over 1,000 retail outlets nationwide, located principally in the upper Midwest, that are equipped to distribute E-85. The number appears to be growing rapidly on its own, without any government mandate. Contrary to the false claims by some industry critics, oil companies are not preventing the installation and use of E-85 pumps and storage tanks.

Indeed, there are a number of cooperative endeavors underway between our industry and other biofuels stakeholders, including ethanol interests. Examples include:

- Our members are working with their counterparts in the biofuels and automotive industries to help ASTM International review and recommend changes to update E-85 fuel quality specifications, and also to help establish fuel quality specifications for biodiesel blends;
- Together with automakers and regulatory agencies, API and its members are working to better understand the emissions and performance characteristics of modern technology, flexible fuel vehicles (FFVs) operated on E-85 and on intermediate ethanol blends;
- API members and automobile manufacturers are jointly engaged in research to gain further insights as to the emission, drivability and materials compatibility characteristics of vehicles that have been operated on gasoline blends containing higher ethanol concentrations; and
- API has supplied information to Underwriters Laboratories, DOE, and others that provides a baseline for materials compatibility requirements to help develop the information needed for certification of E-85 dispensing equipment.

In increasing biofuels usage, the government should address secondary impacts including the impact on food supplies and the environment (for example, water use and water quality degradation, pesticide use, and increased VOC/NOx emissions).

With regard to the impact on food supplies, in an April 30, 2007 joint letter to Senate Energy and Natural Resources Committee members, the Grocery Manufacturers Association (GMA) and Food Products Association (FPA) said: "…it is important to note that the very aggressive ramp-up of the biofuels mandates proposed in S. 987 raises very basic concerns about the impact continued expansion of corn-based ethanol will have on the food industry's ability to continue to provide reliable and affordable food to the nation and other markets."

Because of the potentially widespread effects on the environment, regulatory agencies will need to develop metrics for assessing the life-cycle impacts and benefits from possible large-scale increases in biofuels use. In addition, government policy should encourage the utilization of the existing national refinery infrastructure for the co-processing of renewable feedstocks that can result in products with a renewable content compatible with the existing fuel distribution infrastructure.

State-by-state ethanol mandates create additional boutique fuels, interfering with the reliable supply of fuels during supply disruptions and increasing distribution costs. State-by-state mandates also conflict with the flexibility and efficiencies provided in EPACT05 with respect to where biofuels are supplied and product type. Just last month, for example, an eighth state passed another, different biofuels mandate. Congress recognized the potential problems from the proliferation of gasoline boutique fuels and blocked their expansion in the EPACT05. In that same legislation, the Renewable Fuels Standard

stresses maximum fuel flexibility. Congress now needs to address the newest type of boutique fuels – those required by state biofuels mandates.

Another example of restrictive state requirements is found in the Southeastern U.S., where most states fail to provide exceptions or modifications to their gasoline standards to accommodate ethanol's impact on fuel volatility. As a result, refiner/marketers face potential non-compliance with state gasoline standards if they blend ethanol with fungible conventional gasoline. Tailoring the base fuel at the refinery to assure compliance by the finished blend would reduce gasoline supplies and increase fuel cost, thereby removing any incentive to blend ethanol.

Although no one knows the precise ceiling number, at some point in the not too distant future, limits on domestic corn ethanol production will be reached. Too little attention is being paid to the transition from that point forward, especially impacts associated with a delay in mass-scale production of cellulosic ethanol volumes. There is a very limited likelihood that cellulosic technologies can begin providing sizable volumes of ethanol in five years. If Congress acts to increase the RFS despite these limits, short-term and long-term contingency provisions will be needed to avoid the potential for wasted resources and increased costs.

Thus, all mandates for increased renewable fuel usage should be accompanied by periodic technology/feasibility reviews, with appropriate lead times. These reviews would allow for proper adjustments so that energy companies and consumers are not

penalized due to the economic and technical hurdles that might prevent reaching biofuels usage targets or goals. Any mandates for increased renewable fuel usage should also include provisions that suspend requirements for increased biofuels usage in the event of significant supply or distribution disruptions.

While we have made progress over the past year, important questions remain. These must be thoroughly and responsibly addressed if we are to build on our joint progress and ultimately realize the full potential for ethanol within our nation's transportation fuels portfolio.

EPA recently finalized the regulations to implement the Renewable Fuels Standard (RFS). API welcomes the finalization of EPA's credit trading program, a key component of the RFS. The credit trading program provides sufficient flexibility for refiners and gasoline importers to meet the RFS while meeting U.S. energy needs.

We appreciate the effort that EPA made in involving all stakeholders in the development of these regulations. Flexibility in implementing the national RFS is essential in order to integrate ethanol into the nation's gasoline pool in the quickest and most effective way possible.

API also offers these comments concerning possible biofuels legislation that may be considered by the Subcommittee, including proposals to expand the RFS:

1. Restrictions on federal requirements in Energy Policy Act of 2005 (EPACT05) should continue.

- A federal alternative or renewable fuel mandate should not:
  - Have a per-gallon requirement;
  - Require any particular alternative fuel to be used to meet a mandate;
  - Require an alternative fuel to be used in any particular geographic area; and
  - Require an alternative fuel to be made from particular feedstocks or restrict the use of any feedstock or processing scheme.

2. States (and political subdivisions thereof) should be preempted from setting state alternative or renewable fuel mandates.

- There should be an explicit, complete federal preemption of states from setting standards/controls of any type for alternative fuels.
- An alternative would be to set out restrictions on the states in lieu of an explicit preemption.

3. EPA should be provided with additional authority to grant temporary waivers during supply emergencies -- EPACT05 section 1541(a)

- There should be federal (EPA) preemption of existing state fuel and ASTM performance regulations when a waiver is issued during a supply emergency. During Hurricanes Katrina and Rita, EPA waived certain federal fuel requirements promptly to increase fuel supplies. However, in many cases, state action was also required and frequently was not prompt. The result was unnecessary delays in increasing fuel

supplies. EPA should be provided with authority to waive both federal and state environmental and product quality fuel requirements during "an event of national significance" (in situations where a state adopts its own product quality regulations and situations where states adopt ASTM specifications)

- There should be emergency waiver authority for up to 90 days. The 20-day limit for waivers provided in EPACT05 is adequate for most situations but proved inadequate during Hurricanes Katrina and Rita. Thus, the timeframe for waivers should be increased to “up to 90 days” for an event of “national significance" so designated by the President. This increased time will provide much needed flexibility in terms of arranging for additional fuel supplies, particularly longer lead time product imports.
- Waiver authority should remain with the EPA Administrator. EPACT05 language should be retained so that the EPA Administrator – not the President – has authority for fuel waivers and preemption of state regulations. To change authority to the President would prevent speedy implementation of waivers, which is what was intended.
- Additional adjustments should be made to the emergency waiver language in EPACT05. EPA interpretation of the waiver language has caused some confusion and concern regarding supplying waived fuel. Several changes to the waiver language would help to correct these problems.

4. <u>Alternative fuel technology review should be required with a report to Congress and adjustment of the alternative or renewable fuel standards and phase-in schedule</u>.

- Any mandates for increased alternative or renewable fuel usage should be accompanied by periodic technology/feasibility reviews that would allow for appropriate adjustments so that energy companies and consumers are not penalized due to the economic and technical hurdles that might prevent reaching alternative or biofuels usage targets or goals.

Finally, there has been much interest recently in “low-carbon” fuel. It is important to recognize that the carbon content of gasoline can’t be reduced. Low-carbon fuels have “low” greenhouse gas emissions as compared to gasoline.

A low-carbon fuel mandate would essentially be an alternative fuel mandate. It would be the same as an advanced biofuels mandate. Compliance with such a mandate will require the development of alternative vehicles and fuels that are not yet economic, such as cellulosic ethanol, plug-in hybrids, and hydrogen fuel cells. Only cellulosic ethanol-based E-85 (not corn-based E-85) will deliver significant carbon benefits and it is uncertain when cellulosic technology will be economic.

The carbon content of a fuel will likely be measured using a life-cycle analysis. This is the approach that California plans to use. There are various estimates of GHG emissions of biofuels found in the literature. A comparison of estimates across studies reveals differences in both the magnitude and sign of emission impacts reflecting the significant uncertainty that exists in the estimates as well as differing assumptions employed in the studies. Because of the energy involved in the corn crop, ethanol production and the

transport of ethanol to terminals for marketing, corn-ethanol has limited “low-carbon” benefits.

In summary, the U.S. oil and natural gas industry continues to make good progress in meeting our nation’s growing energy needs and improving environmental performance. Looking ahead, we need to develop all economically viable energy sources including fossil and renewable fuel sources. By relying, to the greatest extent possible, on market forces, understanding consumer impact and preferences, encouraging development of new technologies, and addressing the impacts of expanded renewable fuel usage, I am confident that our industry and the nation will meet the energy challenges in the years ahead.

API and its member companies stand ready to work with the Subcommittee and to provide whatever additional information or assistance we can on the issues I have addressed, as well as other related issues that may arise during the course of Subcommittee deliberations.