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Before the

BLUE RIBBON ADVISORY COMMITTEE
WORKGROUP ON OXYGENATE USE IN GASOLINE

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Good afternoon Mr. Chairman and members of the Panel. My name is Linda Stuntz. I am a principal in the law firm of Stuntz, Davis and Staffier, P.C. I had the honor to serve as Deputy Secretary of the U.S. Department of Energy under President Bush, and in other positions within the Energy Department from 1989 until 1993. Earlier, I worked as Minority Counsel and Assistant Minority Counsel to the House Energy and Commerce Committee.

I am appearing today on behalf of the National Petrochemical and Refiners Association. Founded in 1902, NPRA's membership includes virtually all U.S. refiners and most manufacturers of petrochemicals, including MTBE, in the United States.

Your invitation to appear today to discuss oxygenate supply, cost and availability, and how this affects the cost and availability of motor fuel, is most appreciated. During my tenure at the Department of Energy, I participated with others in legislative and executive branch efforts which led to passage of the Clean Air Act Amendments of 1990 and the Energy Policy Act of 1992. As you know, the issues of fuel design and supply were extensively discussed and treated in both statutes.

I want first to commend you for taking on a task of the importance and magnitude of this one. Any concerns about the quality and safety of the nation's water supplies must be taken seriously, examined expeditiously and dealt with openly, fairly and conclusively.

The same is true, however, for issues affecting our nation's fuel supplies. The question of MTBE's future role in our motor fuel supply really goes quite near the heart of the refining industry's ability to provide adequate, environmentally responsible and reasonably-priced supplies of fuel to consumers. The refining industry's ability to supply consumers, in turn, has a lot to do with the economic strength of the country because, as we all know, the nation uses enormous supplies of gasoline and other petroleum products as it goes about its work.

So, as this panel carries out its responsibility to develop recommendations about continued MTBE use that will protect our health and the environment, I urge that you keep in mind the need to avoid disruptions in, or sharp increases in the cost of, motor fuel supplies.

NPRA does not advocate a ban or phaseout of MTBE use. We believe that the current situation calls for just exactly what you are doing here today: weighing all the evidence on the health and environmental effects of MTBE usage, determining possible solutions to any problems you identify, and then assessing the impact on fuel supplies of any recommendations that you consider.

As the foundation for any decision on the future of MTBE, NPRA supports strict enforcement of existing underground storage tank laws and regulations.

Lessons from the Decision of California Governor Davis

On March 26, 1999, Governor Gray Davis announced that the use of MTBE in California would be phased out by December 31, 2002. Governor Davis also concluded that:

> "One of the essential elements for a rapid phase down, and eventual phase-out of MTBE in California, is action by the EPA to eliminate the current mandate that California gasoline subject to the federal reformulated gasoline (RFG) program -- about 70 percent of all gasoline in the state -- must contain by weight at least 2.0 percent oxygen year-around."[1]

I would like to submit for the record a copy of NPRA's March 23, 1999 letter to Governor Davis concerning the future of MTBE usage in California. In that letter, the President of the NPRA asked the Governor to support a repeal of the 2% oxygen by weight requirement for reformulated gasoline **IF** he decided that a phaseout of MTBE usage in the state was necessary. NPRA also advocated a reasonable time period for the industry to implement the Governor's ultimate decision.

As difficult as Governor Davis' decision was, yours is all the more difficult because it will affect the supply and composition of motor fuel across the entire United States. In our view, if the panel decides to recommend any limitation on MTBE usage, it is imperative that you also include: (1) a reasonable period of time to implement your recommendations; and (2) greater flexibility for industry to meet environmental and performance requirements by eliminating the 2% oxygen by weight requirement for RFG. The remainder of my remarks will elaborate on these two points.

Oxygenate Supply and Demand, Assuming Nationwide MTBE Phase-out

Although NPRA is not advocating a nationwide ban or phase-out of MTBE, discussion of this approach provides a useful focus for demonstrating the importance of MTBE in today's motor fuel market, and the cost and availability of alternative oxygenates, particularly ethanol. It

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[1] April 12, 1999 Correspondence from Governor Davis to The Honorable Carol M. Browner.

is possible that other ethers such as ETBE, TAME and TBA could contribute more to meeting oxygenate demand if MTBE was phased out, but it is not clear to NPRA that these will be acceptable to the public or that industry will be certain enough of their acceptability, in the aftermath of what is happening with respect to MTBE, to invest in capacity to produce additional amounts of these other ethers. Such investments would be stranded if use of these ethers were strictly limited or eliminated in the future. Thus, my statement will focus on ethanol supplies and distribution.

Analysis of the Production, Capacity and Use of Oxygenates

The Energy Information Administration ("EIA") reports monthly on production, imports and stocks of individual oxygenates. As EIA points out, however, in its current report, "Demand and Price Outlook for Phase 2 Reformulated Gasoline, 2000," ["EIA Phase 2 RFG Report"] there is no comparable data on the disposition of oxygenates. Nevertheless, using the best data available, including data from the Renewable Fuels Association, it is clear that, if the 2% oxygen by weight requirement for RFG remains in place, the ability of ethanol to fill the void left by withdrawal of MTBE in a timely or economical manner is extremely doubtful. Let's start with historical oxygenate demand and usage. (Slide 1)

In 1997, the most recent year for which complete data are available, total oxygenate demand was about 370 thousand barrels per day. 83% of this demand was in the reformulated gasoline market. 86% of RFG oxygenate requirements, in turn, were met by MTBE. Ethanol met roughly 22% of the total oxygenate demand, but less than 9% of oxygenate used in the RFG market. (Ethanol enjoyed a 90% share of the considerably smaller market for the wintertime CO program.) The most significant fact shown by this chart is that **82%** of the 1997 RFG and CO

oxygenate requirements were satisfied by MTBE, with limited help from ETBE and TAME. This is the portion of motor fuel supply that is placed at risk by any action which affects refiners' ability to use MTBE and related ethers, while leaving in place the RFG 2% by weight oxygen requirement.

The second most significant fact shown by this chart is that the vast majority of all ethanol used in the RFG program was used in the Midwest. Given the inability to ship ethanol by pipeline, the requirement that it be splash-blended at terminals close to the end-use market because of its affinity for water, and the lack of a VOC waiver for ethanol blends, little ethanol is used in RFG outside the Midwest where the bulk of it is produced. This must be kept in mind when contemplating any replacement of MTBE on a nationwide basis.

Ethanol does have a large current market share in winter CO control programs in parts of Arizona, Colorado, Montana, Nevada, Oregon, Utah, Washington State and El Paso, Texas. Thus, ethanol has served wintertime oxygenate needs in many parts of the country. However, time was needed to provide for supply of ethanol to these markets, the volumes are small in comparison to those required in the RFG program, and volatility was not an issue.

Current Ethanol Production

Current U.S. ethanol **production** is estimated at about 80,000 b/day[2]. Of that production, about half goes into the RFG market and wintertime CO markets. The remainder is used as a

[2] "Supply and Cost of Alternatives to MTBE in Gasoline, Task 2: Report on the Oxygenate Market: Current Production Capacity, Future Supply Prospects, and Cost Estimates," Prepared for the California Energy Commission by Energy Security Analysis Inc. (ESAI), October 5, 1998 [hereafter the "CEC Report"] at p. 39. As will be discussed later, NPRA takes issue with certain assumptions made in this study; however, the CEC Report's data on ethanol production and capacity is generally consistent with NPRA's understanding of these data.

gasoline extender, usually in a mix of 90% gasoline and 10% ethanol (gasohol). EIA Phase 2 RFG Report. Estimates for total current ethanol production **capacity** vary between 107,000 b/d and 120,000 b/d. (CEC Report at 9.) This means that roughly 30,000-40,000 b/d of spare capacity exists. We know little about the cost and location of this spare capacity, but it is reasonable to assume that it is relatively high-cost capacity because it is not entering the market at current prices.

Ethanol Could Not Now Replace MTBE

What would it take to replace MTBE on a nationwide basis? Looking at slide 2, assuming a national MTBE phaseout, a total of 264.4 thousand b/d of RFG demand nationwide for MTBE would have to be satisfied by something else. If one assumes that TAME and ETBE are no longer eligible for use, the number grows to 280,000 barrels per day.

What would be needed is some combination of increased ethanol supplies <u>and</u> other hydrocarbons to make up lost volumes. If ethanol is used only to meet the 2% by weight oxygen requirement for RFG, then half of this 280,000 b/d shortfall would be made up by ethanol. The remainder of the missing hydrocarbon volumes, another 140,000 barrels per day, would have to come from other hydrocarbons, either domestically produced or imported. But this minimum ***oxygenate*** requirement--140,000 b/d of ethanol--exceeds by 100,000 to 110,000 b/d the current excess ethanol capacity. And this does not include the additional volume of ethanol capacity necessary to replace MTBE, ETBE and TAME in the CO program--1.6 thousand b/d.

Thus, it appears that in the event of a national MTBE phaseout, ethanol capacity is not nearly adequate to supply the oxygenate required if the 2% oxygen by weight RFG minimum is retained.

Given time (existing contracts will need to run their course) and a high enough price, the 40,000 b/d of ethanol now going to non-RFG markets could be bid away for use as an oxygenate. Additional ethanol capacity could also be built. But the amount of time necessary to do this, the cost, and the effects that such a "bidding away" would have on other ethanol users, or on corn, the primary feedstock for ethanol, are uncertain.

It is important to remember that the production and economics of ethanol are greatly influenced by the price of corn. According to the U.S. Department of Agriculture:

> "Fuel ethanol producers have taken a wild ride since production reached record highs in late 1994 and early 1995. With corn prices at or near record levels for an extended period during the 1995/96 crop year, ethanol producers were squeezed and fuel ethanol production dropped to 39,000 barrels per day by July, 1996, a full 80 percent below the high of 100,000 barrels per day in January 1995."[3]

It also is important to remember that other co-products of ethanol are affected by changes in the demand for and price of ethanol. As the CEC Report points out, ethanol output could be increased by "redirecting starch from the manufacture of other finished products to ethanol production."[4] However, the Report does not assess the effects on the markets for the "other finished products," including corn sweetener and animal feeds, in the event of such a "redirection."

Logistical Challenges Associated with Ethanol Use Must be Examined

Moreover, merely examining national aggregate ethanol production is <u>not</u> adequate to determine if ethanol can meet the RFG oxygenation requirement in the absence of MTBE

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[3] "Market Factors Affecting Fuel Ethanol Production," John McClelland, Associate Director, Office of Energy and New Uses, Economic Research Service, USDA, in Feed Yearbook/FDS-1997/March 1997, USDA Economic Research Service.

[4] P. 10

because it ignores the unique logistical challenges associated with ethanol use. Unlike MTBE, ethanol must be blended into gasoline at the terminal because it has an affinity for water which makes transporting it by pipeline impossible. Thus, drawing ethanol out of traditional markets to fill the void left by MTBE (largely in California and the Northeast) presents real logistical problems. If shipped by rail, the sheer volume of ethanol needed by refiners to oxygenate RFG could outstrip available tank car capacity and clog routes in a rail system already struggling to manage congestion in many of the areas where ethanol would need to go. Because terminals would need substantially more storage capacity for ethanol than is currently available, frequent resupply by rail car would be necessary, further stressing a system already struggling with logistical challenges. As the EIA Phase 2 RFG Study points out, "The proliferation of clean fuel requirements over the last decade has complicated petroleum logistics. Though the transition from Phase 1 to Phase 2 reformulated gasoline in early 2000 should not have a profound effect, additional clean fuels programs could make the system more vulnerable to local outages and price spikes."

The CEC Report is one of the more thorough analyses of the oxygenate supply-demand balance under various scenarios, but it makes assumptions about replacements for MTBE that should be questioned. For example, on page 43, the Report states: "(under a U.S.-wide ban of MTBE)...Even if 100,000 b/d of ethanol was bid away from the rest of the country by California...the rest of the U.S. could satisfy its oxygen requirements by a combination of leftover ethanol capacity, TAME, TBA, and additions to ethanol capacity." The previous discussion demonstrates that it would be very difficult, if not impossible, quickly to replace nationwide MTBE use with ethanol and other ethers. Overcoming supply and logistic problems would take

a great deal of time, and require the allocation of significant economic resources to provide the necessary incentives to increase ethanol capacity and overcome distribution obstacles.

The current controversy concerning MTBE should not be viewed as an opportunity to make a cosmic leap of faith about the availability of alternative energy supplies. The CEC report falls into this trap when it states: "In addition, bio-mass ethanol from other agricultural sources would probably be used."[5] Very little commercial capacity of bio-mass ethanol production exists today. Thus, very little data on production costs are available. Assuming that the production costs will be similar to corn-based ethanol, as the CEC Report does, makes no sense because if that were true, these ethanol supplies would already be in the market. We won't be doing renewable energy (not to mention gasoline consumers) any favors if we cling to an oxygenate mandate based upon wishful thinking.

In sum, after reviewing some of the key inputs that Governor Davis relied upon in making his decision, and the supporting materials which the Governor's office has supplied to explain that decision, I believe that the ability to provide timely, adequate replacement oxygenates for MTBE at comparable cost may have been overstated. Significantly, however, even in light of this overestimation of the availability of MTBE replacements, the Governor concluded that the 2% oxygen by weight mandate for RFG is <u>not</u> sustainable if MTBE usage is to be eliminated in California.

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[5] P. 44

Adopting for the nation any MTBE phase-out program similar to that announced by Governor Davis will justify, even necessitate, the elimination of the 2% by weight RFG oxygen requirement. It will also require sufficient time for the refining industry to adjust to the loss of MTBE.

CONCLUSION

The EIA Phase 2 RFG Report points out that the U.S. petroleum refining industry has responded to 5 major new Federal rules on motor gasoline product quality in the last 11 years. Tens of millions of dollar have been spent, including investments in MTBE facilities, to satisfy these rules. Now, the refining industry is operating at near maximum capacity and faces the need to address multiple fuel design issues simultaneously, including lower sulfur. In this extremely difficult environment, the NPRA believes that we will have the best chance to adapt to any ultimate decision with respect to future MTBE use if: (1) adequate time is provided for implementation; (2) future requirements for the nation's fuel supply are based upon sound economics and science; and (3) the public interest in reliable, reasonably priced motor fuels is kept firmly in mind. Setting targets and giving the industry maximum flexibility to meet those targets would be best.

Thank you, again, for allowing me to participate in this panel discussion.

1997 OXYGENATE DEMAND
(000 barrels/day)

TYPE	REGION	MTBE	ETBE/TAME	ETHANOL
RFG	East Coast	128.2	9.1	1.0
	Midwest	4.0	0.0	21.8
	Gulf Coast	27.4	3.2	0.0
	Rocky Mt.	0 0	0.0	0.0
	West Coast	100.9	3.4	2.0
		259.5	15.7	24.7
Oxy RFG	East Coast	4.8	0.0	0.4
	West Coast	0.1	0.0	0.7
CO	Entire U.S.	0.5	1.1	15.5
ConvGas	Entire U.S.	4	N.A.	41
Total	Entire U.S.	269	N.A.	82

SOURCE: DOE/EIA, “Demand and Price Outlook for Phase 2 Reformulated Gasoline, 2000", Table 4, Released April 8, 1999

ETHER REPLACEMENT OPTIONS

Ethanol provides RFG oxygenate needs
264.4 kbd MTBE + 15.7 kbd ETBE/TAME replaced by half as much ethanol to meet 2 wt% oxygen content requirement, (264.4 + 15.7) * 0.5 = 140 kbd ethanol

New ethanol supply sources: new domestic capacity, imports and ethanol used currently in gasohol

Gasoline supplies must be found to replace the other 50% of ethers used in RFG, 140 kbd

Supply sources: increased production of hydrocarbons at domestic refineries and imports