UNITED STATES OF AMERICA
FEDERAL TRADE COMMISSION
WASHINGTON, D.C. 20580

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**Before the**
**ENVIRONMENTAL PROTECTION AGENCY**

**Study of Unique Gasoline Fuel Blends ("Boutique Fuels"), Effects on Fuel Supply and Distribution and Potential Improvements, EPA 420-P-01-004**
**Public Docket No. A-2001-20**

**Comments of the Staff of the**
**General Counsel, Bureaus of Competition and Economics, and the**
**Midwest Region**
**of the Federal Trade Commission**[1]

January 30, 2002

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[1] This comment represents the views of the staff of the Office of General Counsel, the Bureaus of Competition and Economics, and the Midwest Region of the Federal Trade Commission. They are not necessarily the views of the Federal Trade Commission or any individual Commissioner. The Commission has, however, voted to authorize the staff to submit these comments.

## I. Introduction

The Federal Trade Commission ("FTC") staff[1] appreciates the opportunity to submit these comments concerning the Environmental Protection Agency ("EPA") Staff White Paper, prepared in response to the President's National Energy Report (May 2001). That report directed the Administrator of the EPA to "study opportunities to maintain or improve the environmental benefits of state and local 'boutique' fuels programs while exploring ways to increase the flexibility of the fuels distribution infrastructure, improve fungibility, and provide added gasoline market liquidity."[2] This directive reflects the common understanding that, all else being equal, increased substitutability of gasoline and increased efficiency in its production and distribution are likely to benefit consumers through greater competition and lower prices.

We offer views from the perspective of the FTC's mission to preserve competition in the marketplace and thereby protect consumer welfare. Competition is, of course, the cornerstone of our economy. Where there is vigorous competition among sellers, consumers benefit from lower prices, higher quality, and greater innovation. An analysis of how different regulatory alternatives would likely affect competition and market efficiency -- *i.e.*, the likely impact of regulatory alternatives on competition in economically relevant markets -- would assist EPA in evaluating how best to maintain or

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[2]EPA Staff White Paper at 1-2.

improve environmental benefits,[3] while also benefitting consumers through increased flexibility of the fuels distribution infrastructure, improved fungibility, and added gasoline market liquidity.[4]

The EPA Staff White Paper estimates the effects of unique gasoline fuel blends on the supply and distribution of gasoline. Based on these estimates, EPA has proposed four options regarding the optimum total number of fuels that could be used to meet federal air pollution goals required by the Clean Air Act Amendments of 1990. These four options have formed the basis of EPA's initial analysis of a long-term policy regarding unique gasoline fuel blends. The EPA Staff White Paper, therefore, reflects significant initial work to address what, of necessity, is a very complex analysis. EPA's initial work, however, does not address critical issues, that must be taken into account so that reliable and valid recommendations can emerge.

We offer for EPA's consideration use of the competitive analysis framework, outlined in the U.S. Department of Justice and FTC Horizontal Merger Guidelines[5] to assist EPA in reframing certain issues, thus extending and improving the initial analysis. In particular, EPA may wish to supplement its initial analysis to examine three possible scenarios or economic effects that changes in regulations may cause in relevant markets. First, changes in the clean fuel regulations may impose costs on consumers

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[3]The FTC staff does not have expertise on environmental issues, and we take no position on how to balance competitive impacts with environmental objectives.

[4]The EPA Staff White Paper recognizes implicitly the importance of competition in the sale of motor gasoline by including within its analysis the impact of varying fuel requirements on (1) the number of fuels distributed (*i.e.*, it is assumed fewer fuels increase the fungibility and movement of gasoline across the country); (2) gasoline production capacity; and (3) production and distribution costs.

[5]*See* U. S. Dept. of Justice and Federal Trade Comm., Horizontal Merger Guidelines (Apr. 2, 1992, revised Apr. 8, 1997), *reprinted* in 4 Trade Reg. Rep. (CCH) ¶ 13,104 [hereinafter Merger Guidelines]. The Merger Guidelines are attached as Appendix A.

by increasing average costs to produce unique gasoline fuel blends. Second, such changes may give rise to conditions that make short-term price spikes more prevalent. Third, changes in clean fuel regulations may create or enhance market power of certain sellers or facilitate its joint exercise by more than one seller. EPA may wish to examine each of these likely scenarios or effects in relevant markets for each proposed regulatory change in the clean fuels program.

Certain fundamental concepts in any competitive analysis – such as how to define economically relevant product and geographic markets – may help evaluate more broadly the likely market impact of regulatory changes. For example, if a particular regulatory change would lead to smaller relevant markets, that could reduce supply alternatives, which would make these markets more susceptible to price spikes when supply disruptions caused temporary shortages.

Part II of this comment describes the usefulness of the approach, including analyses of the likely competitive effects of mergers in the petroleum industry, as well as our investigations into recent gasoline price spikes in particular areas of the country. Part III discusses the analytical framework outlined in the Merger Guidelines.

Part IV describes how this competitive analysis might be applied to EPA's study of possible changes in the clean fuel program.[6] Part IV.A discusses how to define a relevant product market. We suggest that EPA examine *all* unique fuel blend requirements that differ from conventional motor

[6]The type of analysis that we suggest also could be used to identify the competitive impacts of any near-term or localized changes to the existing clean fuels program.

gasoline, not just non-federal regulatory mandates. Federal, as well as state, mandates for specialized fuel may have competitive impacts on the gasoline system.[7]

Part IV.B explains why the relevant geographic markets, depending upon the product being analyzed, are likely regional or local in nature. Although crude oil is, for the most part, a commodity traded on world markets, our experience shows that economically relevant gasoline markets are regional for refining and transportation, and local when considering gasoline distribution or retail sales. For example, gasoline retailers on the East Coast cannot sell to Midwest customers subject to a short-run price spike. Similarly, a refinery that does not, or cannot in the short run, produce the type of gasoline currently in short supply in a certain region cannot be considered to be in that market for purposes of resolving short-run price spikes. To examine information solely on a national basis, as the EPA Staff White Paper does, masks supply constraints that can cause price spikes or higher average prices in smaller markets.

Part IV.C considers how to identify current and potential market participants in each of the relevant product and geographic markets (that is, the number and relative size of competitors).

Part IV.D addresses likely competitive impacts resulting from different possible changes to the clean fuels program. The suggested competitive analysis should include a focus on whether different regulatory options would be more or less likely to produce market circumstances conducive to the three scenarios discussed above (*i.e.*, higher average fuel costs, more frequent or greater price spikes, or higher prices because of increased market power). A number of factors are discussed that may be

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[7] *See* discussion of Midwest Gasoline Pricing Investigation, *infra* at notes 15-16 and accompanying text.

relevant in evaluating such questions. This section also recognizes that mandated fuel requirements are by no means the only factors that may influence average gasoline prices or price spikes. Other factors, such as volatility in crude oil prices, the high level of refinery capacity utilization, and the inventory practices of industry participants, may alter the analysis.

Part IV.E discusses the assessment of whether any likely competitive effects, including adverse price effects, would be counteracted by entry. Part IV.F discusses the evaluation of efficiency gains that could result from a change in the clean fuels program.

The sort of analysis we suggest admittedly will represent an ambitious undertaking. Given the importance of the clean fuels program in reducing air pollution, such an analysis of the three scenarios discussed above is vital to ensure that consumer welfare is maximized -- not only in terms of obtaining the environmental benefits of the program, but also to obtain the benefits that competition among sellers will provide to consumers. Several economic models of the gasoline industry already exist and might form the foundation for the study.[8] In addition, the FTC, which has considerable experience in this area, is ready and willing to assist EPA to the extent such assistance is desired. For example, we would be willing to assist EPA in developing an approach that would reduce the burden of performing the suggested analysis.

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[8]The Department of Energy works with a regional model of petroleum supply and demand, as well as a refinery model built at its Oak Ridge Laboratories. The National Petroleum Council published an industry supply model in 1993, and updated it in 2000. Some commercial logistics flow models may also be available. Any of these models might provide a basis for studying the competitive impacts of changes in requirements for unique gasoline fuel blends.

## II. FTC Expertise

The FTC is a law enforcement agency whose mission is to preserve competition and protect consumers in many segments of the U.S. economy, including the petroleum industry. The Commission enforces the competition laws, including Section 7 of the Clayton Act, which prohibits mergers or acquisitions that may "substantially lessen competition or tend to create a monopoly."[9] The Commission challenges those mergers that increase the likelihood that the merged firm can unilaterally, or in concert with others, increase prices and reduce output, or reduce innovation. In the course of its work, the FTC applies established principles and recent developments in economic theory and empirical analysis. The Commission often shares its expertise in competition and consumer protection matters by providing advice and guidance to states and other federal regulatory agencies.

For the past twenty years, the Commission has been active in investigating petroleum mergers using the competition analysis contained in the Merger Guidelines. In recent years, the Commission has investigated the mergers of Chevron and Texaco,[10] Exxon and Mobil,[11] and BP and Amoco[12] – the three largest oil mergers in history – and the combination of the refining and marketing businesses of Shell, Texaco and Star Enterprises to create what was, at the time, the

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[9]15 U.S.C. § 18. The Commission shares jurisdiction with the Department of Justice under section 7 of the Clayton Act. The Commission also enforces section 5 of the FTC Act, 15 U.S.C. § 45, which prohibits "unfair methods of competition" and "unfair or deceptive acts or practices."

[10]*Chevron Corp.*, C-4023 (Dec. 18, 2001) (consent order).

[11]*Exxon Corp.*, C-3907 (Jan. 30, 2001) (consent order).

[12]*British Petroleum Company p.l.c.*, C-3868 (Apr. 19, 1999) (consent order).

largest refining and marketing company in the United States.[13] Last fall, the Commission investigated the proposed merger of petroleum refiners Valero Energy and Ultramar Diamond Shamrock.[14] Attached as Appendix B are the FTC's public analyses of these mergers.

In each of these merger investigations, the Commission determined that these transactions were likely to threaten competition in certain local or regional markets -- markets defined using the analytical principles discussed in the Merger Guidelines. The Commission chose not to challenge these mergers only after it negotiated agreements that resolved the competitive concerns in each of the relevant markets. For example, the Chevron/Texaco merger proceeded only after the firms agreed to divest all of Texaco's interests in two joint ventures, Equilon and Motiva, as well as certain Texaco natural gas and general aviation fuel businesses. In the Exxon/Mobil merger review, the merging parties agreed to divest all Mobil retail gasoline stations from Virginia to New Jersey, and all Exxon stations from New York to Maine, as well as additional retail assets in the Southwest, a refinery in California, and other pipeline and terminal assets. In BP/Amoco, the companies agreed to divestitures of retail stations in 30 local gasoline markets (mostly in the Midwest), and in Shell/Texaco, the Commission preserved competition through divestiture in local gasoline markets and also in refining and pipeline markets. Most recently, the Commission resolved its competitive concerns about the Valero/Ultramar merger by proposing to require divestiture by Valero of Diamond Shamrock's Golden Eagle, California refinery

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[13]*Shell Oil Co.,* C-3803 (Apr. 21, 1998) (consent order). Other recent mergers involving petroleum industry assets include Tosco's acquisition of Unocal's California refineries and marketing business, the acquisition by Ultramar Diamond Shamrock of Total's North American refining and marketing operations, the combination of the refining and marketing businesses of Marathon and Ashland, the merger of Phillips and Tosco, and the merger of BP Amoco and Atlantic Richfield.

[14]*Valero Energy Corp.,* C-4031 (Dec. 18, 2001) (proposed consent order).

and 70 retail operations. This proposal was based in part on an analysis of the market effects of differing fuel requirements (in this case, unique fuel blends required by the California Air Resources Board (*i.e.*, CARB-2 and CARB-3 gasoline)).

The Commission has also conducted nonmerger investigations and workshops involving gasoline markets. In March 2001, the Commission completed an investigation, using the competition analysis principles in the Merger Guidelines, of a spike in reformulated gasoline (RFG) prices in several Midwest states in the spring and summer of 2000.[15] In that report, the Commission noted the spike "appears to have been caused by a mixture of structural and operating decisions made previously (high capacity utilization, low inventory levels, the choice of ethanol as an oxygenate), unexpected occurrences (pipeline breaks, production difficulties), errors by refiners in forecasting industry supply (misestimating supply, slow reactions), and decisions by some firms to maximize their profits (curtailing production, keeping available supply off the market)."[16] Also in 2001, the Commission concluded its investigation of gasoline price increases in West Coast markets.[17] In addition, in August 2001, the Commission held an initial public conference to examine factors that affect prices of refined petroleum

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[15]Midwest Gasoline Price Investigation, Final Report of the Federal Trade Commission (Mar. 29, 2001). The Final Report is attached as Appendix C.

[16]*Id*. at 3. The Commission found no credible evidence of collusion or other anticompetitive conduct by the oil industry in its investigation of price spikes in the Midwest.

[17]*FTC Closes Western States Gasoline Investigation,* FTC Press Release (May 7, 2001).

products in the United States.[18] A second public conference is scheduled for May 2002.[19] These activities have further contributed to the staff's knowledge of the workings of gasoline markets.

## III. The FTC's Analytical Technique for Competitive Market Analysis

The President's directive to EPA suggests that the goal of the study is to identify those options most likely to provide a competitive gasoline supply system -- one that, within certain environmental parameters, can respond to market forces quickly to ameliorate local or regional market power or temporary scarcity that pushes up prices. A thorough competitive analysis of gasoline markets will assist EPA in identifying those options. The Commission's investigations have revealed a great deal about how competitive gasoline markets function.

We suggest that EPA supplement the analysis in the Staff White Paper by using the competitive analysis approach contained in the Merger Guidelines, which has proven to be a highly useful method for understanding the likely competitive effects of structural changes in any particular market. Mergers change the structure of the industry in ways that may have an impact on supply (*e.g.*, number of suppliers) and demand in one or more relevant markets. Changing fuel mandates is akin to such structural changes in that they may affect supply and demand in one or more relevant markets.

A merger-like analysis of possible changes to the clean fuels program could assist in identifying likely impacts on supply and demand. For example, if a change in a regulatory requirement expands the supply base in a particular relevant market because a new supplier enters the market, increased

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[18] *FTC to Hold Public Conference/Opportunity for Comment on U.S. Gasoline Industry*, FTC Press Release (Jul. 12, 2001).

[19] *FTC to Hold Second Public Conference on the U.S. Oil and Gasoline Industry in May 2002*, FTC Press Release (Dec. 21, 2001).

competition may result, which may affect average prices or the market's degree of susceptibility to price spikes in response to supply disruptions. Alternatively, if changes to a regulatory requirement were to set product specifications that one or more refineries currently in the market could not profitably meet, then the exit of those firms from the relevant market might increase concentration (and perhaps affect competition), as would a merger. Even if a regulatory change did not affect a firm's market power, it could alter retail prices by inducing firms to increase or decrease capacity or output.

To determine the likely competitive effects of a particular merger, the Commission employs several steps.[20] First, the Commission identifies the relevant geographic and product markets and determines the extent to which the proposed transaction would increase concentration in those markets. Second, it assesses whether the merger, in light of the impact of the proposed transaction on market concentration as well as other factors, raises competitive concerns such as the increase in likelihood of collusion or the exercise of market power by one firm. Third, the Commission considers whether entry by additional firms into the market would either deter or counteract the competitive concerns. Fourth, the Commission assesses whether the transaction will result in any efficiency gains that reasonably cannot be achieved through means other than the proposed merger.[21] This framework allows the Commission to address the ultimate inquiry in merger analysis: whether the merger is likely to create or enhance market power or to facilitate its exercise that could result in increased prices or reduced output.

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[20]*See* Merger Guidelines, *supra* note 5.

[21]In certain limited instances, the Commission also evaluates whether a merger is unlikely to create or enhance market power because the imminent failure of one of the merging firms would have caused its assets to exit the relevant market.

## IV. Application of Competitive Analysis to the EPA's Study

In this section we briefly apply a competitive effects, merger-type analysis to the problem of identifying options for the next generation of clean fuel requirements. The purpose is to demonstrate the application of the process to topics that EPA has been directed to study. It is not, nor is it intended to be, a thorough analysis of the likely competitive effects of the proposed changes in clean fuel requirements. Commission staff is available to provide additional advice and guidance to EPA concerning the application of the competitive analysis model, to the extent that such assistance is desired. Specifically, we are willing to assist in determining how various changes in the clean fuel program requirements can affect likely average costs of motor fuel to consumers, the likelihood of price spikes, and the potential for increased exercise of market power.

### A. Relevant Product Market

The first step is for EPA to identify the relevant product markets. This step takes place for each of the relevant market segments, or combinations thereof: most likely, refineries, pipelines, terminals, key inputs (such as oxygenates), and local gasoline distribution.

Under a merger-type analysis, a relevant product market would consist of any fuel that could legally be sold in competition with any other fuel, such that a single supplier, or a group of suppliers acting as one, could profitably increase price (*i.e.*, consumers would not switch products to the extent necessary to constrain the price increase in the first instance). If consumers would switch to another product or products in response to the price increase (thereby preventing the supplier(s) from increasing price in the first place), then those products would be included in the definition of the relevant product market as well.

EPA's current definition of "boutique" fuels is limited to fuels mandated by state and local authorities that are different from federal fuels. This definition, however, is likely not broad enough to capture all the competitive effects of requiring specialized fuels. Federally mandated fuels also have had supply problems and short-term price spikes. In fact, one of the areas in which significant price spikes have occurred in recent years is Chicago, which uses ethanol-blended federal RFG. EPA may wish to broaden its definition of "boutique" fuels to include any motor gasoline legally required to differ from conventional gasoline.[22] Any such gasoline is likely to require specialized production, distribution, and storage, and have smaller markets with fewer suppliers and, therefore, be more susceptible to short-term price spikes when there are production or distribution disruptions. If federal or state regulations mandate a certain boutique fuel, that fuel alone will comprise the relevant market.[23]

**B. Relevant Geographic Market**

Once the product market is identified, the inquiry turns to the geographic market. The geographic market is the area within which a supplier could profitably raise price for the identified fuel, without consumers switching to suppliers located outside the tentatively identified region. Regulatory constraints play a part in this inquiry as well.

The regional and local nature of the U.S. gasoline industry is confirmed by the Commission's experience in recent merger and nonmerger investigations. Relevant antitrust markets for gasoline and

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[22]Hereinafter, the term "boutique fuels" refers to any motor gasoline legally required to differ from conventional gasoline.

[23]Depending on the fuel mandate, it may be possible to substitute other fuels that meet the minimum fuel specifications of the mandated boutique fuel. However, due to factors such as oxygenate requirements, fuels with less stringent environmental specifications are not, as a general matter, substitutes for fuels with more stringent specifications.

other refined petroleum products in Commission cases typically have been regional or local, depending on the segment of the industry subject to the investigation. When the competitive problem is at the refinery level, relevant markets tend to be regional. In the West Coast pricing investigation and the Midwest investigation, refineries able to respond to higher prices were limited to those that could promptly make the RFG or CARB gasoline that could legally be sold in those regions, and that could economically deliver this gasoline by pipeline or barge to those areas in time to take advantage of the higher prices.

When the competitive issue is at the retail level, the markets are smaller. For instance, in the Exxon/Mobil and BP/Amoco merger investigations, the Commission alleged that the mergers would cause competitive problems in local retail markets on the East Coast and in the Midwest, and divestitures of retail outlets in each of those markets were required to restore competition.

### C. Identification of Current and Potential Market Participants

Once the relevant markets are identified, the next step is to identify the current suppliers into the relevant product market segment such as refiners, pipelines, or terminals (or combinations thereof), or into a key input, such as ethanol for the relevant geographic market. For each relevant market, the competitive analysis also would identify other firms not currently supplying the market, but which had the technological capacity to do so in the event of a supply shortfall and consequent price increase by the existing market participants.[24] For example, a supplier already in the market could increase its

[24]In assessing likely future market participants, EPA staff may wish to review the entry analysis of the DOJ/FTC Merger Guidelines, which focuses, among other things, on how to assess the likely profitability of market participation. *See* discussion Section IV.E *infra*. As discussed below, entry analysis also would consider whether new entry might occur in response to regulatory changes, thus

production, or a supplier outside the geographic market could transport its product into the market in response to the price increase. If the firm would be likely to supply the market in response to a price increase, that firm should be considered a market participant.[25]

### D. Competitive Effects: Concentration Levels and Other Significant Factors

A merger-type analysis will then attempt to assess the competitive effects likely to result from structural changes in the relevant market – in this case, as a result of changes in boutique fuel requirements. For mergers, the analysis begins by calculating the current concentration level of the relevant markets,[26] and then comparing it to the likely concentration level post-merger.

For EPA, such a competitive analysis will begin with a comparison of current market concentration levels, based on current market participants, with likely future market concentration levels, based on likely market participants under various future regulatory scenarios after the proposed boutique fuel regulations become effective.[27] EPA may need to consider whether certain current market participants would leave the market in response to regulatory changes, thus reducing the likely

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deterring or counteracting any competitive concerns identified by the analysis.

[25] More specifically, under the Merger Guidelines, a firm is viewed as a current participant if, in response to a "small but significant and nontransitory" price increase, it likely would enter into production or sale of a market product in the market's area within one year and without incurring significant sunk costs of entry and exit. Supply responses that require more time or require firms to incur significant sunk costs of entry and exit are considered later in the entry analysis. *See* Merger Guidelines, *supra* note 5.

[26]The FTC and the Department of Justice use the Herfindahl-Hirschman Index as the preferred measure of market concentration. *See* Merger Guidelines, *supra* note 5.

[27]Note, however, that in some situations, market share and market concentration data may either understate or overstate a firm's likely future competitive significance. *See* Merger Guidelines, § 1.52.

number of suppliers in any relevant market. For example, participants at the FTC Public Conference in August 2001 reported that several refineries (especially smaller and older refineries) have closed rather than invest in achieving compliance with the Clean Air Act.[28]

Market share and concentration data provide, however, only the starting point for the competitive effects analysis. Section 2.1 of the Merger Guidelines lays out in detail factors that should be considered in assessing whether a merger may diminish competition by enabling or facilitating coordinated interaction (*i.e.*, some form of collusion among relevant market participants). Section 2.2 of the Merger Guidelines addresses whether a merger may diminish competition by increasing the likelihood of a unilateral exercise of market power. By analogy, EPA may consider whether market changes resulting from new regulations may increase the likelihood of collusion or the unilateral exercise of market power.[29]

As noted earlier, in light of EPA's broad mandate, the agency may wish to consider the extent to which regulatory changes would make markets more susceptible to higher average prices or price spikes, for reasons other than changes in the likelihood of the joint or unilateral exercise of market power. For purposes of the brief discussion provided by this comment, we offer just a few observations on potential areas EPA may wish to consider.[30] First, a competitive analysis should

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[28]*See*, *e.g.*, Testimony of Philip Verleger, President, PKVerleger LLC and Senior Advisor, The Brattle Group, FTC Public Conference, Transcript at 33-36; Testimony of Mark Cooper, Director of Research, Consumer Federation of America, *id.* at 102-03.

[29]Entry, efficiencies, and, where applicable, the failing firm defense also require consideration, and are discussed in subsequent sections.

[30]Although the EPA Staff Report discusses certain of these points, we make them here to demonstrate how they fit into the competitive analysis suggested.

examine the costs of current and anticipated fuel blend requirements. At the FTC's Public Conference, participants testified that boutique fuel requirements increase the costs of refining, distribution, and storage, and can lead to higher average prices at retail.[31] These higher production and distribution costs may not be as visible to consumers as the price spikes that occur in times of product shortages, but they may affect the number and size of likely market participants (*e.g.*, if economies of scale are significant) or directly raise costs, and thus may ultimately affect average prices to consumers.

Second, if EPA's analyses suggest the presence of smaller geographic markets, it should be noted that those markets may be more susceptible to competitive concerns, because suppliers into such markets tend to be limited. The flexibility that additional suppliers would provide will be absent in more concentrated markets if there are constraints on the ability of suppliers not presently serving such markets to transport their product and have it economically distributed to those markets. In addition, if scale economies are substantial, smaller geographic markets generally may experience higher production and distribution costs.

Third, because markets with boutique fuel requirements tend to be more concentrated than those using only conventional gasoline, boutique fuels may be particularly subject to price spikes when supply disruptions occur.[32] Boutique fuel requirements may increase the difficulty of supplying sufficient

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[31]*See*, *e.g.*, Testimony of William Niskanen, Chairman, CATO Institute, FTC Public Conference, Transcript at 158-60.

[32]One major factor behind the recent price spikes is the high capacity utilization rate under which the entire gasoline industry operates, from refineries to pipeline transportation to terminal storage. In recent years, the industry has operated at approximately 94 percent of capacity. Although the EPA Staff White Paper states that the current capacity utilization rate will not compromise the gasoline distribution system barring some disruption, disruptions are almost inevitable when there is no slack in the system. When utilization is consistently high in order to meet current needs, maintenance is

gasoline at retail in certain markets because, by law or regulation, such fuels are not interchangeable. Any sudden disruption or decrease in supply can result in immediate increases in prices, posing problems for both consumers and retailers.[33]

A fourth issue relevant to competitive effects is the difference in short- and long-run supply responses to market imbalances that may occur in response to boutique fuel requirements. During a short-run price spike, additional supply will come from refiners that can make the needed gasoline and profitably transport it, in a timely fashion, into the area of shortage. The response from other refiners will be limited or nonexistent because capacity and product mix are generally fixed in the short run. In the long run, however, supply becomes more flexible because refineries can be expanded or retooled to produce a greater volume and range of products. A number of factors influence decisions to expand long-term capacity. Among these are the costs and difficulties of complying with various environmental

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deferred, the infrastructure is pushed to its breaking point, and there is no reserve capacity to respond to breakages, outages, or increased demand. The problems may be compounded when a particularly stringent fuel specification effectively necessitates the use of a particular blendstock; then, the failure of even a single key unit at a major refinery can have dramatic effects on regional fuel supplies.

[33]The antitrust analysis of uncommitted entry provides a template for what EPA may wish to consider in assessing the likelihood of short-run or intermediate term supply problems that could cause price spikes. In the merger context, uncommitted entry considers the ability of potential competitors quickly to come into the market to offer competition to the merged firms. Factors that impact the ability of uncommitted firms to enter include the degree of sunk costs, shipment times and costs, the ease of obtaining distribution, and how readily production facilities and supplies can be diverted from other markets. These are precisely the types of issues that are important in analyzing both price spikes and whether adopting an alternative fuel specification leaves an area vulnerable to short-term supply disruptions.

regulations, which can lead to a reduced return on capital.[34] Those factors should be a prime consideration when analyzing potential changes in the clean fuels program.

Finally, our experience and learning in this area lead us to caution that the clean fuels program is by no means the only determinant of gasoline prices. In considering the likelihood of higher average prices or an increased number of price spikes, or other possible competitive effects due to regulatory changes, it is necessary to consider the complex interaction of various factors that affect the final price to consumers. Higher base prices for crude oil, which result in higher prices for gasoline, will reflect the effectiveness of the OPEC producers' cartel.[35] The continuously high level of capacity utilization at various points in the gasoline system reduces the margin of error for responding to changing conditions.[36] Price spikes at local or regional levels may happen whenever any kind of supply disruption occurs.[37] Pipeline outages, refinery fires, or problems with terminal storage capacity can all result in price volatility. A change in inventory practices, both of crude and refined products suppliers,

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[34]*See, e.g.*, Testimony of John Felmy, Chief Economist and Director, Policy Analysis and Statistics, American Petroleum Industry, FTC Public Conference, Transcript at 24-25.

[35]*See* Testimony of John Cook, Director, Petroleum Division, Office of Oil and Gas, Energy Information Administration, U.S. Department of Energy, FTC Public Conference, Transcript at 49-52.

[36]*See* Testimony of Robert Slaughter, General Counsel and Director of Public Policy, National Petrochemical and Refiners Association, FTC Public Conference, Transcript at 90-91.

[37]In some situations, when a supply disruption occurs, a retail price inversion may result (*i.e.*, independent retailers will charge more than branded retailers, which is customarily not case), because the independents, who rely on spot supply arrangements, may experience an above-average increase in their wholesale cost of gasoline. Some commentators have argued that this short-run phenomenon may have long-run competitive consequences, if independent marketers are forced to exit by repeated inversion episodes.

may affect the ability of any market participant to react to different market circumstances.[38] Moreover, regulatory restrictions on vertical integration (*e.g.*, state gasoline divorcement laws) can affect retail prices.[39] Any study of supply fungibility should recognize the multiplicity of factors at work.

### E. Entry May Deter or Counteract Adverse Competitive Effects

The ease with which new firms can enter the market is an important factor in evaluating the likely competitive effects of changes in boutique fuel mandates. If entry into the market is easy, it likely will deter or counteract any competitive concerns. If, on the other hand, entry is difficult, competitive concerns will increase. Factors such as large sunk costs and long lead times tend to make entry difficult. For example, as we learned in the Midwest investigation, some of the refiners supplying the Chicago market independently concluded that it was not economical to produce a higher volume of Phase II summer-grade RFG, and therefore limited their investments in refinery capital. Moreover, even when prices spiked, these refiners did not make additional capital investments, because the price spikes were perceived as being short-term and thus unlikely to provide a sufficient return on investments. Consequently, in evaluating entry, EPA needs to assess whether refineries, pipelines, terminals, and others will make the necessary infrastructure investments to produce and deliver the types and volumes of gasolines required.

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[38]*See* Testimony of Philip Verleger, FTC Public Conference, Transcript at 38-43.

[39]*See* Michael G. Vita, "Regulatory Restrictions on Vertical Integration and Control: The Competitive Impact of Gasoline Divorcement Policies," 18 *J. Reg. Econ*. 217 (2000).

### F. Efficiencies May Result from Changes in Clean Fuel Requirements

The next step of the competitive analysis is to identify any efficiencies generated through possible changes in the boutique fuels program that might offset potential anticompetitive effects. For example, a reduction in the number of different fuels might generate cost savings in the pipeline shipment of fuel, in the form of increased pipeline volumes of each remaining product, lower shipment costs, and a decrease in the amount of lost product due to contamination. When a certain fuel is not marketable past a given point in the pipeline, it is often necessary to interrupt the flow of product downstream of the point where that fuel is drawn off the line to a terminal, because the stub-lines at terminals do not have as high a flow capacity as the pipeline itself. The result is a reduced volume of product, possibly along the entire length of the pipeline, and, because fixed costs are spread over a smaller volume, an increase in the per unit shipment cost.[40]

It is not clear that having a mandated uniform gasoline standard as suggested by one of the options in the EPA Staff White Paper would be the most efficient outcome, because it might result in the closure of a number of refineries that could not meet the national fuel requirement, leading to reduced supply and higher prices overall.[41] The nature of the differentiated fuels problem is complex,

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[40]Shipping multiple products also may lead to inefficiency due to some mixing of adjacent products. The volume of mixed product is known as "interface." Sometimes the product specifications allow the interface to be "downgraded" to one of the adjacent products. For example, an interface between premium and regular gasoline could be downgraded to regular gasoline. The downgrading, however, comes at a cost equal to the difference in the value of the premium versus the value of the regular gasoline. At other times, the interface cannot be downgraded to one of the adjacent products, but must be segregated and reprocessed, typically at a nearby refinery or reprocessing plant.

[41]In addition, replacing the current clean fuels program with fewer fuels, or even a single fuel, may not solve the supply and price volatility problems. The current industry infrastructure has evolved to accommodate the various boutique fuels within each particular region and the market has reached a

deriving from the interaction of production and distribution economics and gasoline chemistry. Increasing the average environmental quality of the gasoline pool and adding specifications may well increase costs due to both the increasing stringency of the specifications and more frequent changeovers of production equipment and shorter run lengths. Increasing differentiation also means that the distribution system must handle many more varieties of product which implicitly requires greater storage demands and expenses of preventing or remedying cross-contamination. The interaction between the overall quality level and the number of individual specifications also has significant cost implications, since specific changes usually affect both the number of specifications and the average fuel quality level.

## V. Conclusion

A helpful method to analyze the production and distribution system for gasoline from a consumer welfare perspective is to look at the likely competitive impact of any potential changes in federal and state fuel mandates from three vantage points: impacts on average fuel costs, on the likelihood of price spikes, and on the exercise of market power. EPA may wish to use a

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new equilibrium. *See* Testimony of Robert Bassman, Bassman, Mitchell and Alfano, Counsel for Petroleum Marketers Association of America, FTC Public Conference, Transcript at 196-99.

competitive merger-type analysis in setting the agenda for changes to the nation's boutique fuels program.

Respectfully submitted,

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William E. Kovacic, General Counsel
Susan S. DeSanti, Deputy General Counsel
Michael S. Wroblewski, Assistant General Counsel

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Joseph J. Simons, Director
James F. Mongoven, Attorney
Bureau of Competition

_____

David T. Scheffman, Director
Jay S. Creswell, Jr.
Bureau of Economics

_____

C. Steven Baker, Director
Nicholas J. Franczyk
Midwest Region