2010 Report on Ethanol Market Concentration

I. Introduction

Section 1501(a)(2) of the Energy Policy Act of 2005, as codified at 42 U.S.C. § 7545(o), imposes an annual requirement on the Federal Trade Commission ("Commission" or "FTC") to "perform a market concentration analysis of the ethanol production industry using the Herfindahl-Hirschman Index [("HHI")] to determine whether there is sufficient competition among industry participants to avoid price-setting and other anticompetitive behavior."[1] The statute also requires the FTC to consider all marketing arrangements among industry participants in preparing its analysis.[2] The FTC must report its findings to Congress and to the Administrator of the Environmental Protection Agency ("EPA").[3] This report presents the FTC's concentration analysis of the ethanol production industry for 2010. It builds upon Commission reports from previous years, which contain relevant background information that this report does not repeat.[4]

For purposes of this analysis, FTC staff ("staff") reviewed and analyzed publicly available data and conducted interviews with ethanol producers, marketers, and other industry participants. As in previous reports, staff calculated HHIs for the ethanol production industry

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[1] Energy Policy Act of 2005 § 1501(a)(2), 42 U.S.C. § 7545(o)(10) (2009).

[2] *Id*. at § 7545(o)(10)(A)(ii).

[3] *Id*. at § 7545(o)(10)(B).

[4] *See* FTC, Report on Ethanol Market Concentration (2005) ("2005 Ethanol Report"), *available at* http://www.ftc.gov/reports/ethanol05/20051202ethanolmarket.pdf; 2006 Report on Ethanol Market Concentration (2006) ("2006 Ethanol Report"), *available at* http://www.ftc.gov/reports/ethanol/Ethanol_Report_2006.pdf; 2007 Report on Ethanol Market Concentration (2007) ("2007 Ethanol Report"), *available at* http://www.ftc.gov/reports/ethanol/ 2007ethanol.pdf; 2008 Report on Ethanol Market Concentration (2008) ("2008 Ethanol Report"), *available at* http://www.ftc.gov/os/2008/11/081117ethanolreport.pdf; 2009 Report on Ethanol Market Concentration (2009) ("2009 Ethanol Report"), *available at* http://www.ftc.gov/ os/2009/12/091201ethanolreport.pdf.

based on two different measures of market share production capacity and actual production[5] allocated under three different approaches, for a total of six HHI calculations.[6] Based on production capacity, the HHIs for the domestic ethanol production industry range from 288 to 606, depending on the method of market share allocation. Based on actual production, the HHIs range from 244 to 671. Four of the six resulting HHIs for 2010 are slightly higher than those calculated for the 2009 Ethanol Report, indicating increased concentration. Two of the resulting HHIs for 2010 are slightly lower than those calculated for the 2009 Ethanol Report, indicating decreased concentration. However, all of the 2010 HHIs are below those presented in the 2008 Ethanol Report, consistent with a general trend toward deconcentration.

These figures indicate that the U.S. fuel ethanol[7] production industry is unconcentrated,[8] assuming domestic fuel ethanol production is a relevant market for competition analysis. This

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[5] Due to the confidential nature of the ethanol production data the Department of Energy's Energy Information Administration ("EIA") collects, EIA staff calculated both the actual production market shares and the production-based HHIs presented in this report at FTC staff's request. EIA provided only the aggregated HHI figures to FTC staff and did not disclose the underlying confidential data or market shares. *See* Section IV.B, *infra*.

[6] *See* Section IV, *infra*.

[7] This report analyzes fuel ethanol market concentration, rather than market concentration of all ethanol. Fuel ethanol and beverage-grade alcohol are not substitute products in consumption; fuel ethanol contains about five percent denaturant (for example, gasoline), rendering it undrinkable and exempt from the beverage alcohol tax. *See* Renewable Fuels Association ("RFA"), How Ethanol is Made, http://www.ethanolrfa.org/pages/how-ethanol-is-made (last visited Sept. 30, 2010).

[8] The Commission and the U.S. Department of Justice characterize markets in which the HHI is below 1500 as unconcentrated. HHIs between 1500 and 2500 indicate moderately concentrated markets, which may or may not raise competitive concerns. Markets with HHIs over 2500 are highly concentrated and are more likely to pose competitive concerns. U.S. Department of Justice and Federal Trade Commission Horizontal Merger Guidelines (2010) ("Horizontal Merger Guidelines" or "Guidelines") § 5.3, *available at* http://ftc.gov/os/2010/08/100819hmg.pdf.

assumption precludes consideration of (1) a broader relevant product market that includes other gasoline additives and (2) a relevant geographic market broader or narrower than the United States. Nonetheless, the level of concentration in the U.S. ethanol industry does not justify a presumption that a single ethanol producer or marketer or a group of such firms could exercise market power to set prices or coordinate on price or output levels.

II. Recent Industry Developments

Since 2005, Congress has required the domestic consumption of a minimum annual volume of renewable fuels, including both ethanol blended into motor fuels and biodiesel. The Energy Policy Act of 2005 originally established this minimum, the Renewable Fuel Standard ("RFS"), and set out escalating annual requirements for 2006 through 2012. The 2005 RFS required the use of 6.8 billion gallons of renewable fuels in 2010, rising to 7.5 billion gallons in 2012.[9] In the Energy Independence and Security Act of 2007, Congress amended the RFS, significantly increasing the volume minimums including a revised 2010 requirement of 12.95 billion gallons and extending the annual mandate to a peak requirement of 36 billion gallons in 2022.[10]

Ethanol demand has increased steadily year-over-year since the FTC's first Report on Ethanol Market Concentration.[11] This trend has held over the past year: for each month from

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[9] Energy Policy Act of 2005 § 1501(a)(2), 42 U.S.C. §7545(o)(2)(B)(i) (2007) (amended 2007).

[10] *See* Energy Independence and Security Act of 2007 § 202(a)(2), 42 U.S.C. § 7545(o)(2)(B)(i)(I) (2009).

[11] EIA, Annual U.S. Refinery and Blender Net Input of Fuel Ethanol (last modified July 29, 2010), *available at* http://www.eia.gov/nav/pet/hist/LeafHandler.ashx?n_pet&s_mferius1&f_a (last visited Sept. 30, 2010). *See also* prior Ethanol Reports, footnote 4, *supra*.

July 2009 to June 2010, the industry blended more ethanol than in the same month of the prior year.[12] Consistent with the upward trend in blending volumes,[13] industry participants believe that overall ethanol demand will be sufficient to meet the revised 2010 RFS minimum of 12.95 billion gallons.[14]

In recent years, domestic ethanol blending volumes have exceeded the RFS requirements. According to industry participants, favorable blending economics (*i.e.*, low ethanol prices relative to gasoline prices) have provided the primary incentive for refiners and blenders to blend ethanol volumes above the RFS minimum. These favorable blending economics persisted through much of 2010, despite an increase in ethanol prices from late 2009 into early 2010. Industry bankruptcies in 2008 and 2009 contracted ethanol supply as distressed producers idled their plants. This supply decrease, combined with increased demand, resulted in rising ethanol prices and higher production margins. Higher margins created a favorable

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[12] EIA, Monthly U.S. Refinery and Blender Net Input of Fuel Ethanol (last modified Sept. 29, 2010), *available at* http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n_pet&s_mferius1&f_m (last visited Sept. 30, 2010).

[13] In March 2009, EPA received an application for a waiver to allow gasoline blends with up to 15 percent ethanol content, an increase over the current 10 percent blending limit. Notice of Receipt of a Clean Air Act Waiver Application to Increase the Allowable Ethanol Content of Gasoline to 15 Percent, 74 Fed. Reg. 18228 (Apr. 21, 2009). EPA partially granted this waiver request on October 13, 2010, allowing commercial sale of gasoline with 15 percent ethanol content for use in light-duty motor vehicles of model years 2007 and later, subject to certain conditions regarding fuel quality and misfueling prevention. EPA, EPA Announces E15 Partial Waiver Decision and Fuel Pump Labeling Proposal (last modified Oct. 14, 2010), *available at* http://www.epa.gov/otaq/regs/fuels/additive/e15/420f10054.htm (last visited Oct. 14, 2010). EPA deferred a decision on the waiver for vehicles of model years 2001 to 2006 pending the availability of additional test data. *Id*.

[14] For perspective, total U.S. gasoline consumption over the last 12 months totaled approximately 137.8 billion gallons. *See* EIA, Monthly U.S. Product Supplied of Finished Motor Gasoline (last modified Sept. 29, 2010), *available at* http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n_pet&s_mgfupus1&f_m (last visited Sept. 30, 2010).

environment for producers, prompting a corresponding increase in supply. Idled capacity resumed production, in some cases under new ownership, and new production capacity came online with the completion of pre-existing construction projects. With increased supply, ethanol prices fell again. Industry participants indicated that present margins are thin or at break-even levels, and prices and margins may fall further if current plant construction and expansion projects begin production as expected later this year.

Although there is enough ethanol production capacity in existence and under construction to meet the RFS requirements in 2010, additional capacity will be necessary to meet future RFS mandates set out in the Energy Independence and Security Act of 2007, including volume requirements for advanced biofuels (defined as cellulosic ethanol and other biofuels derived from feedstocks other than corn starch).[15] Although there is no commercial-scale cellulosic ethanol production in operation today,[16] investment continues in the research and development of cellulosic ethanol production.

III. Summary of Market Concentration Trends

Ethanol production and production capacity have both increased this year. Domestic ethanol production increased approximately 23 percent between 2009 and 2010, from 10 billion

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[15] *See* Energy Independence and Security Act of 2007 § 202(a)(2), 42 U.S.C. § 7545(o)(2)(B)(i)(II)-(IV) (2009) (providing specific volume requirements for advanced biofuels, including biodiesel and cellulosic biofuel). The advanced biofuels minimums apply from 2009 to 2022. The biodiesel requirement started in 2009 with volume minimums specified through 2012. The cellulosic requirement takes effect in 2010 and extends until 2022. *Id*.

[16] EPA reduced the cellulosic biofuel standard for 2010 because EPA did not believe that the volume mandate could be met. Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program, 75 Fed. Reg. 14675 (Mar. 26, 2010) (to be codified at 40 C.F.R. pt. 80).

gallons to 12.3 billion gallons.[17] Production has increased over 750 percent since 2000, when domestic ethanol production was 1.6 billion gallons.[18] Domestic ethanol production capacity, including capacity under construction, also rose from 14.5 billion annualized gallons as of October 2009[19] to 15.2 billion gallons per year as of October 2010. Industry participants expect some of the expansion projects currently underway to come online by the end of 2010.

The number of firms producing ethanol has remained the same since last year's report. As of September 2010, 160 firms currently produce ethanol or likely will begin producing ethanol within the next 12 to 18 months. The largest ethanol producer's share of domestic capacity increased slightly to 12 percent above the 11 percent share in 2008 and 2009, but still below the largest producer's capacity share of 16 percent in 2007, 21 percent in 2006, 26 percent in 2005, and 41 percent in 2000.[20]

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[17] 2010 production figures cited in this report reflect production from July 2009 to June 2010; 2009 figures reflect production from July 2008 to June 2009. *See* EIA, Monthly U.S. Oxygenate Plant Production of Fuel Ethanol (last modified Sept. 29, 2010), *available at* http://www.eia.doe.gov/dnav/pet/hist/LeafHandler.ashx?n_pet&s_m_epooxe_yop_nus_1&f_m (last visited Sept. 30, 2010).

[18] *See* RFA, Climate of Opportunity: 2010 Ethanol Industry Outlook 3 (Feb. 2010) ("Climate of Opportunity"), *available at* http://www.ethanolrfa.org/pages/annual-industry-outlook.

[19] *See* 2009 Ethanol Report at 17. Unless indicated otherwise, measures of capacity in this report represent both current capacity and capacity under construction.

[20] *Id.* at 6.

IV. Analysis[21]

Section 1501(a)(2) of the Energy Policy Act of 2005 instructs the Commission to measure concentration in U.S. ethanol production using HHIs.[22] HHIs can provide a snapshot of market concentration[23] based upon the number of market participants and their respective sales, production, or capacity. The Commission and the U.S. Department of Justice regularly use HHIs to measure concentration in a relevant antitrust market as part of their analysis of the likely effects of a merger or acquisition on competition in that market.[24]

To calculate the HHIs that Section 1501(a)(2) requires, we must assume that U.S. fuel ethanol production is a relevant antitrust market.[25] This assumption precludes consideration of a

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[21] The background information in this section regarding HHI calculations and their relevance is consistent with the background information presented in last year's Report on Ethanol Market Concentration. *See* 2009 Ethanol Report at 7-8. The recent revision of the Horizontal Merger Guidelines does not alter the concentration analysis relevant for this report, except insofar as it adjusts the HHI thresholds for classification of a market as unconcentrated, moderately concentrated, or highly concentrated. *See* footnote 8, *supra* (presenting the updated thresholds).

[22] Energy Policy Act of 2005 § 1501(a)(2), 42 U.S.C. § 7545(o)(10)(A)(i) (2009). A given market's HHI is the sum of the squares of the individual market shares of all market participants. For example, a four-firm market with market shares of 30 percent, 30 percent, 20 percent, and 20 percent has an HHI of 2600 [(30*30) + (30*30) + (20*20) + (20*20) 2600]. HHIs range from 10,000 in a one-firm (pure monopoly) market to a number close to zero in a highly unconcentrated market.

[23] *See* footnote 8, *supra* (discussing the HHI threshold levels for characterizing a market as unconcentrated, moderately concentrated, or highly concentrated under the Horizontal Merger Guidelines). *See also* Horizontal Merger Guidelines § 5.3.

[24] In the context of merger review, the difference between the pre-merger HHI and the post-merger HHI is one factor that may affect how the agency might view the competitive significance of the merger, all other circumstances remaining equal. *See* Horizontal Merger Guidelines § 5.3.

[25] A relevant antitrust market has both product and geographic aspects. A relevant product market is a product or group of products such that a hypothetical profit-maximizing firm

broader or narrower relevant geographic market than the United States that could provide further insight into how ethanol producers compete. This assumption also precludes consideration of a broader relevant product market that includes other gasoline blending components that might be economically viable and environmentally acceptable substitutes for ethanol. It is likely that ethanol competes with other blending components, in which case HHIs based on a fuel ethanol market would understate the amount of competition in the industry.

As in previous years, this report presents six HHIs for the ethanol industry, calculated using two different measures of market share and three different methods of allocating those market shares. First, FTC staff calculated each producer's market share based on the producer's domestic ethanol production capacity. FTC staff then performed three separate HHI calculations, attributing the producer's market share: (1) to the producer itself; (2) to the producer or to the third-party firm that actually marketed the producer's ethanol output; and (3) to the marketing firm only if that firm marketed the producer's volumes pursuant to a pooling agreement (and, absent such a pooling agreement, to the producer). Second, EIA staff calculated market shares derived from its confidential ethanol production data. Using the market share

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that was the only seller of those products likely would impose at least a small but significant and nontransitory increase in price ("SSNIP"). If such a price increase would not be profitable because of the loss of sales to other products, the product or group of products would not be a relevant product market. Similarly, a relevant geographic market is a region such that a hypothetical profit-maximizing firm that was the only seller of the relevant product in that region likely would impose at least a SSNIP above the competitive level. If such a price increase would not be profitable because of the loss of sales to sellers outside the region, the region would be too narrow to be a relevant geographic market. *See* Horizontal Merger Guidelines §§ 4.1-4.2.

allocation methods described above, EIA staff then performed each of the HHI calculations and provided the resulting production-based HHIs to FTC staff.[26]

Four of the six HHIs calculated for this report are higher than those calculated in 2009, reflecting a minor increase in concentration. The other two calculations yielded HHIs just below those calculated for the 2009 Ethanol Report, indicating a decrease in concentration. In all cases, the 2010 HHIs, like the 2009 HHIs, are lower than the figures staff calculated in 2008, consistent with a general trend toward decreasing concentration.

A. Concentration with Market Shares Based on Production Capacity

For each of the HHI calculations described below, staff first calculated producers' market shares based on their fuel ethanol production capacity. Available production capacity provides a useful and easily confirmable indicator of a producer's competitive significance.[27]

Staff relied on publicly available information and interviews with producers, marketers, and other industry participants to determine the production capacity of each ethanol plant (and to obtain other information presented in this report). The RFA provides frequently updated data on ethanol plant capacity and capacity expansion plans on its website. Capacity information is also available on many individual producers' websites, some of which also provide details of construction and expansion plans. Some marketers publicly announce new agreements with

[26] FTC staff provided EIA staff with the information necessary to attribute market shares to marketers where appropriate. EIA staff provided only the aggregated HHI figures to FTC staff and did not disclose the underlying confidential data or market shares.

[27] *See* Horizontal Merger Guidelines § 5.2. In markets for homogeneous products (such as ethanol), a firm may derive its competitive significance primarily from its ability and incentive to increase production in the event of a competitor's price increase or output reduction, *i.e.*, its available capacity. *Id.*

producers, providing staff with the information necessary to attribute a producer's market share to the correct marketing firm when appropriate.

In determining the aggregate capacity of each producer, staff included the capacity of existing plants as well as the projected capacity of plants currently under construction and plants currently undergoing expansion. Staff included the capacity of these plant construction and expansion projects only where the producer had finalized construction plans, received the necessary financing for construction, and begun physical construction. According to industry participants, once a new plant or expansion project has reached this stage, completion is likely within 12 to 18 months. Incorporating capacity from such projects into current market share calculations is consistent with the approach set forth in the Horizontal Merger Guidelines.[28]

[28] *See* Horizontal Merger Guidelines § 5.1. The Guidelines include as market participants "rapid entrants" firms that are not current producers but likely would respond rapidly in the event of a SSNIP, with a direct competitive impact and without incurring significant sunk costs. Such firms have competitive significance even though they do not currently supply the relevant market. Rapid entrants can also include firms that produce the relevant product but refrain from selling it in the relevant geographic market, as well as firms that clearly possess the necessary capacity to supply the relevant market rapidly. This is particularly likely in markets for homogeneous goods when that capacity is efficient and available (as is the case with many ethanol plants under construction or undergoing expansion). *Id.*

1. *Attributing Market Shares to Producers*

Under the simplest approach to market concentration, staff allocated market share to each producer based on the producer's percentage of total production capacity. This method of calculation yielded an HHI of 288, unconcentrated under the Horizontal Merger Guidelines.[29] This HHI represents an increase from last year's HHI of 241[30] but a decrease from the 2008 HHI of 313.[31]

2. *Attributing Market Shares to Marketers*

Staff's second method of calculating market concentration is also capacity-based but attributes each producer's capacity to the firm marketing its ethanol. Many producers enter into marketing agreements with third parties to market their ethanol to blenders and end users, while other producers sell their output directly. For those producers that engage in direct sales, staff attributed the market shares to the producers themselves.[32]

Because one marketer may represent and make limited decisions for multiple individual producers, that marketer essentially aggregates these producers' capacities under a single entity.

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[29] The market shares implicit in these HHI calculations may suggest an analytic precision that does not reflect the rate of change in this industry, particularly as producers frequently announce capacity additions, new plants, and cancellations of plans to build new capacity. Staff's HHI calculations represent staff's best estimate of the industry's concentration as of September 2010, the cut-off date for our analysis unless otherwise indicated. This approach therefore excludes any more recent publicly available information.

[30] 2009 Ethanol Report at 10.

[31] 2008 Ethanol Report at 9.

[32] In some instances, staff was unable to determine whether a producer marketed for itself or used an outside marketing firm. In these instances, staff attributed market shares to the producers themselves.

For purposes of competitive analysis, attributing production capacity to marketers rather than to the actual producers provides a measure of industry concentration that captures this aggregation.

This approach yields an HHI of 606, unconcentrated under the Horizontal Merger Guidelines. Though slightly higher than last year's HHI of 547,[33] this HHI is still lower than the 2008 HHI of 723 calculated with the same market share allocation method.[34]

3. *Attributing Market Shares to Marketers with Pooling Agreements*

Staff's final approach to concentration calculation attributes a producer's market share to its third-party marketer only when the marketer sells the producer's output under the terms of a pooling agreement. Under a pooling agreement, the marketing firm sells its client producers' volumes in common rather than individually, which allows the marketing firm to make more significant decisions for its producer clients than a traditional marketing agreement. Generally, pool marketers make sales to customer accounts and assign a plant or plants to serve each particular account. Each producer receives a prorated share from the common revenue pool based on the volume it contributes. The output from each plant generally earns an identical return, regardless of the plant's location or its output's destination. Each producer under a pooling agreement receives purchase offers only from its marketer, which also represents other producers. By contrast, under a non-pooling marketing arrangement, the marketer sells its producers' volumes on a plant-specific basis and can present each producer with offers from multiple buyers.

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[33] 2009 Ethanol Report at 11.

[34] 2008 Ethanol Report at 11.

Because buyers do not make offers to individual producers within a pooling arrangement and deal only with the single marketer, attributing production capacity to the marketers only for those producers in pooling arrangements may capture the competitive significance of firms in the ethanol industry more accurately. Under this allocation approach, production volumes sold under non-pooling marketing arrangements contribute to the producer's market share rather than to the non-pool marketer's share. Measured in this way, the HHI is 343, unconcentrated under the Horizontal Merger Guidelines. It represents an increase from last year's HHI of 296[35] but remains below the 2008 HHI of 527.[36]

B. Concentration with Market Shares Based on Actual Production

At FTC staff's request, EIA staff calculated industry concentration using market shares based on market participants' actual production volumes over the past year. Using production data is instructive because capacity data have certain limitations, particularly insofar as stated capacity does not necessarily represent actual production capabilities. Ethanol plants often can produce as much as 10 to 15 percent more than their stated design capacities[37] and tend to do so as their owners and operators improve the production process and gain expertise in operating their plants. In this respect, actual production may reflect a market participant's competitive significance more accurately than would its plants' capacities.

There are some limitations to the accuracy of HHIs based on actual production, just as there are limitations to HHIs based on production capacity. HHIs based on production over a

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[35] 2009 Ethanol Report at 12.

[36] 2008 Ethanol Report at 11.

[37] *See* 2009 Ethanol Report at 12; 2008 Ethanol Report at 11; 2007 Ethanol Report at 12; 2006 Ethanol Report at 9; 2005 Ethanol Report at 12.

given period may overstate or understate actual concentration due to entry and exit of firms, construction of new capacity, and variations in capacity utilization rates during the relevant time frame. Specifically, the production-based HHIs provided below do not fully reflect the deconcentrating impact of new facilities that began production during the last 12 months, nor do they fully reflect the concentrating impact of plant closures and idlings during the period. In both cases, these facilities will have produced only a fraction of what they otherwise would produce in a full year, leading to an understatement (in the case of new facilities) or an overstatement (in the case of idled facilities) of their competitive significance in the market. Similarly, the HHIs below do not account for the likely deconcentrating effect of plant expansion and construction projects that are not yet in operation.[38]

EIA provided FTC staff with the final production-based HHIs contained in this report. Firms that produce over eight million gallons of oxygenates (such as ethanol) per year must report to EIA their monthly production volumes by product. These production data are confidential. Therefore, EIA provided only the aggregated HHIs to FTC staff and did not disclose the volumes of ethanol attributable to any individual producer or the market shares based on those volumes.[39] These production-based HHIs reflect actual production volumes from July 2009 through June 2010.

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[38] *See* 2009 Ethanol Report at 13; 2008 Ethanol Report at 12-13; 2007 Ethanol Report at 13; 2006 Ethanol Report at 11; 2005 Ethanol Report at 13.

[39] For producers for which EIA maintains production data, FTC staff provided EIA with the identity of those producers' marketers and whether those producers entered into pooling agreements with their marketers. EIA used this information, in conjunction with its own data on ethanol production, to calculate the HHIs that attribute market share to marketers.

Where EIA attributed the actual production market share directly to individual producers, the resulting HHI is 244, higher than the 2009 HHI of 232[40] but still well below the 2008 HHI of 376.[41] By contrast, the production-based HHIs that account for the effect of various ethanol marketing arrangements on concentration are lower than their corresponding 2009 HHIs. Attributing the market share of each producer to the firm that markets for that producer results in an HHI of 671. Attributing a producer's market shares to its marketing firm only when the marketing is pursuant to a pooling agreement yields an HHI of 304. These two HHIs are slightly lower than the comparable figures in last year's report (722 and 305, respectively).[42]

C. Ease of Entry and Imports

Today, the ethanol industry is unconcentrated, suggesting that an attempt to exercise market power is unlikely. Should the industry become more concentrated in the future, an increase in the price of ethanol resulting from anticompetitive conduct would likely remain unsustainable due to both (1) the ease of entry into the ethanol industry and (2) the responsiveness of imports to fluctuations in the U.S. ethanol price relative to foreign prices.

The U.S. ethanol production industry currently lacks significant barriers to entry. Potential entrants can purchase existing production facilities, some of which are currently idle due to recent economic conditions and past bankruptcies. In addition, construction and expansion projects continue in the industry today, suggesting that entry into the ethanol

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[40] 2009 Ethanol Report at 12.

[41] 2008 Ethanol Report at 12.

[42] 2009 Ethanol Report at 13-14.

marketplace by means of new capacity is not currently cost-prohibitive. An increase in supply resulting from new entry likely would make any exercise of market power unsustainable.

The probable influx of ethanol imports also would likely restrain any potential exercise of market power by a domestic firm. Ethanol import levels are responsive to fluctuations in the price of U.S. ethanol relative to foreign ethanol prices, particularly prices for Brazilian, sugar cane-based ethanol. Consistent with this relationship, ethanol exports have increased over the past year, while import volumes have decreased due to the low price of U.S. ethanol relative to prices in other countries. Import levels were significantly higher in recent years but decreased over the last year as foreign ethanol prices rose relative to the price of U.S. ethanol. If U.S. ethanol prices were to increase due to the exercise of market power by a domestic firm or group of firms, currently exported ethanol could remain in the domestic market,[43] and imports would likely increase, as they have in years past. The likely response of ethanol imports to an anticompetitive increase in domestic prices relative to foreign prices would render that increase unsustainable.

Even if domestic ethanol production were more concentrated than it is, the ease with which new firms can enter the domestic market and the responsiveness of ethanol imports to relative price changes likely would constrain anticompetitive behavior by domestic firms.

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[43] The level of concentration and the large number of market participants in the U.S. ethanol production industry suggest that collusion is unlikely among a sufficient number of firms to exercise market power. In the event of such collusion (in the form of an export cartel or otherwise), foreign imports likely would continue to act as a constraint on the cartel's exercise of market power.

V. Conclusion

Ethanol production has remained unconcentrated over the last year. Regardless of the particular measure of market share or the market share allocation method used to calculate concentration, the trend toward decreasing concentration observed in previous years has generally continued in 2010. Although some of the 2010 HHIs represent an increase in concentration from 2009, the industry remains less concentrated than it was in 2008. While firms generally did not begin new construction in 2010, additional ethanol production capacity came online, and construction already in progress is likely to begin operation in the next 12 to 18 months. Furthermore, potential entry by new firms and the possibility of ethanol imports provide additional constraints on the exercise of market power by current industry participants. These dynamics make it extremely unlikely that a single ethanol producer or marketer or a group of such firms could successfully exercise market power to engage in price-fixing or other anticompetitive behavior.

Figure 1: Domestic Fuel Ethanol Concentration[44]

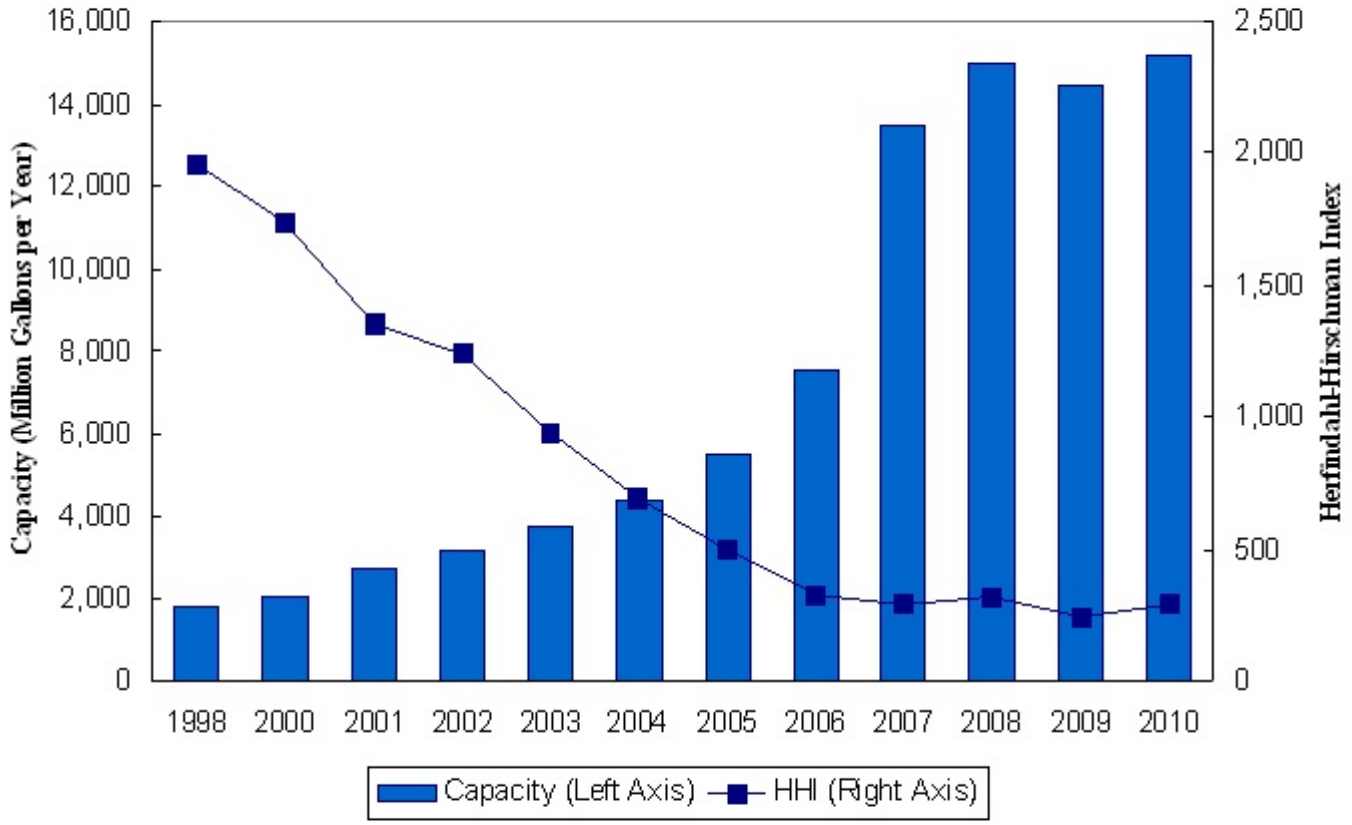
Concentration Based on Capacity	**2009 HHI**	**2010 HHI**
Shares attributed to each producer	241	288
Shares attributed to marketers for all marketing agreements	547	606
Shares attributed to marketers only for pooling agreements	296	343

Concentration Based on Production	**2009 HHI**	**2010 HHI**
Shares attributed to each producer	232	244
Shares attributed to marketers for all marketing agreements	722	671
Shares attributed to marketers only for pooling agreements	305	304

Source: Production HHIs from EIA
Note: Capacity for 2009 includes the capacity as of September of 2009 and the capacity additions under construction and expected to be completed within 12 to 18 months of September 2009. Capacity for 2010 includes the current capacity as of September 2010 and the capacity additions under construction and expected to be completed within 12 to 18 months of September 2010. Production data for 2009 are from July 2008 through June 2009, and production data for 2010 are from July 2009 to June 2010.

[44] As discussed in footnote 8 *supra*, the Commission and the Department of Justice characterize markets with HHIs below 1500 as unconcentrated. HHIs between 1500 and 2500 indicate moderately concentrated markets, and HHIs over 2500 indicate highly concentrated markets that are more likely to pose competitive concerns. Horizontal Merger Guidelines § 5.3.

Figure 2: Historical Fuel Ethanol Capacity and HHIs



Note: Annual figures are for operating capacity and capacity under construction at year-end for 1998 to 2004, and as of October for 2005 to 2010. HHIs provided are capacity-based, calculated with market share allocated to each individual producer.