2025 Report on Ethanol Market Concentration

I. Introduction

President Donald J. Trump is committed to lowering prices and strengthening our national security by unleashing America's energy dominance.[1] On January 20, 2025, President Trump issued an Executive Order declaring a national energy emergency, and directing the Environmental Protection Agency (EPA) to issue emergency fuel waivers to allow the year-round sale of E15 (15 percent ethanol) gasoline to lower prices at the pump.[2] Following President Trump's actions, U.S. ethanol production capacity has continued to rise, while competition among domestic ethanol producers remains strong.[3]

This Report presents the Federal Trade Commission's ("Commission" or FTC) concentration analysis of the ethanol production industry for 2025.[4] The report includes certain data and information from the U.S. Energy Information Administration (EIA), industry participants, and other sources.[5] Section 211 of the Clean Air Act, as amended by the Energy Policy Act of 2005, requires that the FTC annually "perform a market concentration analysis of the ethanol production industry . . . to determine whether there is sufficient competition among industry participants to avoid price-setting and other anticompetitive behavior."[6] Pursuant to the statute, the FTC must measure concentration using the Herfindahl-Hirschman Index ("HHI") and

[1] *See* Exec. Order No. 14154, Unleashing American Energy, 90 Fed. Reg. 8,353 (Jan. 20, 2025).

[2] Exec. Order No. 14156, Declaring a National Energy Emergency, 90 Fed. Reg. 8,433 (Jan. 20, 2025).

[3] *Infra* Figure 2.

[4] This Report builds upon Commission reports from previous years. Prior reports contain background information not included in this Report. *See* FTC, Oil and Gas Industry Initiatives: Reports, https://www.ftc.gov/advice-guidance/competition-guidance/industry-guidance/oil-gas-industry-initiatives.

[5] Certain data and information relied upon in this Report may be revised or updated between annual reports.

[6] Energy Policy Act of 2005, Pub. L. No. 109-58, § 1501, 119 Stat. 1067, 1074, *amended by* Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492, codified at 42 U.S.C. § 7545(o)(10). For purposes of this Report, we presume that Congress used the term "price-setting" to mean "illegal price fixing."

consider all marketing arrangements among industry participants in preparing its analysis.[7] Also pursuant to the statute, the FTC must deliver its report to Congress and the Administrator of the EPA.

The HHI is a measure of market concentration. A given market's HHI is the sum of the squares of the individual market shares of all market participants.[8] The statute, however, does not instruct the Commission to assess the competitiveness of any "market." It instead instructs the Commission to measure the concentration of "the ethanol production industry."[9] As in previous reports, therefore, Commission staff ("staff") analyzed concentration based solely on U.S. ethanol production capacity and actual production of ethanol. This concentration analysis does not consider whether ethanol production in any geographic area constitutes a relevant antitrust market or whether other gasoline-blending additives compete with ethanol such that the concentration of ethanol production would not accurately measure the competitiveness of the market in which consumers actually participate. Instead, and consistent with Congress's instruction, this analysis calculates "ethanol production industry" concentration on a nationwide basis, based on ethanol production capacity and actual ethanol production. For both measures, HHIs are calculated for producers and marketers. For both production capacity and actual production, concentration for producer shares is lower than concentration for marketer shares. Based on production capacity, the HHIs are 527 for producer-based shares and 929 for marketer-based shares. Based on actual production, the HHIs are 551 for producer-based shares and 1033 for marketer-based shares.

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[7] *Id*.

[8] 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.

[9] 42 U.S.C. § 7545(o)(10).

Approximately 100 firms produced or marketed ethanol in 2025. The largest ethanol producer's share of domestic capacity was 17 percent. Domestic ethanol production capacity increased slightly since last year's Report. Production capacity (including capacity under construction) was 18.541 billion gallons per year.[10]

Even assuming that nationwide ethanol production qualifies as a relevant market for antitrust purposes (and therefore is not subject to competition from other fuel additives, for example), the level of concentration and number of market participants in the U.S. ethanol production industry continue to suggest that the exercise of market power to set prices, or coordinate on price or output levels, is unlikely on a nationwide basis. As has been the case each year since the Commission began reporting, the current HHIs indicate that a single ethanol producer or marketer likely lacks market power at a national level.[11] Successful anticompetitive coordination at a national level would require agreement among a very large number of competitors and thus is similarly unlikely.

II. Analysis

Section 1501(a)(2) of the Energy Policy Act of 2005 instructs the Commission to use HHIs to measure concentration in the U.S. ethanol production industry.[12] HHIs can provide a snapshot of market concentration based upon the number of market participants and their

[10] Production capacity increased slightly from 18.408 billion gallons per year in 2024 to 18.541 billion gallons per year in 2025. Estimated total capacity takes into account information obtained through interviews with market participants and publicly available information, including information published online by the Renewable Fuels Association ("RFA") as of August 8, 2025, regarding Ethanol Biorefinery Locations. RFA, U.S. Ethanol and Alcohol-to-Jet Biorefineries, https://ethanolrfa.org/resources/ethanol-biorefinery-locations.

[11] *See* U.S. Department of Justice & Federal Trade Commission Merger Guidelines § 2.1 (2023), https://www.ftc.gov/system/files/ftc_gov/pdf/2023_merger_guidelines_final_12.18.2023.pdf ("Merger Guidelines").

[12] Energy Policy Act of 2005 § 1501(a)(2), *supra* note 6.

respective sales, production, or capacity.[13] As discussed above, Congress has instructed the Commission to assess the concentration in the "ethanol production industry." Such an analysis is distinct from the sort of analysis required by the antitrust laws, which asks about the competitiveness of "markets" rather than an "industry."[14] The difference matters because analyzing the concentration of an "industry" would not account for any competition imposed on that industry by other products that consumers would treat as a substitute for the industry's product—for example, other gasoline blending components.[15]

Pursuant to the statute, the Commission's analysis in this report uses HHI measures, which are traditionally used to calculate market shares, to calculate concentration levels for the U.S. ethanol production industry. This analysis does not consider whether U.S. ethanol production in any geographic area constitutes a relevant antitrust market or otherwise account for the possibility of competition from non-ethanol blending components. If, as a matter of fact, ethanol does compete with other non-ethanol blending components, then HHIs based on fuel ethanol production and marketing would likely overstate concentration and understate competition. The statute's directive to assess concentration in the "ethanol production industry" overall also precludes consideration of whether broader or narrower geographic markets than the

[13] The Commission and the U.S. Department of Justice Antitrust Division generally use HHIs to measure concentration in a relevant antitrust market. *See* Merger Guidelines, *supra* note 11, at § 2.1.

[14] *See United States v. E.I. du Pont de Nemours & Co.*, 351 U.S. 377, 393 (1956) ("Determination of the competitive market for commodities depends on how different from one another are the offered commodities in character or use, how far buyers will go to substitute one commodity for another.").

[15] A relevant antitrust market has both product and geographic aspects. A relevant product market may be defined by using the Hypothetical Monopolist/Monopsonist Test to evaluate whether a hypothetical profit-maximizing firm, not prevented by regulation from worsening terms, that was the only present and future seller of a product or group of products likely could profitably impose at least a small but significant and non-transitory increase in price ("SSNIP") or other worsening of terms ("SSNIPT") for at least one product in the group. If such a price increase or other imposition 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 could impose at least a SSNIP/SSNIPT above the competitive level. If such a price increase or other imposition 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* Merger Guidelines, *supra* note 11, at § 4.3

United States could provide further insight about competition in ethanol production and marketing.

This Report presents four HHIs for the ethanol industry, based on two different measures of market share (production capacity and actual production) and two different methods of attributing those market shares to various market participants (producers and marketers). With regard to measuring market share, for purposes of this Report, "production capacity" is defined to mean a plant's maximum annual output of ethanol minus any required downtime for maintenance.[16] "Actual production" is defined to mean a plant's actual annual output of ethanol.[17] With regard to attributing market shares to market participants, "producer" is defined to mean a firm that in fact manufactures the ethanol. As discussed below, "marketer" is defined to mean a firm, whether the producer itself or a third-party firm, that sells and transports a producer's ethanol output.

FTC staff calculated market shares based on domestic ethanol production capacity for producers and marketers. FTC staff relied on publicly available information and interviews with producers and marketers to determine the production capacity of each ethanol plant and marketing activities of marketers. FTC staff then calculated capacity-based HHIs for producers and marketers.

EIA staff calculated market shares based on actual production for producers and marketers. Due to the confidential nature of the ethanol production data the EIA collects, FTC staff provided to EIA staff the information necessary to attribute market shares to market

[16] Production capacity is also sometimes referred to as "operating capacity." For purposes of this Report, production capacity is distinct from "nameplate capacity," a common industry term that may refer to the intended full-load sustained output of a facility. Nameplate capacity may also be variously known as "rated capacity," "nominal capacity," "installed capacity," or "stated design capacity."

[17] Actual production is also sometimes referred to as "operating production."

participants.[18] EIA staff then separately calculated production-based HHIs for producers and marketers.[19]

A. Concentration with Market Shares Based on Production Capacity

FTC staff calculated market shares based on fuel ethanol production capacity.[20] Production capacity provides a useful and easily confirmable indicator of a producer's competitive significance.[21] In determining each producer's aggregate capacity, staff included the capacity of existing plants, as well as the projected capacity of plants currently under construction and plants currently undergoing expansion.[22] Incorporating capacity from such projects into current market share calculations is consistent with the approach set forth in the Merger Guidelines.[23]

[18] For producers for which EIA maintains production data, FTC staff provided EIA with the identities of those producers' marketers. EIA staff used this information, in conjunction with its own data on ethanol production, to calculate the HHIs that attribute market share to marketers.

[19] Because the production data are confidential, EIA staff did not disclose the volumes of ethanol attributable to any individual producer or the market shares based on those volumes.

[20] The RFA website provides frequently updated data on ethanol plant capacity and capacity expansion plans. Capacity information is also available on many individual producers' websites, some of which also provide details of construction and expansion plans. Staff obtained the production capacity for some producers directly from firm officials.

[21] In markets for homogeneous products (such as ethanol), a firm may derive its competitive significance primarily from its available capacity – i.e., its ability and incentive to increase production in the event of a competitor's price increase or output reduction. *See* Merger Guidelines, *supra* note 11, at § 4.4.B.

[22] Staff included the capacity of these construction and expansion projects only where the producer had finalized construction plans, received the necessary financing for construction, and begun physical construction. Ethanol producers frequently announce capacity additions, new plants, plant sales, and cancellations of plans to build new capacity. These HHI calculations represent staff's best estimate of the industry's concentration as of October 2025. This approach therefore excludes any more recent publicly available information that might be relevant to industry HHI calculations. These HHI calculations also might not capture the full complexity of industry ownership structures, especially the degree of control by minority interests held by marketers or third-party management service firms. However, the HHI resulting from attributing production to the marketer should capture any such complexity not reflected in the producer HHI.

[23] Firms not supplying products in the relevant market, but that have committed to entering the market in the near future, are also considered market participants. *See* Merger Guidelines, *supra* note 11, at § 4.4.A.

1. *Attributing Market Shares to Producers*

Under the first approach to market concentration, FTC staff attributed market share to each producer based on the producer's percentage of total production capacity. This method of calculation yielded an HHI of 527, a level regarded as not concentrated under the Merger Guidelines.[24] This HHI is slightly higher than the corresponding HHI of 509 in 2024.[25]

2. *Attributing Market Shares to Marketers*

Under the second approach, FTC staff attributed the market share of each producer to the firm that markets for that producer. Some producers sell the ethanol they produce directly to blenders and end users. Many producers, however, enter into marketing agreements with third parties to sell their output. An ethanol marketer may represent and make limited decisions for multiple individual producers, essentially aggregating those producers' capacities under a single entity. 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. If a producer engaged in direct sales, staff attributed the market shares to that producer.[26] Producers that do not engage in direct sales have their market shares attributed to the third-party firm that marketed the producer's ethanol output. This approach yields an HHI of 929, which is not concentrated under the Merger Guidelines. This HHI is higher than the corresponding HHI of 862 in 2024.[27]

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[24] *See id*. at § 2.1.

[25] *See* 2024 Ethanol Report, *supra* note 4, at 5. The industry continued to experience shifts in plant capacity through plant expansions, conversions, openings, and closures over the past 12 months. Because the HHI captures these adjustments in the aggregate, it ignores the individual activity of industry participants. For example, the HHI may include a producer's acquisition of another producer's facilities that coincided with the restart or reconstruction of an idled facility. Alternatively, the HHI may exclude a plant that was converted to other uses, formally closed, or judged unlikely to reopen in the near future.

[26] Some marketers publicly announce new agreements with producers. Where staff could not determine whether a producer marketed for itself or used an outside marketing firm, staff attributed market share to the producer.

[27] *See* 2024 Ethanol Report, *supra* note 4, at 6.

B. Concentration with Market Shares Based on Actual Production

EIA staff calculated market shares based on actual production. Firms that produce ethanol must report their monthly production volumes to EIA. 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 can sometimes produce more than their stated design capacity (i.e., nameplate capacity) and sometimes operate at increasing rates as their owners and operators improve the production process and gain expertise in operating their plants.[28] Thus, actual production may reflect a market participant's competitive significance more accurately than would the sum of its plants' stated design capacities.

There are some limitations on the accuracy of HHIs based on actual production, just as there are with capacity-based HHIs. HHIs based on production over a given period may overstate or understate actual concentration due to entry and exit of firms, expansion of existing capacity, and variations in capacity utilization rates during the relevant period. Specifically, the production-based HHIs provided below do not fully reflect the impact of new facilities that began production during the last 12 months, nor do they fully reflect the impact of plant closures and idling during the period. In both cases, these facilities produced only a fraction of what they otherwise could 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 effects on concentration of plant expansions that have been in effect for less than 12 months and capacity-enhancing improvement

[28] Similarly, some ethanol producers may not be in a position to utilize their full plant capacity. Actual production may be a better indicator of their competitive significance in such cases.

projects that are not yet in operation. These production-based HHIs reflect actual production volumes from July 2024 through June 2025.

1. *Attributing Market Shares to Producers*

Where EIA attributed the actual production market share directly to individual producers, the resulting HHI is 551, slightly higher than the 2024 HHI of 531.[29]

2. *Attributing Market Shares to Marketers*

Calculating production-based concentration by attributing the market share of each producer to the firm that markets for that producer results in an HHI of 1033, higher than the 2024 HHI of 942.[30]

III. Conclusion

Regardless of the particular measure of market share or the market share attribution method used to calculate concentration, the ethanol industry remains not concentrated at a national level. The level of concentration and number of participants in the U.S. ethanol production industry continue to suggest that the exercise of national market power to set prices, or coordinate on price and output levels, is unlikely.

[29] *See* 2024 Ethanol Report, *supra* note 4, at 7.
[30] *Id*. at 8.

Figure 1: Domestic Fuel Ethanol Concentration

Concentration Based on Production Capacity	**2024 HHI[31]**	**2025 HHI**
Shares attributed to each producer	509	527
Shares attributed to marketers for all marketing agreements	862	929
Concentration Based on Actual Production	**2024 HHI[32]**	**2025 HHI**
Shares attributed to each producer	531	551
Shares attributed to marketers for all marketing agreements	942	1033
Note: Production capacity for 2025 includes the annual production capacity as of October 2025 and the capacity additions under construction and expected completions within 12 to 18 months thereafter. Actual production data for 2025 are from the annual period of July 2024 through June 2025.		

[31] *See* 2024 Ethanol Report, *supra* note 4, at 9.

[32] *Id*.

Figure 2: Historical Fuel Ethanol Capacity and HHIs